



Martins Creek Quarry Extension Project

REVISED PROJECT SUBMISSIONS REPORT

November 2021



MARTINS CREEK QUARRY EXTENSION PROJECT

Submissions Report

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Daracon Group

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Report No. 3957C/R12
Date: November 2021



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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
FINAL	Barbara Crossley	17 November 2021	Barbara Crossley	18 November 2021

Executive Summary

The Amended Development Application (ADA) and Response to Submissions (RTS) Report (ADA Report) for the Martins Creek Quarry Extension Project (Umwelt, 2021) was placed on public exhibition from 2 June 2021 to 31 July 2021. This Submission Report has been prepared to address the key issues raised in the submissions received during the public exhibition period.

The Martins Creek Quarry (the quarry) is operated by Buttai Gravel Pty Ltd, which is part of the Daracon Group (hereafter referred to as Daracon). The quarry is an existing hard rock quarry situated within the Local Government Area (LGA), approximately 7 kilometres (km) north of Paterson and 28 km north of Maitland, New South Wales (NSW). Daracon is seeking development consent under the *Environmental Planning and Assessment Act 1979* (EP&A Act) to expand the quarry operations at the quarry.

During public exhibition, 686 submissions were made on the Revised Project. This included 14 government agency submissions and 672 community and organisations/interest group submissions. The 672 submissions received from the community and organisations/interest groups included 636 submissions objecting to the Revised Project, 31 submissions in support, and 5 submissions providing comment on the Revised Project. A full analysis of the submissions is provided in **Section 2.0**.

In correspondence dated 2 August 2021, the Department of Planning, Industry and Environment (DPIE) requested Daracon to formally respond to issues raised in the submissions, as required under clause 82 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). This Submissions Report has been prepared by Umwelt Australia Pty Ltd (Umwelt) on behalf of Daracon in accordance with the *State significant development guidelines – preparing a submissions report* (DPIE, 2021) to address the key issues raised in the submissions.

Daracon has made substantial effort throughout the ADA process to engage with the community and regulatory authorities in relation to the impacts associated with the proposed expansion of the quarry. The Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Revised Project. In particular, Daracon have committed to reduce the extraction limits, operational hours and truck movements.

The key features of the Revised Project include:

- extraction of up to a maximum of 1.1 Mtpa of quarry product material over 25 years, with road transportation up to a maximum of 500,000 tpa
- revised product transport arrangements, including:
 - reduced peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm
 - no road haulage of quarry product on Saturday

- no road haulage between 24 December and 1 January, inclusive
- no trucks through Paterson Village before 6.45 am
- increased quarry product transported by rail
- removal of Haul Route 2 as primary haul route (now proposed only to service local jobs as required)
- revised operating hours of 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday, and no evening or night operation, apart from rail loading and transportation and necessary maintenance and environmental management activities
- 16.8 ha reduction in the proposed disturbance footprint, including avoiding approximately 15.3 ha of native vegetation in the former East Pit (Lot 21 DP 773220)
- construction and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access road, effectively bypassing Martins Creek Village
- improvements at the Dungog Road and Gresford Road intersection and the King and Duke Street intersection (within the village of Paterson)
- upgrades to the approach to Gostwyck Bridge
- extension of the rail spur to facilitate longer trains to transport more quarry product
- establishment of noise bunds and noise attenuation of the existing fixed processing plant with further upgrades and replacements to reduce noise and air quality impacts
- progressive rehabilitation of the quarry.

Following consideration of the submissions received on the Revised Project, additional assessment has been completed and further mitigation measures considered to address issues raised in submissions. Key additional changes include:

a commitment to constructing the new quarry access and railway bridge within 2 years of project approval rather than 4 years, subject to obtaining relevant secondary approvals from ARTC and DSC within 12 months of project approval

construction of a barrier along the northern end of Station Street, to further reduce the potential noise impacts associated with rail loading activities from the Revised Project, should agreements with potentially impacted residences not be reached.

The Revised Project proposes a suite of management and mitigation measures in order to ameliorate potential impacts. Daracon have reviewed and updated proposed management and mitigation measures in response to agency and community submissions. A consolidated summary of all the proposed environmental management and monitoring measures is provided in **Appendix 2**.

The proposed continued operation and extension of the quarry is intended for the supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

The SIA has identified that the key negative social impacts predicted include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts. Positive impacts of relevance include potential economic benefits to the region and State through employment, procurement and business opportunities. The Revised Project will also lead to a secured availability of construction materials for markets across NSW.

As has been highlighted in the SIA, project development brings benefits and costs that are not always evenly distributed across individuals and stakeholder groups and as a result, where social impacts are predicted it is the role of a SIA to outline how such impacts can or cannot be managed.

Given Daracon's approach of reviewing the Revised Project design to minimise impacts, the social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

As outlined in the ADA Report (Umwelt, 2021), the Revised Project has been assessed against the principles of Ecologically Sustainable Development (ESD) as required by the EP&A Act and EP&A Regulation. This assessment has indicated that while the Revised Project will have impacts, these impacts can be effectively managed and mitigated and the development will result in economic benefits. The assessment therefore concluded that the Revised Project is consistent with the principles of ESD and after consideration of the submissions made and the responses provided in this report, there is no change to that conclusion.

The Economic Assessment (refer to Appendix P of the ADA Report) describes a range of positive benefits from the Revised Project that will result at a local, regional and State level. These benefits include:

- employment of approximately 22 full time equivalent employees
- the Revised Project is estimated to provide a net benefit of \$58 million to NSW, in NPV terms
- the Revised Project is estimated to generate \$11.5 million in NPV terms for Australia, of which \$3.7 million is attributed to NSW
- the Revised Project is estimated to generate \$1.5 million in royalties, payroll tax and Council rates in NPV terms
- the Revised Project is estimated to provide a net producer surplus attributed to NSW of \$13.5 million in NPV terms.

On this basis, it would be reasonable to consider that with the implementation of the management, mitigation and offset measures proposed by Daracon, the Revised Project will result in a net benefit to the NSW community.

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Appendix 8	Noise Peer Review Comments and Responses

1.0 Introduction

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1.1 Overview of the Revised Project

The quarry was established in 1914 by the NSW Government Railways for the purpose of supplying railway ballast and other quarry materials to both the NSW railway network and Hunter Valley/Newcastle construction projects. Until late 2012, the quarry was operated continuously by various NSW Government transport departments, authorities and corporations.

In December 2012, Daracon secured a long term licence of the quarry and extracted material in order for the quarry to produce high quality aggregates, roadbase, ballast, gabion and other specified materials used in road, railway, concrete and civil construction.

In 2014, Daracon submitted a development application for the Martins Creek Quarry Extension Project. This application sought approval for the consolidation of the existing development approvals and the expansion of the quarry into new areas to extract and haul by road transport up to 1.5 million tonnes (Mt) of material per annum (pa) over a 30 year period (Monteath & Powys, 2014) (hereafter referred to as the Original Project).

Submissions received during the exhibition period raised substantial concern regarding the operational parameters of the Original Project, associated impacts on local communities and the level of assessment that was undertaken during the preparation of the environmental impact statement (EIS) for the Original Project. Key concerns from the local communities related to traffic and transport (including the volume and

frequency of truck movements and road safety), noise, blasting and vibration and impacts to the rural amenity and lifestyles. Furthermore, some of the government agencies requested further information and/or revised impact assessments to adequately address the assessment requirements relating to noise, traffic and transport, air quality, water, land, biodiversity and rehabilitation.

In response to the public and government agency concerns, Daracon and Umwelt undertook extensive stakeholder engagement and a thorough review of the Original Project to redesign key operational parameters in order to reduce environmental and social impacts. In particular, Daracon have committed to reduce the extraction limits, operational hours and truck movements (the Revised Project).

The key features of the Revised Project include:

- extraction of up to a maximum of 1.1 Mtpa of quarry product material over 25 years, with road transportation up to a maximum of 500,000 tpa
- revised product transport arrangements, including:
 - reduced peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm
 - no road haulage of quarry product on Saturday
 - no road haulage between 24 December and 1 January, inclusive
 - no trucks through Paterson Village before 6.45 am
 - increased quarry product transported by rail
 - removal of Haul Route 2 as primary haul route (now proposed only to service local jobs as required)
- revised operating hours of 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday, and no evening or night operation, apart from rail loading and transportation and necessary maintenance activities.
- 16.8 ha reduction in the proposed disturbance footprint, including avoiding approximately 15.3 ha of native vegetation in the former East Pit (Lot 21 DP 773220)
- construction and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access
- improvements at the Dungog Road and Gresford Road intersection and the King and Duke Street intersection (within the village of Paterson)
- upgrades to the approach to Gostwyck Bridge
- extension of the rail spur to facilitate longer trains to transport more quarry product
- establishment of noise bunds and noise attenuation of the existing fixed processing plant with further upgrades and replacements to reduce noise and air quality impacts
- progressive rehabilitation of the quarry.

The key features of the Revised Project are illustrated in **Figure 1.2**. Further to this the key features of the Revised Project are summarised in **Table 1.1** along with a comparison against the Original Project.

Table 1.1 Comparison of the Key Features of the Original Project (as exhibited in 2016) against the Revised Project

Key Project Feature	Original Project (as per the exhibited EIS, 2016)	Revised Project (as per the ADA Report, 2021)
Proposed Quarry Operations Approval Term	30 years	25 years
Limits on Extraction	Total extraction of up to 1.5 Mtpa, of which up to 1.45 Mtpa on road for quarry sales transportation	Total extraction up to 1.1 Mtpa, with a combination of road and rail transportation
	Majority by road, approximately 50,000 tonnes by rail	A maximum of 500,000 tpa by road for quarry sales transportation
Quarry Extent	Original Project disturbance area of 82.2 ha, including previously cleared land	Revised Project disturbance area of 66 ha, including previously cleared land – a reduction of 16.8 ha
Operating Hours	In pit quarrying operations - 6.00 am to 6.00 pm Monday to Saturday	In pit quarrying operations - 7.00 am to 6.00 pm Monday to Saturday No in-pit mobile crushing in the West Pit
		Blasting of quarry material only between 11.00 am and 3.00 pm Monday to Friday
		No blasting on Saturday, Sunday or Public holidays
	Evening/Night crushing and processing activities - 6.00 pm to 10.00 pm	No quarrying or processing during evening period (6.00 pm to 10.00 pm)
	Pugmill mixing and binder delivery operations - 4.30 am to 10.00 pm Monday to Friday, 4.30 am to 6.00 pm Saturday	No operations during night period (10.00 pm to 7.00 am) No crushing or processing prior to 7.00 am Monday to Saturday
	Sales loading and stockpiling for road transport - 5.30 am to 7.00 pm Monday to Saturday	No loading of product trucks prior to 7.00 am Monday to Friday
		No quarry trucks through Paterson prior to 6.45 am Monday to Friday
		No road haulage of quarry product on Saturday or between 24 December and 1 January
	Loading and parking of trucks on site overnight	Provision for up to 10 unladen Daracon trucks (not contractors) to return to the quarry between 6.00 pm and 7.00 pm Monday to Friday to park in the quarry overnight and be loaded during this time in readiness for departure from 7.00 am the following morning. (Note: in the case of trucks loaded on Friday evening, departure will be no earlier than 7.00 am Monday morning.)
	Train loading - 24 hours/7 days per week	No change

Key Project Feature	Original Project (as per the exhibited EIS, 2016)	Revised Project (as per the ADA Report, 2021)
	General Maintenance and Environmental Management Control – not specified	24 hours/7 days per week as required, including vehicles/trucks moving in and out of the site for maintenance purposes, as required
Rehabilitation	Rehabilitation of the Project Area	No change
Workforce Numbers	Operation – an additional 16 jobs at full capacity	Operation – 22 full time equivalent positions
	Construction and Decommissioning – up to 155 jobs	Construction, pre-clearing, rehabilitation and decommissioning – in the order of 120 jobs over the life of the construction/ decommissioning, with a peak of 20-30 construction workers in any given phase.
Infrastructure Construction Activities	New access road and driveway including a bridge over the existing railway line	Further engineering design work has been undertaken on the access road. Access road and bridge is estimated to be completed within 4 years following development consent, subject to gaining relevant Road Act approvals from DSC for the intersection with Dungog Road and ARTC approvals and scheduled construction window to complete the railway bridge. The duration of construction work is estimated to be 50 weeks.
	Potential extension of internal rail siding	No change (Revised rail spur footprint following further design options).
Product Transportation	Maximum 215 loaded product trucks per day (430 movements per day)	Maximum of 140 loaded product trucks (280 movements) per day for 50 days per year, otherwise 100 loaded product trucks (200 movements).
	Maximum 40 loaded product trucks per hour (80 movements) per hour	Maximum of 20 loaded product trucks (40 movements) per hour between 7.00 am and 3.00 pm. Maximum of 15 loaded product trucks (30 movements) per hour between 3.00 pm and 6.00 pm.
	Maintain the ability to transport quarry material via rail	No change
Road haul route	Route 1 - Martins Creek Quarry via Station Street, Grace Avenue, Dungog Road, Gresford Road, Tocal Road, Paterson Road, Flat Road, Pitnacree Road, Melbourne Street, New England Highway	No change to Primary Haul Route 1, however, after the bridge and new access road is constructed, there will be no haulage along Station Street and Grace Avenue.
	Route 2 - Martins Creek Quarry via Station Street, Grace Avenue, Dungog Road, Gresford Road, Butterwick Road, Clarence Town Road, Brandy Hill Drive, Seaham Road	Haul Route 2 no longer proposed

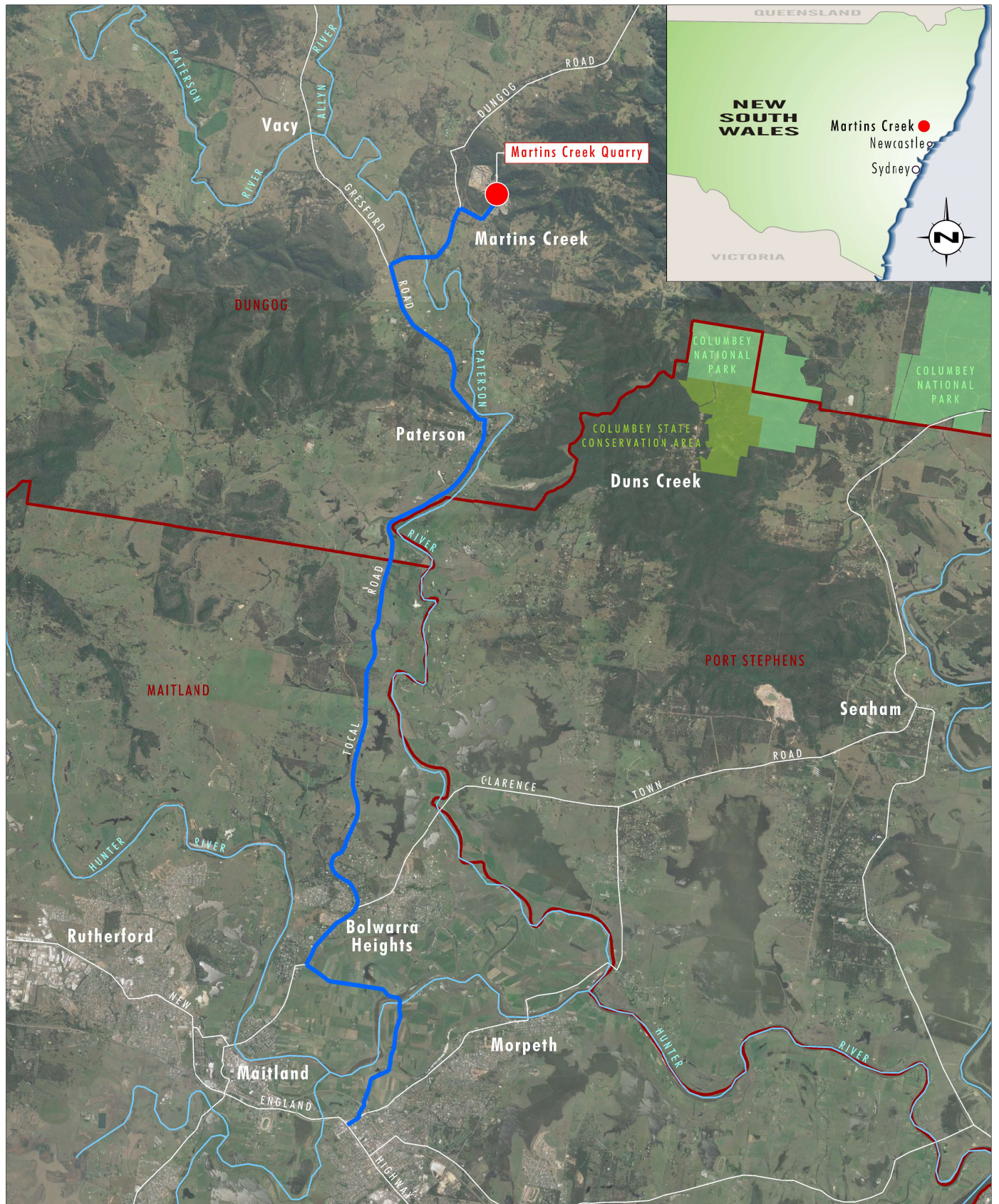


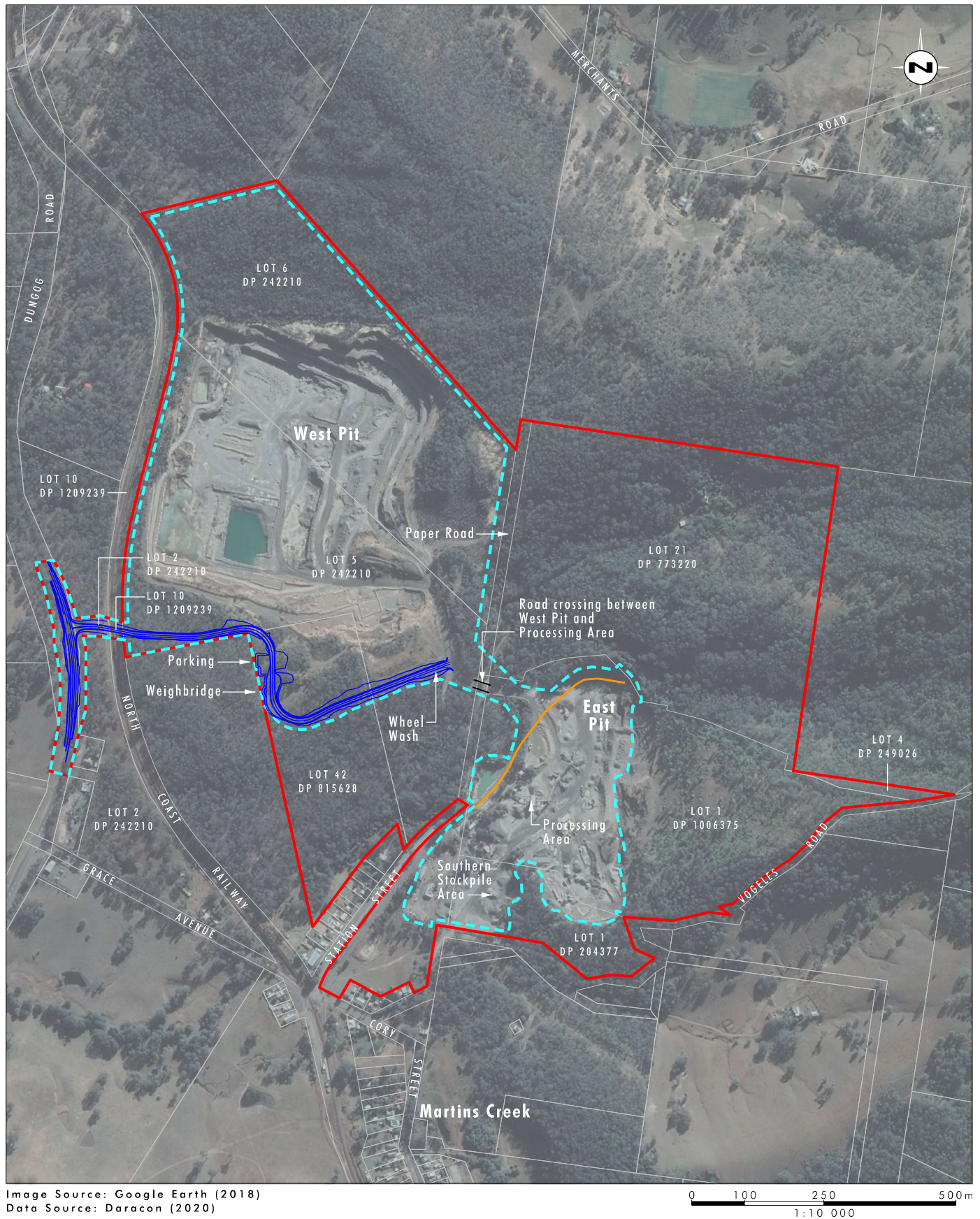
Image Source: Google Earth (2017)
 Data Source: LPI (2019),
 NSW National Parks and Wildlife Service (NPWS) Estate (Jan 2018)

0 2.0 4.0 6.0 km
 1:125 000

Legend

- Martins Creek Quarry
- Local Government Area Boundary
- Proposed Primary Haul Route

FIGURE 1.1
 Locality Plan



Legend

- Project Area
- - - Proposed Disturbance Area
- New Access Road
- Proposed Rail Siding Extension

FIGURE 1.2

Key Features of the Revised Project

1.2 Land and Environment Court Proceedings

In 2015, Dungog Shire Council (DSC) brought action against the lessee of the quarry land (Hunter Industrial Rental Equipment Pty Ltd) and the operator of the quarry (Buttai Gravel Pty Ltd) for breaching section 76A (now section 4.2) of the EP&A Act. DSC asserted that operations at the quarry were being carried out without consent or otherwise than in accordance with an existing development consent granted in 1991 (1991 Consent).

On 12 October 2018, the Land and Environment Court (LEC) found that some operations at the quarry were contrary to the 1991 Consent and made various declarations and orders, including orders restraining the Respondents from carrying out certain activities. The LEC granted a three month stay of the orders until 12 January 2019. During the stay period, quarry operations were required to be undertaken in accordance with an Interim Environmental Management Plan (IEMP) until such time as this application was determined and all required consents, approvals and licences were granted.

The lessee and the operator lodged an appeal with the Court of Appeal and a further stay of the LEC orders was granted until the appeal was determined.

The Court of Appeal judgment was delivered on 20 June 2019. The Court of Appeal ordered that the quarry operator is restrained from:

- a. using the land otherwise than as a quarry primarily for the purposes of winning railway ballast
- b. excavating rock on Lot 6 DP 242210 without consent, and
- c. permitting the transport of greatly more than 30% of the quarry products derived from rock excavated from the land by public road on an annual basis, without the approval of DSC.

Importantly, the Court of Appeal declined to make orders:

- d. restricting extractive operations on Lot 5 to a specific area and depth, or
- e. restraining the use of the Processing Area, provided that the only product extracted from the quarry is processed.

In addition, the LEC rejected an assertion by DSC that transport of product from the quarry was limited to 12 truckloads per day and this decision was not changed by the Court of Appeal.

The Court of Appeal also set aside a variation to Environment Protection Licence (EPL) 1378 that permitted an increase in the maximum extraction of product at the quarry from 500,000 tpa to 2 Mtpa. The effect of this order is that the EPL authorises, under the *Protection of the Environment Operations Act 1997* (PoEO Act), extraction and processing of activities with an annual capacity of 100,000 to 500,000 t.

A three month stay of the Court of Appeal orders was granted, until 20 September 2019. The stay was subject to conditions, including a requirement that all operations be conducted in accordance with an amended IEMP.

In September 2019, an application was heard by the LEC to extend the stay for a period of 12 months, subject to continued operations in accordance with the IEMP conditions. The LEC refused to grant the extension of the stay, with the effect that the Court of Appeal's orders became operative.

Since 24 September 2019 the quarry has operated within the parameters of the Court of Appeal orders. The Court of Appeal judgement did not specifically address all aspects of the existing approval rights in relation to use of the site for quarrying, processing and associated activities. A summary of the key parameters of approved operations, based on Daracon's legal advice, is provided in **Section 1.2.1**.

1.2.1 Approved Operations

The quarry comprises two distinct areas of operation; the parts of the quarry east of Station Street described as the Eastern Lands and the parts of the quarry west of Station Street described as the Western Lands.

Quarry operations in the Eastern Lands commenced in either 1914 or 1915 and expanded between 1952 and 1975. On 18 May 1999, DSC formally resolved to recognise and accept the existence of existing use rights on the Eastern Lands, for the processing of material. In so doing, DSC concurrently resolved that processing of materials on Lot 2 in DP 524511 (now part of Lot 1 DP 1006375) was limited to 449,000 t of bulk material per annum.

In 1991, development consent was granted by DSC for an extractive industry being a quarry winning material primarily for railway ballast on Lots 5 and 6 in DP 242210 (Western Lands), subject to conditions. After quarrying moved to the Western Lands in approximately 1993, the Eastern Lands continued to be used for the purpose of processing quarry materials. The LEC and Court of Appeal confirmed that any continuing or existing use rights which apply to the Eastern Lands are limited to the processing of materials extracted from the Western Lands.

The key parameters of the approved development include:

- extraction primarily for the purposes of winning railway ballast
- extraction of rock from Lot 5 DP 242210 (in Western Lands) and not from Lot 6 DP 242210
- extraction of up to 500,000 tpa (effectively limited by the activities authorised by the EPL licence)
- continuing use rights for the Eastern Lands for the processing of material extracted from the Western Lands
- tertiary processing on the Eastern Lands of up to 449,000 tpa
- no limit on the number of trucks subject, provided that not greatly more than 30% of material per annum is transported by truck
- no limit on proposed haul route on public roads.

1.3 Structure of Report

In accordance with the abovementioned DPIE (2021) Guideline, this Submissions Report is structured as follows:

- **Section 1.0** – provides a brief summary of the Revised Project to provide context for the submissions
- **Section 2.0** – provides an analysis of the issues and themes raised in the submissions
- **Section 3.0** – summarises the actions taken since the exhibition
- **Section 4.0** – provides a detailed response to the issues raised in the agency submissions
- **Section 5.0** – provides a detailed response to the issues raised in the organisation / interest group submissions
- **Section 6.0** – provides a detailed response to community submissions
- **Section 7.0** – provides an updated evaluation of the merits of the Revised Project
- **Appendices:**
 - submission register (**Appendix 1**)
 - updated table of proposed mitigation measures (**Appendix 2**)
 - supporting information, including **Appendix 3** to **Appendix 8**, as referenced in this report.

2.0 Submissions Analysis

2.1 Breakdown of Submissions

The ADA Report was placed on public exhibition from 2 June 2021 to 31 July 2021. During the public exhibition period 686 submissions were made on the Revised Project. This included 14 government agency submissions and 672 community and organisation / interest group submissions.

A number of submitters lodged more than one submission. Where this is the case, only one submission has been counted in the number of submissions.

Table 2.1 provides a breakdown of the submissions received for the Revised Project.

Table 2.1 Breakdown of Submissions

Category	Number of Submissions
Agency (State/Public Authority)	11
Council(s)	3
Organisations/Community and Interest Group	33
Members of the Public	639
Total	686

Appendix 1 provides the Register of Submitters.

It is noted that a public submission was received after the exhibition period ended. As directed by DPIE, this submission is noted as a 'Representation' and has not been included in the number of submissions or analysis of submissions.

2.1.1 Agency Submissions

As outlined in **Table 2.1**, 14 agency submissions and three council submissions were received, which included:

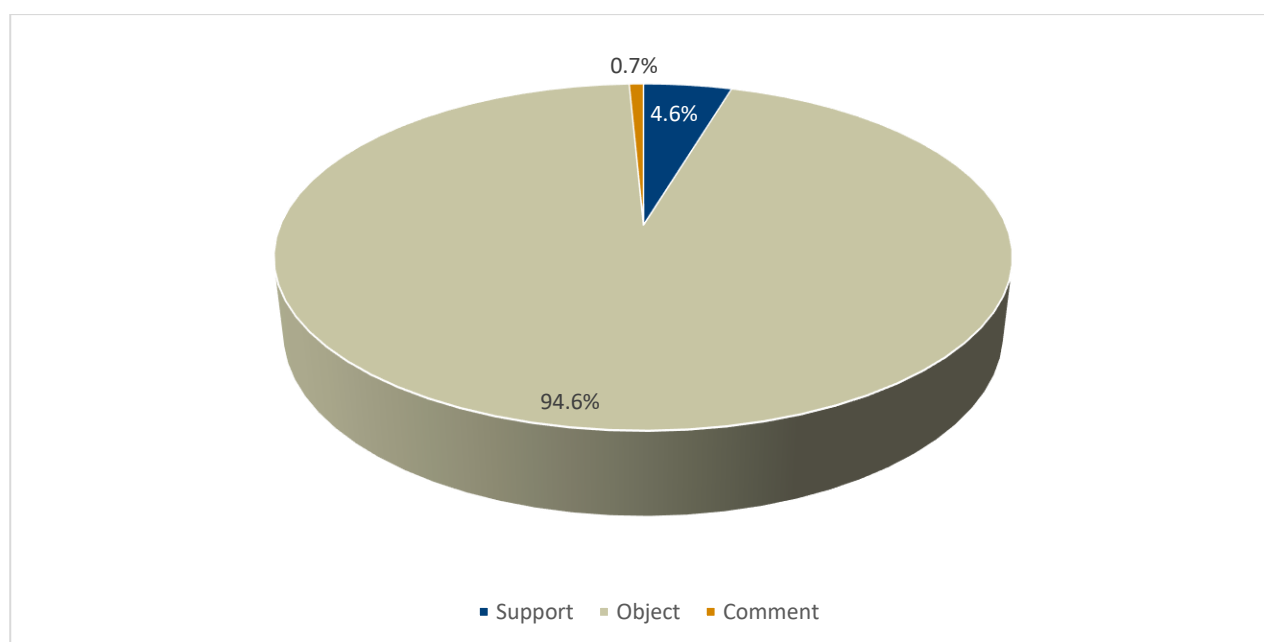
- Environment Protection Authority (EPA)
- Department of Planning, Industry and Environment – Water (DPIE Water) and Natural Resources Access Regulator (NRAR)
- Biodiversity Conservation Division (BCD)
- Transport for NSW (TfNSW)
- Heritage NSW
- Heritage Council of NSW
- NSW Resource Regulator
- Crown Lands
- NSW Department of Primary Industries – Agriculture (DPI Agriculture)

- Department of Primary Industries – Fisheries (DPI Fisheries)
- Forestry Corporation of NSW (FCNSW)
- Dungog Shire Council (DSC)
- Maitland City Council (MCC)
- Port Stephens Council (PSC).

The DSC submission is registered as 'Comments' however the submission indicates that DSC '*cannot support the proposal in its current form*'. MCC objected to the Revised Project. All other agencies did not identify whether they opposed or supported the Revised Project, however, several agencies made submissions seeking further clarification regarding aspects of the assessment of the Revised Project. These submissions are discussed further in **Section 4.0**.

2.1.2 Community and Interest Group Submissions

Of the 672 submissions from community members, interest groups and organisations, a total of 636 (94.6%) were objections, 31 (4.6%) were in support and 5 (0.7%) provided comment (refer to **Graph 2.1**).



Graph 2.1 Percentage of Supporting and Objecting Community and Organisation/Interest Group Submissions

The breakdown of the 672 submissions received from community and organisations/interest group are provided in **Table 2.2**.

Table 2.2 Breakdown of Community and Organisation/Interest Group Submission

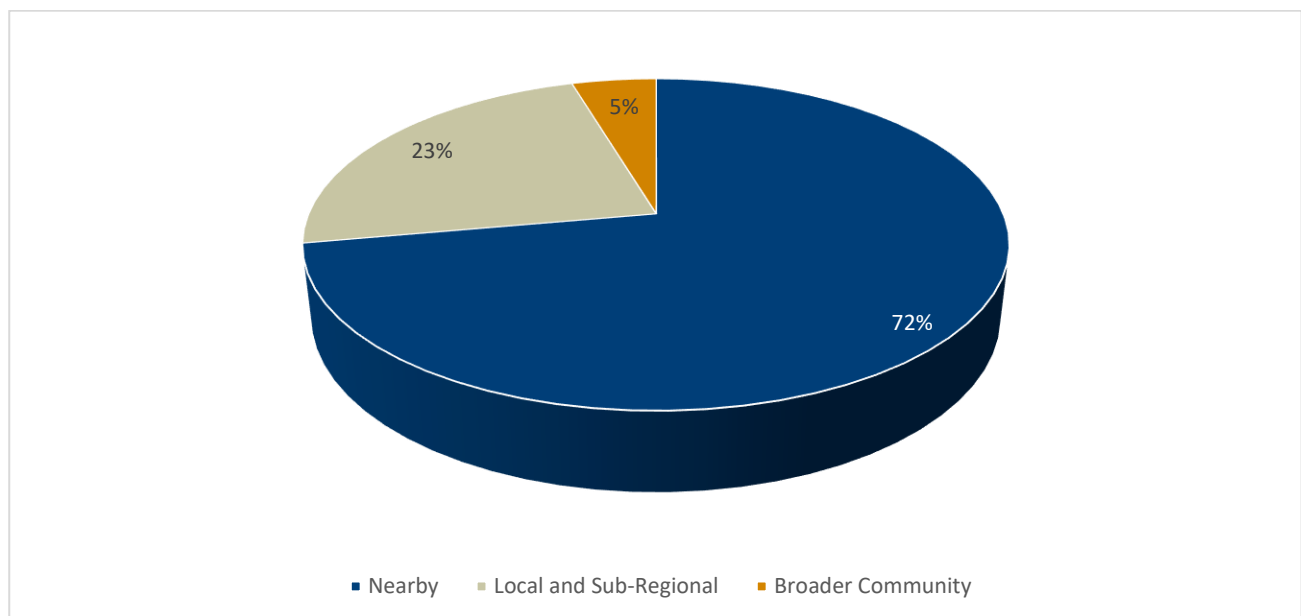
Group	Objections	Supports	Comments
Community	621 (92.4%)	14 (2.1%)	4 (0.6%)
Organisations/Interest Groups	15 (2.2%)	17 (2.5%)	1 (0.1%)
Total	636 (95%)	31 (5%)	5 (1%)

The submissions were analysed based on proximity to the Project Area to determine the level of interest in the Revised Project. The three categories include:

- nearby, being residences within approximately 5 km from the quarry and/or proximate to the haulage route including the suburbs of Martins Creek, Vacy, Hilldale, Paterson, Duns Creek, Tocal, Mindaribba, Woodville, Bolwarra Heights and Bolwarra (refer to **Graph 2.2**)
- local and sub-regional area, being between approximately 5 and 100 km
- broader community, being approximately 100 km or greater from the Project Area.

It is noted that some residences in the suburbs listed as nearby may be greater than 5km from the Project Area or haul route. The analysis by suburb is therefore conservative in its approach as further interrogation is not possible with the data available.

Of the community and organisation/interest group submissions received (including objections, supporting and comment), 485 (72%) were received from the nearby area, 156 (23%) from the local and sub-regional area and 31 (5%) from the broader community (refer to **Graph 2.2**).

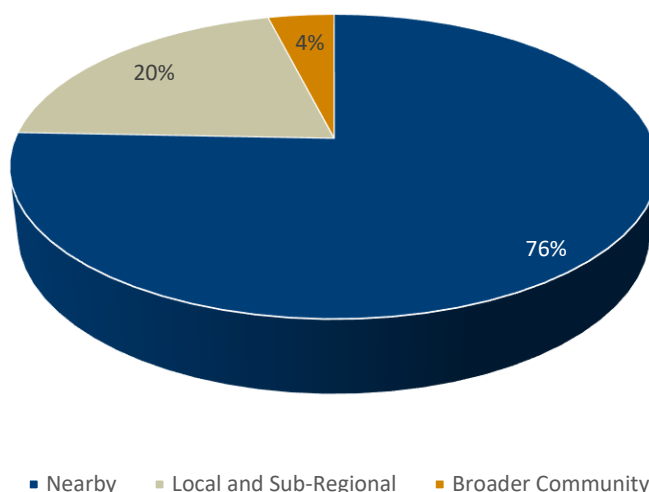


Graph 2.2 Percentage of Community and Interest Group Submission by Area

While there were significant similarities in a number of submissions, with some content using the same wording at times, no submissions were considered to be form letters due to minor differences. There were however 23 submissions that appear to be from unique submitter IDs which were duplicates. Of the 23 submissions, there were only 11 unique submissions. These submissions have been conservatively considered in the analysis as unique submissions and are identified in **Appendix 1**.

2.1.2.1 Objecting Submissions

As outlined above, a total of 636 submissions objected the Revised Project, including 621 community members and 15 organisations/interest groups. Based on the analysis, 481 (76%) of objections were received from the nearby area (within approximately 5 km or proximate to the haulage route), 130 (20%) from the local and sub-regional area (between approximately 5 km and 100 km) and 25 (4%) from the broader community (approximately 100 km) (refer to **Graph 2.3**).

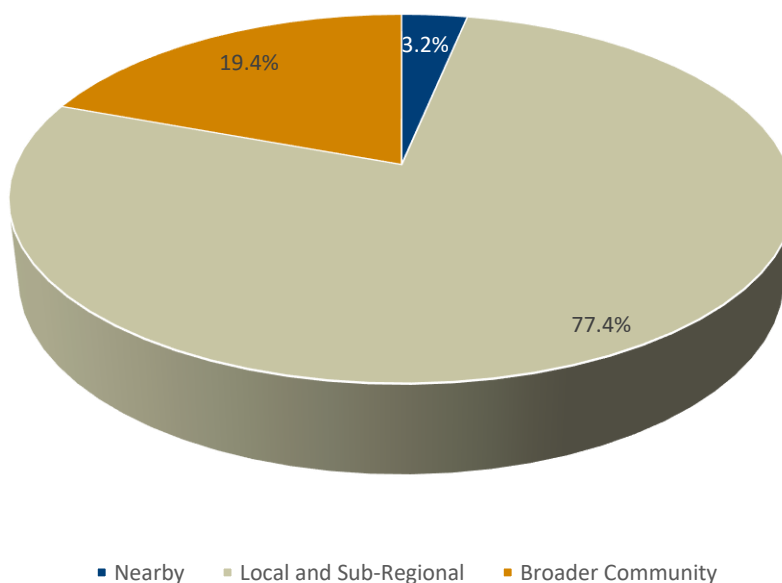


Graph 2.3 Percentage of Objecting Community and Organisation Group Submissions by Area

Of the 481 objections to the Revised Project from nearby areas, 474 (99%) were from community members and 7 (1%) were from organisations/interest groups.

2.1.2.2 Supporting Submissions

A total of 31 submissions were received that support the Revised Project, including 14 community members and 17 organisations interest groups. Based on the analysis, 1 (3.2%) supporting submission were received from the nearby area (within approximately 5 km and proximate to the haulage route), 24 (77.4%) from the local and sub-regional area (between approximately 5 and 100 km) and 6 (19.4%) from the broader community (approximately 100 km) (refer to **Graph 2.4**).



Graph 2.4 Percentage of Supporting Community and Organisation Submissions by Area

2.2 Categorisation of Issues

A content analysis was undertaken on all community submissions to understand the key issues raised by the community in relation to the Revised Project. Objections, supporting submissions or comment on the Revised Project were analysed separately, as the themes within the submissions were distinct.

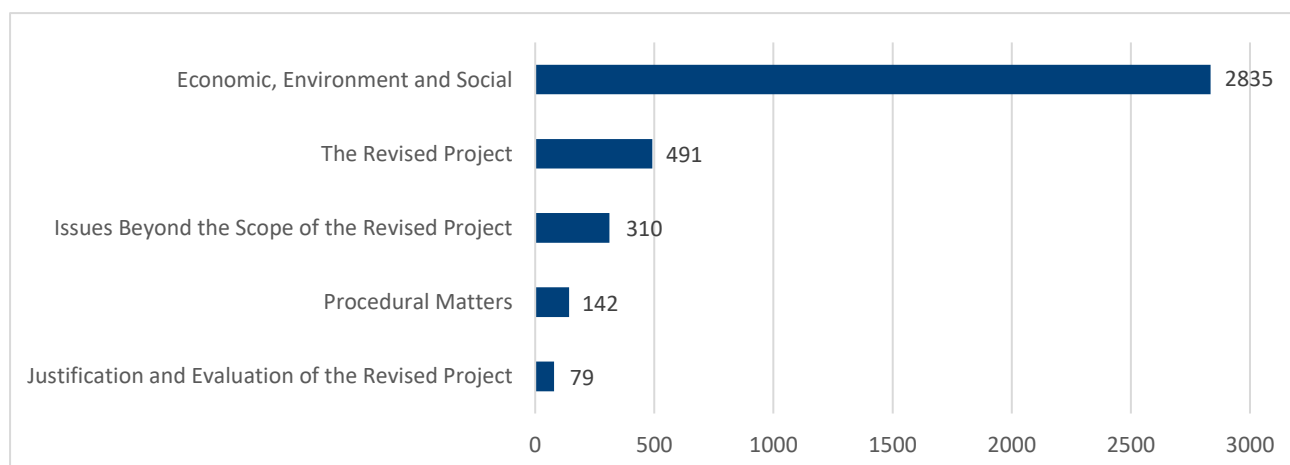
In accordance with the DPIE Guideline (2021), issues have been categorised into the following broad groups:

- the Revised Project (e.g. the site, the project area, the physical layout and design, key uses and activities, timing)
- economic, environmental and social impacts of the Revised Project (e.g. amenity, air, biodiversity, heritage)
- procedural matters (e.g. level or quality of engagement, compliance with the SEARs, identification of relevant statutory requirements)
- the justification and evaluation of the Revised Project as a whole (e.g. consistency of project with Government plans, policies or guidelines)
- issues beyond the scope of the project or not relevant to the Revised Project (e.g. broader policy issues).

These broad issues categories were then divided into themes and sub-themes where relevant in order to provide greater definition of the issues raised. Further details of the categorisation of issues are provided in the following sections.

2.2.1 Objecting Submissions

Economic, environmental and social impacts of the Revised Project were the most frequently raised category of issues in the 636 objecting submissions received (refer to **Graph 2.5**). Issues with the Revised Project were the second most frequently raised category of issues, followed by issues beyond the scope of the Revised Project, procedural matters and justification of the Revised Project. It should be noted that many submissions raised multiple issues categories and multiple themes and sub-themes within each issue category.



Graph 2.5 Categorisation of Objecting Submissions

Economic, Environmental and Social Issues

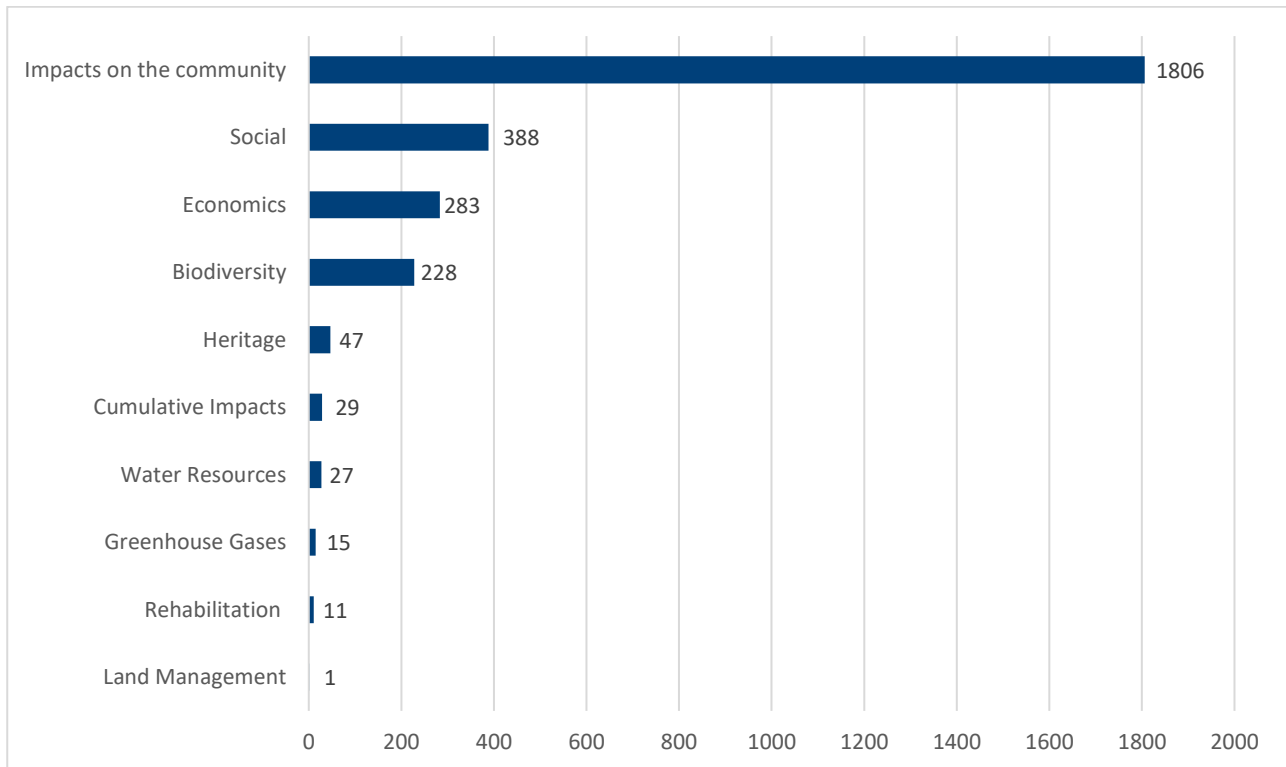
There were 9 key themes to the economic, environmental and social issues raised in the objecting submissions, including:

- impacts on the community, including traffic / transport, noise, air quality, blasting, public health and safety, visual
- social
- economic
- biodiversity
- impacts to heritage
- cumulative impacts
- impacts to water resources
- rehabilitation
- greenhouse gases
- rehabilitation.

The most frequently raised theme was impacts on the community (refer to **Graph 2.6**). The key concerns raised in relation to impacts on the community included the following sub-categories:

- traffic and transport (590 submissions)
- public health and safety (463 submissions)
- noise (350 submissions)
- air quality (278 submissions)
- blasting and vibration (102 submissions)
- visual (21 submissions).

Social impacts were the second most frequently raised theme (refer to **Graph 2.6**), with concerns centred around the loss of social amenity (379 submissions).



Graph 2.6 Economic, Environmental and Social Issue Themes

Responses to objections raised in relation to Economic, Environment and Social Issues are addressed in **Section 6.1**.

The Revised Project

The key theme raised in objecting submissions in relation to the Revised Project was associated with consideration of project design and alternatives. A total of 491 objecting submissions from community and organisations/interest groups raised issues relating to the project design of the Revised Project.

Responses to objections raised in relation to the Revised Project are addressed in **Section 6.2**.

Issues Beyond the Scope of the Project

This category includes broader policy issues or issues that are not directly related to the merits of the Revised Project. The main theme raised under this category was in relation to the court proceedings that were being undertaken at the time of the Original Project application. The key sub-themes were:

- court proceedings relating to Martins Creek Quarry that were being undertaken at the time of the Original Project application and the previous operations at the quarry (172)
- Daracon's reputation in the community and social licence to operate (129 submissions)
- the current operations and management, including compliance with the existing development consent (7 submissions)
- complaints processes (2).

Responses to objections raised in relation to Issues Beyond the Scope of the Project are addressed in **Section 6.3**.

Procedural Matters

The key issue raised in relation to procedural matters was the adequacy of assessments, including the baseline used for assessments (46 submissions). Other issues raised included:

- unsatisfactory community consultation (40 submissions)
- the NSW Government planning process or application of legislation (32 submissions)
- the lack of contributions paid and/or the need for Daracon to pay contributions, primarily for road maintenance (24 submissions).

Responses to objections raised in relation to Procedural Matters are addressed in **Section 6.4**.

Justification and Evaluation of the Project

There were 54 submissions that raised concerns about the justification of the Revised Project, while 25 submissions were received that stated a general objection to the Revised Project however stated no specific issues or reasons for the objection. These submissions were classified as objections on the justification and evaluation of the Revised Project.

Responses to objections raised in relation to the justification and evaluation of the Revised Project are addressed in **Section 6.5**.

3.0 Actions Taken Since the Exhibition

Since the exhibition of the Revised Project, a number of actions have been taken based on the submissions received. These include:

- project changes to address issues raised in submissions (refer to **Section 3.1**)
- further assessment of project changes and key aspects raised in submissions (refer to **Section 3.2**)
- further engagement with agencies and key stakeholders (refer to **Section 3.3**).

Details on the additional actions undertaken since the exhibition of the Revised Preferred Project are provided in this section.

3.1 Project Changes

Daracon has made substantial effort throughout the ADA process to engage with the community and regulatory authorities in relation to the impacts associated with the proposed expansion of the quarry. The Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Revised Project.

3.1.1 Refinement to Access Road Construction Timing

As part of the Revised Project, Daracon proposed to construct and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access.

Daracon is committed to undertaking key proposed activities associated with the Revised Project in a timely manner however, it is recognised that there are some components that require additional design and approvals from DSC, ARTC or TfNSW. Accordingly, Daracon has been conservative in their timings to allow for approval processes.

As outlined in the ADA Report, the construction of the access road, including the new intersection and rail bridge will require the longest duration and be subject to additional design and approvals processes. Subject to ARTC and DSC approvals for the rail bridge and intersection construction, respectively, it was expected that the new access road will be constructed and operational by the end of Year 4. In response to community comments, Daracon commits to constructing the new quarry access and railway bridge within 2 years of project approval, subject to obtaining relevant secondary approvals from ARTC and DSC within 12 months of project approval.

Daracon have been in consultation with DSC and ARTC and will seek to gain relevant approvals as soon as possible following development approval. Notwithstanding, there will be a period where access continues along Station Street and Grace Avenue. Intersection upgrades and the Gostwyck Bridge approach upgrade will also be subject to DSC approval, under the Roads Act.

It is noted that ARTC have provided in principle agreement for the proposed new access road to traverse the North Coast Railway Corridor, subject to approval of the detailed design and construct plans for the proposed bridge over the railway corridor.

3.1.2 Refinement to Noise Mitigation Measures

As outlined in Section 6.4 of the ADA Report, the design and planning of the Revised Project noise modelling was completed on an iterative basis to enable the minimisation of noise impacts as far as practicable. Extensive work has been undertaken to optimise quarry plans, rail and road haulage configurations and assessment of mitigation and management measures. Key features of the Revised Project that are related to the management and mitigation of potential noise impacts from the operation include:

- rail spur extension into the northern end of the East Pit, approximately 10 m below the current ground level and relocation of train loading facilities
- construction of a dedicated access road onto Dungog Road removing trucks off Station Street (except for emergency purposes), following ARTC approval for detailed design plans and construction of a new rail bridge. The access road will be commissioned as early as possible, and by the end of Year 4, from project approval
- significant changes to the proposed hours of operation for the Revised Project compared to the Original Project (refer to Section 2.6 of the ADA Report) and reductions in maximum truck movements (refer to Section 2.8 of the ADA Report).

In addition to the design controls above, Daracon are committed to implementing a range of reasonable and feasible physical and operational noise mitigation measures. Physical noise control measures include noise barriers in key locations, noise attenuation of processing equipment, and replacement of parts of the processing plant with new attenuated equipment (refer to Figure 6.3 of the ADA Report). Operational noise controls for the life of the Revised Project include commitments to no in-pit mobile crushing in the West Pit, use of three new smaller trucks operating in the West Pit, and continuous noise monitoring with predictive weather forecasting and real-time monitoring alerts to allow modification of operations where appropriate (refer to Section 6.4.6 of the ADA Report).

The EPA, in its submission on the Revised Project, requested that Daracon assess and advise if any other operational management measures can be implemented during the transitional time until year 4 when the new access road from Dungog Road is built (refer to **Section 4.1.1**). The ADA Report proposes rail loading during the 4 transitional years will be limited to day-time only. The noise predictions presented in the Noise Impact Assessment (NIA) indicate rail loading with the existing facility could result in 12 receivers experiencing noise levels greater than 5 dB above the respective nominated project noise trigger levels (PNTL) (Umwelt, 2021b).

In order to address the EPA's submission, Daracon have further reviewed the Revised Project to consider any additional reasonable and feasible noise management options where significant noise impacts (greater than 5dB) were predicted.

There are four aspects that have been considered in the iterative design of the Revised Project in relation to the loading of rail wagons on the quarry spur line. These are:

1. the proximity of the rail loading facility to the receivers in Station Street
2. the noise level generated by the loading facility as an existing industrial source that is old and includes no noise mitigation measures
3. the location of the existing rail wagon loading facility requires the locomotives to use a section of the rail siding opposite dwellings in Station Street during the wagon loading
4. the transit of trains along the rail siding.

The iterative design of the Revised Project previously considered options such as:

- attenuate the existing rail loading facility, including adding a noise barrier along the rail siding opposite the residence in Station Street so locomotives could use the line during wagon loading
- attenuate and relocate the existing rail loading facility and conveyor system further north along the existing rail spur
- ceasing rail loading altogether.

The noise mitigation strategy that has been further investigated is the attenuation of the noise from the wagon loading activities (wagon loading and filling the wagon loader bin) and the installation of a barrier between the locomotives on the rail siding and the receivers along the northern end of Station Street.

The investigations determined that with the implementation of additional measures, including the construction of a barrier along the northern end of Station Street, the potential noise impacts associated with rail loading activities could be further reduced. Re-assessment of the acoustic and visual impacts of the noise barrier has been completed and is discussed further in **Section 3.2.1**.

Updated noise modelling has been prepared by Umwelt (refer to **Appendix 3**) to confirm the predicted acoustic performance with the refined noise mitigation measures in place. The results of the modelling are discussed in the following section.

3.2 Further Assessment

As a result of submissions received on the Revised Preferred Project, additional assessment has been completed in relation to:

- the noise barrier (as discussed in **Section 3.1**)
- an updated Social Impact Assessment (SIA) risk table to include approved operations.

Further details are provided in **Section 3.2.1** and **3.2.2** below.

3.2.1 Noise Barrier

If agreements with the relevant significantly affected Station Street residents can't be reached prior to commencement of work under a new approval, Daracon will construct a barrier along the northern end of Station Street, within the Project Area in order to further mitigate potential noise impacts associated with rail loading activities.

The noise barrier would be approximately 180 m in length and 4 m in height, located between the locomotives on the rail siding and the receivers along the northern end of Station Street. The location of the noise barrier is shown on **Figure 3.1**. It is noted that an acoustic wall was proposed as part of the Original Project which was removed from the Revised Project. The proposed noise barrier as part of the Revised Project would be of a smaller scale (shorter and lower in height) than the acoustic wall previously proposed as part of the Original Project.

The noise barrier would be an earthen bund constructed approximately 1.2 to 1.5 m in height with a timber lapped and capped fence of approximately 2.5 to 2.8 m to achieve the required height of approximately 4 m. The earthen bund would be vegetated to provide further visual relief. The noise barrier would also provide shielding of operations from nearby residences.

Daracon will continue to consult with Station Street residences in relation to potential impacts and the proposed noise barrier, including the proposed bund construction.

The area subject to the noise barrier has been previously disturbed and does not contain any mapped native vegetation.

3.2.1.1 Noise Modelling

Additional noise modelling has been completed to confirm the impact of the noise barrier for the Revised Project on operational noise predictions (refer to **Appendix 3**).

Modelling considered a number of scenarios, including:

- **Scenario 1:** Full operations without Rail Loading but with extraction in the West Pit, full operation of the Processing Plant and the filling and dispatch of road trucks
- **Scenario 2:** Scenario 1 plus Rail Loading operating in the current format
- **Scenario 3:** Scenario 2 and additional noise control around the rail loader (-6dB) and no barrier, 3 metre or 4 metre noise barrier between the locomotives on the rail siding shunting the wagons during loading and the receiver along the northern end of Station Street
- **Scenario 4:** Scenario 3 and shut down extraction in the West Pit
- **Scenario 5:** Scenario 4 and shutdown primary and secondary processing and ancillary activities
- **Scenario 6:** Scenario 5 but shutdown tertiary processing and the filling and dispatch of road trucks.

As outlined in **Section 3.2.1**, the existing rail loading could result in 12 receivers experiencing noise levels greater than 5 dB above the respective PNTLs during daytime operations.

The noise mitigation strategy considered in **Appendix 3** investigated the attenuation of the noise from the locomotives working on the rail siding by installing a barrier between the locomotives on the rail siding and the receivers along the northern end of Station Street. The results in **Appendix 3** indicate a 4 metre barrier (measured from the railhead), along with other mitigations such as modified operations in the West Pit during rail loading (depending on meteorological conditions), could eliminate noise levels greater than 5 dB above the respective PNTL for all residences.

3.2.1.2 Visual Assessment

As discussed in Section 6.17 of the ADA Report, the Original Project included a noise attenuation wall along the rail corridor on the eastern side of Station Street. The concept design for the acoustic wall (included in Appendix I of the 2016 EIS) show that the proposed wall was to be located along the length of Station Street (about 480 m) with a maximum height of 5 m high. As such, the Landscape and Visual Impact Assessment (LVIA) for the Original Project, completed by Moir Landscape Architects (Moir), included an assessment of a longer and higher acoustic wall. The acoustic wall was however taken out of the proposal during the redesign of the Revised Project as a response to community concern from Station Street residences in relation to the visual impact of the acoustic wall. The proposed noise barrier will be subject to ongoing consultation with Station Street residences.

The visual assessment found that the proposed acoustic wall would be visible along the top of the embankment on the eastern side of Station Street (Viewpoint MC01). The visual effect was assessed as moderate due to the proximity to the acoustic wall, resulting in a visual impact of high from this location given the residential land use. Landscaping to the front of the proposed wall was recommended in the LVIA to mitigate the visual impact overtime. Photomontages from Viewpoint MC01 included in the LVIA illustrate the likely visual impacts of the proposed acoustic wall.

The assessment further found that the acoustic wall would likely be visible from Cory Street, resulting in a low visual effect. The visual impact has been assessed as moderate from this location. However, existing vegetation within surrounding residential properties and road verges would provide screening of views towards the quarry.

The LVIA recommended that screen planting (in consultation with affected landowners), particularly along Station Street should be used to soften the visual impact of the acoustic wall.

As discussed in **Section 3.2.1**, the proposed noise barrier as part of the Revised Project would be of a smaller scale (shorter and lower in height) and located along a 180 m section of the northern end of Station Street. The noise barrier now proposed would include an earthen bund with a timber fence. On this basis, the now proposed configuration of the noise barrier would have a reduced visual impact on the Station Street residences in comparison to the Original Project.

As highlighted in the ADA Report, the quarry has been a landscape element in the locality for some 100 years and is considered part of the existing landscape character. The proposed noise barrier would be visible to the 10 residences in Station Street with some visibility from Cory Street also. With the implementation of mitigation measures (such as the use of natural materials for the barrier, as well as potential selected screen planting in consultation with the affected landowners), the proposed noise barrier would not have a significant visual impact and will have reduced visual impact compared to that initially proposed for the Original Project.

3.2.2 Additional SIA Risk Rankings

As outlined in the ADA Report, the aim of the SIA is to assess the proposed changes to the existing social environment (of which the existing quarry is a part), as a result of the Revised Project proceeding. The SIA has utilised data from a number of sources to develop a layered picture of the potential social impacts arising from the Revised Project. The SIA assesses the social impacts associated with the Revised Project, providing a detailed ranking of impacts according to a number of key criteria, as defined in the SIA Guideline.

The SIA (Umwelt, 2021c) has been prepared in accordance with the requirements of DPIE's *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (DPE, 2017) (the SIA Guideline). In order to prioritise the identified social impacts, a risk-based framework has been adopted in accordance with the SIA Guideline. Stakeholder views and perceptions regarding the significance of risk/impact is considered an independent and no less valid component of risk. It is worth noting that stakeholder perceptions vary between individuals and groups with no single perception more important than another. However, for the purpose of assessment the most common, or what is judged to be the general perception/sentiment of a stakeholder group has been used as a measure of perceived stakeholder risk or impact. These views have been presented in risk tables as stakeholder perceived significance.

The integration of the outcomes of technical ranking (severity) with stakeholder ranking of impacts, thus affords a true integration of expert and local knowledge in SIA and enables both types of risk to be addressed in the development of impact mitigation, amelioration and enhancement strategies. Such an approach is acknowledged in the relevant SIA Guideline in relation to estimating material effects.

Prioritising impacts in this integrated manner ensures that appropriate assessment and mitigation strategies can be developed that not only address impacts that may require more technical management but also those impacts that are considered by stakeholders as of high risk/importance/concern. Stakeholder concerns regarding an impact are just as important to manage as they have the potential to result in elevated levels of community concerns, complaints and grievances if not addressed appropriately.

The SIA provides an overall summary of the social impacts in relation to the Revised Project (refer to Appendix O of the ADA Report). It is important to acknowledge that the ratings of both likelihood and consequence or magnitude – and therefore overall significance – typically have both subjective and objective components, as this depends on a combination of people’s individual experiences and/or perceptions as well as the outcomes of technical evaluations. While a review of all rankings has been undertaken considering community views and additional proposed mitigation post the receipt of community feedback, and consequently some risk significance levels have been adjusted slightly, it is important to highlight that the risk rankings as presented within the SIA do not all reflect the views of community stakeholders.

A number of community submissions, including the peer reviews (refer to **Appendix 4**), provided criticisms on the social baseline used and associated baseline impacts and the social risk assessment framework adopted within the SIA.

As discussed in **Appendix 4** and in **Section 5.1** of this report, for the purposes of assessing the ADA, the SIA for the ADA Report compared the Revised Project against the Original Project. The ADA Report and assessments do not assume that the baseline for the Revised Project is the Original Project.

While it is recognised that the SIA Guideline requires the evaluation of significance of each potential negative social impact both with and without mitigation in place, it is explained within Section 7 of the SIA that as there had been numerous iterative changes in project parameters and design throughout the assessment and accompanying consultation process as a mechanism to address identified impacts, including social impacts, the evaluation has taken into consideration identified mitigation measures, including project refinements. The Revised Project could not operate without many of the proposed mitigation measures in a manner that met relevant standards and criteria.

In order to respond to concerns raised in submissions, an updated risk rating table has been completed that assesses the Approved Operations, Original Project and Revised Project (refer to **Appendix 4**). It is noted that inclusion of the Original Project and the Approved Operations has not changed the outcomes of the risk assessment process completed for the Revised Project.

3.3 Ongoing Stakeholder Engagement

Following submission of the ADA Report, Daracon has undertaken some further consultation with government agencies as outlined in **Table 3.1**.

Table 3.1 Agency Consultation

Agency	Date	Details
MCC	13 April 2021	<ul style="list-style-type: none"> Meeting to discuss the status of the Revised Project and VPA
	6 May 2021	<ul style="list-style-type: none"> Correspondence sent to MCC confirming the proposed VPA arrangements
	22 October 2021	<ul style="list-style-type: none"> Correspondence sent to MCC confirming public exhibition and requesting further discussions on a VPA
	5 November 2021	<ul style="list-style-type: none"> Correspondence sent to MCC following up on request for further VPA discussions
DSC	28 May 2021	<ul style="list-style-type: none"> Correspondence providing proposed VPA arrangements
	31 May 2021	<ul style="list-style-type: none"> Meeting to discuss the status of the Revised Project and VPA
	12 November 2021	<ul style="list-style-type: none"> Correspondence providing a draft VPA document for consideration following the meeting held on 31 May 2021
	Various	<ul style="list-style-type: none"> Ongoing communications in relation to the operation of the approved quarry including proposed haulage
TfNSW	27 September 2021	<ul style="list-style-type: none"> Meeting to discuss TfNSW submission and seek further clarifications
	1 October 2021	<ul style="list-style-type: none"> Correspondence sent to TfNSW outlining outcomes of the meeting and providing additional information requested
	11 October 2021	<ul style="list-style-type: none"> Correspondence sent to TfNSW providing updated technical note for SIDRA modelling for Gostwyck Bridge
	12 November 2021	<ul style="list-style-type: none"> Provision of SIDRA files to TfNSW, as per request
	17 November 2021	<ul style="list-style-type: none"> Correspondence from TfNSW confirming receipt of SIDRA files and noting that there were no outstanding items required at that point in time
EPA	28 October 2021	<ul style="list-style-type: none"> Meeting with EPA to provide an update on the Revised Project and discuss EPA submission to inform response

As outlined in the ADA Report, Daracon distributed Community Information Sheet 3 in May 2021, around the time the ADA Report was submitted for public exhibition. Community Information Sheet 3 provided a summary of assessment outcomes from the ADA process.

The Community Information Sheets were distributed to approximately 3700 households nearby to the quarry and along the haulage route including Martins Creek, Vacy, Paterson, Tocal, Bolwarra, Bolwarra Heights, Duns Creek, Mindaribba and Woodville.

Copies of Community Information Sheet 3 were also left in prominent locations, i.e., Paterson Post Office, DSC building, Vacy General Store, Paterson Country Café and Daracon reception. An electronic version was also emailed to local community representative groups for their information and distribution to members, e.g., MCQAG, Paterson Progress Association.

Since the ADA Report was placed on public exhibition, Daracon have proactively communicated with nearby residents in relation to upcoming activities as part of Approved Operations. This correspondence, together with a number of enquiries or complaints from the community, are outlined in **Table 3.2**.

Table 3.2 Community Consultation and Feedback during Recent Operations

Type	Date	Details
Letter	14 May 2021	Letter provided to nearby residences on crushing and blast activities
Letter	26 May 2021	Letter provided to nearby residences on revision to timing of blast advised on 14 May 2021
Letter	5 August 2021	Letter provided to residences on Station Street, Cory Street, Grace Avenue and Vogeles Road in relation to train movements on 9 August 2021
Letter	30 August 2021	Letter provide to residences on Station Street, Cory Street, Grace Avenue and Vogeles Road in relation to train movements on 1-3, 6-7 September 2021
Complaint	8 September 2021	A complaint about quality of water being discharged from the quarry was received via the EPA. EPA contacted Daracon who investigated and contacted downstream property (on Dungog Road). Further investigations/meetings/testing was completed. The resident advised EPA and Daracon that they were satisfied with the response. During a meeting with EPA 28 October 2021, EPA also confirmed they were satisfied with the action taken by Daracon.
Letter	27 September 2021	Letter to residences surrounding the quarry and along the haul route to Paterson confirming road haulage being undertaken in accordance with Approved Operations from 29 September to mid-October
Enquiry	29 September 2021	Email enquiry received from Vacy resident about the speed zones within the Code of Conduct for trucks using Horns Crossing Road. A response was sent on 29 September attaching a copy of the Code of Conduct and clarifying the speed zones.
Enquiry	29 September 2021	Phone enquiry received from Vacy resident about Daracon trucks using Horns Crossing Road. No specific information was provided about bad driver behaviour, just that they were on the road. A response was provided about the material being transported from the quarry and the transport routes.
Feedback	30 September 2021	Positive feedback was received by Daracon from a Tocal resident about the good behaviour of Daracon truck drivers.
Enquiry	1 October 2021	Email enquiry received from MCQAG Secretary following receipt of the notification. The enquiry was questioning what material was being transported and to whom. Email response was provided on 7 October 2021.
Complaint	5 October 2021	A complaint was received by phone from a Paterson resident about truck haulage, in particular trucks travelling in convoy. The resident was not prepared to provide Daracon any specific details to enable investigation. Daracon ensured truck drivers hauling from the quarry were signed onto the Code of Conduct and spot inspections by Daracon supervisors revealed no issues.



Image Source: Google Earth (2018)
Data Source: Daracon (2020)

0 50 100 200m
1:5 000

Legend

- Project Area
- - - Proposed Noise Barrier

FIGURE 3.1

Location of Proposed Noise Barrier

4.0 Response to Agency Submissions

Government agencies make submissions relating to their areas of responsibility and typically relate to technical matters as well as matters the agency considers require consideration by the consent authority or to be addressed by conditions should development consent be granted.

The following section responds to the specific matters raised by each agency submission. The issues raised in the agency submissions are identified in the following sections in text boxes, with a response provided following each text box.

4.1 Environment Protection Authority

4.1.1 Noise

Application of VLAMP and residential noise impacts.

Information required:

- **Assess and advise if any other operational management measures can be implemented during the transitional time until year 4 when the new access road from Dungog Road is built. For example, can the operation be scaled back from what is proposed until the new access road and rail loading facility are built.**

Evening and night-time activities noise impacts.

Information required:

- **Further discussion to address the residual noise impacts should be provided. The EPA will not set noise limits that are greater than 5 dBA above PNTLs, so negotiation with affected receivers is recommended.**

As outlined in the ADA Report, Daracon propose a rail spur extension to optimise rail transport volumes, reduce disturbance footprint and minimise noise impacts. From project approval, excavation work and quarrying will commence in the East Pit in preparation for construction of the rail spur extension. It is important to note that if operations are scaled back in the first phase of quarrying, the time it takes to move material to provide for the extension of the rail siding, will be delayed.

In response to the EPA submission, Daracon have further considered reasonable and feasible mitigation measure that could be implemented during the period prior to the extension of the rail siding being completed and the new access road being constructed.

As discussed in **Sections 3.1.1** and **3.2.1**, the installation of a noise barrier, along with other operational measures, could further mitigate noise impacts during the first 4 years of the Revised Project, should agreements with significantly affected landholders not be secured.

Daracon will consult further with affected residences in relation to potential impacts. As discussed in the ADA Report, Daracon will implement reasonable and feasible receiver-based noise mitigation measures for relevant residences in order to meet the requirements of the VLAMP (refer to Section 6.4.2 of the ADA Report) and any relevant development consent conditions, based on monitoring results and upon written request of the landowners.

4.1.2 Air Quality

Further mitigation measures and controls are required to reduce predicted large increments.

Information required:

- **The proposed mitigation and management measures are benchmarked against best practice.**
- **The AQIA takes incorporates all reasonable and feasible best practice mitigation and management measures. Justification must be provided for any identified best practice mitigation measures that are not proposed for implementation.**
- **Consider project alternatives and/or further mitigation measures to manage any predicted significant incremental or cumulative impacts resulting from any revisions to the AQIA.**
- **Any revised predicts significant incremental/cumulative impacts the proponent must consider project alternatives and/or further mitigation measures to manage those predicted impacts.**

A detailed Air Quality Impact Assessment (AQIA) (Jacobs, 2020) was prepared for the Revised Project by Jacobs (refer to Appendix E of the ADA Report). The AQIA considers and takes into account a number of management and mitigation measures for the Revised Project.

It is relevant to consider the historical air quality performance of the previous operations at the quarry as well as the proposed changes to operations when determining an appropriate level of mitigation and management.

As outlined in the further response provided by Jacobs (refer to **Appendix 5**), monitoring of particulate matter (as PM₁₀) has been carried out at the nearest private residences to the quarry, on Station Street, since at least 2013. This monitor is located within 200 m of the quarry operations (as shown on Figure 4 of the AQIA). The monitor is suitably located to capture the near maximum air quality impacts to off-site and residential locations from previous quarry operations (noting that this production was beyond the terms of the Approved Operations outlined in **Section 1.2.1**).

Figure 6 from the AQIA presented the measured PM₁₀ concentrations from the Station Street monitor. This data did not highlight any occasions when activities at the existing quarry caused adverse off-site air quality impacts with respect to PM₁₀ based on measured concentrations which did not exceed the relevant EPA criteria.

In summary, the data (from when the quarry was operating at its previous production) showed that:

- Maximum 24-hour average PM₁₀ concentrations (including contributions from previous operations) were 34 µg/m³. This is well below the EPA's criterion of 50 µg/m³ and below the investigation level that is referred to in EPL 1378 of 40 µg/m³.

- Annual average PM₁₀ concentrations (including contributions from previous operations) were 13 µg/m³. This is well below the EPA's criterion of 25 µg/m³.

The change in production associated with the Revised Project may influence emissions from various site activities including haulage, crushing and processing. Daracon has reviewed and identified a range of site mitigation and management measures to be commensurate with the historical air quality performance of the quarry and the proposed change in activity relative to previous operations. These measures are outlined in **Table 4.1**.

Table 4.1 Air Quality Management and Mitigation Measures

Activity	Management/Mitigation
Drilling	<ul style="list-style-type: none"> • Water sprays • Minimising activities when excessive visible dust is generated
Hauling on unsealed roads	<ul style="list-style-type: none"> • Use of water carts for haul road dust suppression • Restricting vehicular speed within the quarry and processing areas • Clearly marked internal haul roads • Minimised haul distances • Road maintenance
Processing plant	<ul style="list-style-type: none"> • Enclosure of the primary, secondary and tertiary crushers and screening plant in the processing area
Fixed crushing plant	<ul style="list-style-type: none"> • Automated water sprays
Under-belt stockpiles	<ul style="list-style-type: none"> • Automated water sprays
Mobile crushing	<ul style="list-style-type: none"> • No mobile crushing in west pit
Transport of product off-site	<ul style="list-style-type: none"> • Covered loads. • Wheel wash before leaving site.

As outlined in **Appendix 5**, there are no known publications that define the best practice management and mitigation measures which are specific to the quarry industry in NSW (Jacobs, 2021). A review of literature related to a range of extractive industries including quarrying has therefore been carried out. Two relevant references have been identified:

- Katestone, on behalf of the EPA, conducted an extensive review of best practice measures for minimising particulate matter emissions from coal mining, as outlined in “NSW Coal Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining” (Katestone, 2011). The best practice measures from Katestone (2011) would be beyond those typically expected for the Revised Project given that they consider operations that were producing in the order of 10 Mtpa or more of saleable product.
- Lynwood Quarry is a hard rock quarry currently operated by Holcim (Australia) Pty Ltd (Holcim) to the west of Marulan in the Southern Tablelands Region of New South Wales (NSW). It has approval to produce up to 5 Mtpa of saleable quarry product, much larger than that proposed for the Revised Project (which is 1.1. Mtpa).

Jacobs have reviewed the mitigation and management measures proposed as part of the Revised Project and compared them to those outlined by Katestone (2011) and Holcim (2020). The comparison is provided in **Table 4.2**.

Table 4.2 Comparison of Proposed particulate matter emission management measures

Activity	Measures identified from Katestone (2011) and Holcim (2020)	Proposed Emission management measures	Assumed emission control (%)	Applicability of Measures identified from Katestone (2011) and Holcim (2020)
Drilling	Katestone (2011): Water injection Fabric filter Cyclone Holcim (2020): Water sprays or dry dust collection	Water sprays Minimising activities when excessive visible dust is generated	70	Katestone (2011): Water sprays are consistent with best practice at NSW coal mines. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Blasting	Katestone (2011): Delay shot to avoid unfavourable weather conditions Minimising the area blasted Holcim (2020): Adequate stemming in blast holes Review conditions prior to blasting	Pre-blast checks including review of meteorological conditions	0	Katestone (2011): Pre-blast checks and review are consistent with best practice on NSW coal mines. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Hauling on unsealed roads	Katestone (2011): Watering or suppressants Speed limits to 40 km/h Well-defined haul routes Minimising haul distance Grading Use of larger trucks Holcim (2020): Water haul roads Keeping haul roads lengths to a minimum	Watering of unsealed haul routes Restricting vehicle speeds to 20 km/h Clearly marked haul routes Minimised haul distances Road maintenance	75	Katestone (2011): The measures proposed are consistent with best practice on NSW coal mines. 75% control is a conservative estimate based on measurement results from NSW coal mines where 85% control or more is regularly achieved. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Primary and secondary crushing	Katestone (2011): Closest comparable activity is handling coal at the ROM pad/CHPP. Control measures for this process are not specifically identified. Holcim (2020): Dust extraction system Dust suppression sprays Enclosure of majority of plant	Enclosure Water sprays, as relevant	90	Katestone (2011): Not applicable Holcim (2020): Revised Project includes dust suppression sprays and enclosure of key plant as per approved practices at other, larger quarry.

Activity	Measures identified from Katestone (2011) and Holcim (2020)	Proposed Emission management measures	Assumed emission control (%)	Applicability of Measures identified from Katestone (2011) and Holcim (2020)
Screening	<p>Katestone (2011): Closest comparable activity is handling coal at the ROM pad/CHPP. Control measures for this process are not specifically identified.</p> <p>Holcim (2020): Dust extraction system Dust suppression sprays Enclosure of majority of plant</p>	Enclosure	70	<p>Katestone (2011): Not applicable</p> <p>Holcim (2020): Revised Project includes dust suppression sprays and enclosure of key plant as per approved practices at other, larger quarry.</p>
Loading product stockpiles	<p>Katestone (2011): Bypass coal stockpiles Variable height stack Boom tip water sprays Telescopic chute with water sprays</p> <p>Holcim (2020): Water sprays on stockpiles</p>	Water sprays, as relevant	70	<p>Katestone (2011): Water sprays are consistent with best practice on NSW coal mines. Other measures are not applicable to quarrying.</p> <p>Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.</p>
Wind erosion from product stockpiles	<p>Katestone (2011): Bypass coal stockpiles Water sprays, Chemical wetting agents, Surface crusting agent Carry over wetting from load in Silo with bag house Cover storage pile with a tarp during high winds Vegetative wind breaks Reduced pile height, pile shaping Wind screens 3-sided enclosure</p> <p>Holcim (2020): Water sprays on stockpiles</p>	Water sprays, as relevant	50	<p>Katestone (2011): Water sprays are consistent with best practice on NSW coal mines.</p> <p>Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.</p>

The comparison in **Table 4.2** shows that the proposed measures are consistent with best practice dust mitigation measures for NSW coal mines as well as those adopted at a large NSW quarry with a modern approval.

Haulage of rock from the quarry pit to the processing plant has been identified by Jacobs as the largest potential emission source from the operation (refer to Table 13 from the AQIA). Katestone (2011) also identifies wheel generated dust as the major source at NSW coal mines. The proposed measures for haulage (refer to **Table 4.2**) are consistent with best practice on NSW coal mines. It is noted that haul roads at the quarry are constructed with premium grade hard rock quarry product and as such there is inherently less dust generated from the quarry material haul road compared to coal mine haul roads. The coal mines generally using construction material sourced from the mine site, which are predominantly sedimentary materials (not hard rock), and are of comparatively lower quality for road construction purposes. In addition, for all key activities at the quarry, there is at least one mitigation or management measure that is consistent with best practices on NSW coal mines as well as those adopted and approved at a much larger NSW hard rock quarry.

Items 5 and 6 from the EPA Advice is further addressed below in the response to item 7.

The methodology adopted for assessing cumulative impacts has not been conducted in accordance with the Approved Methods for the Assessment and Modelling of Air Pollution in NSW.

Information required:

- **Provide a detailed cumulative impact assessment as per the Approved Methods.**

As discussed in **Appendix 5**, the increment of the Revised Project is consistent with the information in the *“Approved Methods for the Modelling and Assessment of Air Pollutants in NSW”* (Approved Methods) (EPA, 2016) based on:

- Section 7.1.2 of the Approved Methods which refers to an incremental impact
- Section 11.2.3 of the Approved Methods which provides an example of a Level 1 assessment and notes that “24-hour average and annual increments of PM₁₀ have been predicted at each sensitive receptor”
- monitoring that was occurring when the quarry was operating.

Consideration of the incremental impact of a project is important if the project represents a modification of an existing, or previous contributor, to the local air quality. Assessing the incremental impact avoids the potential for double-counting. Adding maximum background concentrations (which include contributions from the source being modelled) to maximum model results from the same source (as modified) is not appropriate because this would result in the double-counting of quarry contributions to air quality.

The AQIA modelled previous operations from 2015 (estimated to be approximately 900,000 tpa) which was removed from the assumed background levels. For the purposed of modelling potential impacts, the AQIA essentially assumes that the quarry isn’t operating therefore providing a conservative approach to the assessment.

Table 4.2 reproduces the PM₁₀ model results from the AQIA with the information more closely aligned to the presentation in the Approved Methods. Specifically, the 24-hour average and annual increments of PM₁₀, relative to previous operations, have been added to the monitored levels during previous operations to determine the maximum impact at each sensitive receptor. In some cases, the Revised Project increment decreases relative to the “Previous Operations” modelled. This decrease is primarily due to the reduced mobile crushing arrangements as well as the progression of the active quarry pit further away from the Station Street properties. This approach enables a relative assessment of impacts to historically measured levels.

The modelling shows that the maximum impacts at each receptor are unlikely to exceed the 24-hour or annual average impact assessment criteria. Therefore, no further assessment of specific mitigation measures at individual properties is required.

Potential decreases in concentrations at nearby properties in earlier years are due to the additional controls proposed for implementation as well as quarry operations that would move progressively to the west. Potential increases in concentrations at nearby properties in later years are due to changes in location of extraction and the extraction activities in the East Pit, with the fixed processing plant decommissioned and replaced with mobile plant during this final phase.

Table 4.3 Modelled PM₁₀ concentrations at the nearest private sensitive receptors

Property ID	Assumed background level	Project increment			Cumulative			Criteria
		Year 2	Year 10	Year 20	Year 2	Year 10	Year 20	
Maximum 24-hour average PM10 (µg/m³)								
R1	34	-5.9	-8.5	11.0	28	25	45	50
R5	34	-3.2	-3.9	6.0	31	30	40	50
R10	34	-2.1	-2.9	4.2	32	31	38	50
R12	34	-3.1	-4.4	6.8	31	30	41	50
R16	34	-1.9	-1.9	1.9	32	32	36	50
R25	34	-4.4	-3.3	-0.3	30	31	34	50
R31	34	-1.4	0.4	2.2	33	34	36	50
R32	34	0.6	0.0	5.2	35	34	39	50
R34	34	-0.1	0.3	3.3	34	34	37	50
R46	34	-1.5	-0.1	2.0	33	34	36	50
R48	34	-3.8	-4.6	3.0	30	29	37	50
R60	34	0.6	0.3	1.7	35	34	36	50
R63	34	-2.7	-0.7	1.4	31	33	35	50
R67	34	0.1	0.1	1.2	34	34	35	50
R68	34	0.2	0.3	1.9	34	34	36	50
R74	34	0.2	-0.1	1.0	34	34	35	50

Property ID	Assumed background level	Project increment			Cumulative			Criteria
		Year 2	Year 10	Year 20	Year 2	Year 10	Year 20	
Annual average PM10 (µg/m³)								
R1	13	-1.9	-2.2	4.7	11	11	18	25
R5	13	-1.2	-1.3	2.6	12	12	16	25
R10	13	-0.8	-0.8	1.6	12	12	15	25
R12	13	-1.2	-1.3	1.9	12	12	15	25
R16	13	-1.0	-0.6	0.8	12	12	14	25
R25	13	-1.3	-0.7	0.2	12	12	13	25
R31	13	-1.0	-0.5	0.1	12	12	13	25
R32	13	-0.1	-0.2	0.7	13	13	14	25
R34	13	-1.6	-0.8	-0.1	11	12	13	25
R46	13	-0.3	0.0	0.4	13	13	13	25
R48	13	-0.5	-0.5	0.8	13	12	14	25
R60	13	0.0	0.1	0.3	13	13	13	25
R63	13	-0.3	-0.1	0.3	13	13	13	25
R67	13	0.0	0.0	0.1	13	13	13	25
R68	13	0.0	0.1	0.3	13	13	13	25
R74	13	0.0	0.0	0.1	13	13	13	25

The AQIA does not demonstrate that a reasonable worst-case scenario has been assessed.

The estimated emissions from truck movements taking material off-site are based on the proposed annual throughput (1.1 Mtpa). Using the assumed truck capacity of 30 tonnes and based on truck haulage of quarry product only to occur Monday - Friday as proposed, this equates to approximately 64 loaded trucks per day (i.e. 128 daily trucks movements - in and out). However, the proposed maximum number of loaded trucks per day is 140 (i.e. 280 trucks movements per day - in and out). As such the AQIA has potentially underestimated worst-case emissions and hence worst-case potential impacts.

The inclusion of a worst-case modelling scenario based on maximum daily material handling (including the proposed maximum truck movements) is likely to result in higher project-related increments. Worst-case modelling scenario based on maximum daily material handling is necessary to understand the potential 24-hr PM₁₀ and PM_{2.5} impacts due to the proposal.

Information required:

- Demonstrate that the assessed scenario is a reasonable worst- case scenario. Where robust demonstration & justification cannot be provided, revise the assessment to include a reasonable worst-case scenario.

Emissions from the Revised Project were calculated for each assessment scenario (Year 2, Year 10 and Year 20) based on:

- 500,000 tpa by road
- 600,000 tpa by rail.

The sensitivity of emissions to an increased proportion of product being loaded to truck and transported by road has been tested and subsequently evaluated by Jacobs (refer to **Appendix 5**) in response to the EPA submission. Jacobs re-calculated the annual TSP, PM₁₀ and PM_{2.5} emissions from the Revised Project for an alternative scenario being 1.1 Mtpa of product would be transported by road and following the calculation methodology from the AQIA. It is noted that this is not proposed and has only been provided as a sensitivity analysis, at the request of the EPA.

An increase in the assumed proportion of product being transported by road affects the emissions from 2 of the 22 dust-generating activities identified in the AQIA. Specifically:

- loading product to trucks
- hauling product off-site.

Table 4.4 shows the estimated emissions due to the Revised Project with an assumption that 1.1 Mtpa of product would be transported by road (which is not proposed). Year 20 was chosen as it represented the potential worst-case in terms of emissions and impacts to sensitive receptors. The calculations took into consideration the number of trips required for 30 tonne capacity trucks to transport 1.1 Mtpa of product over an annual period.

Table 4.4 Emissions due to the Revised Project for an alternative road transport scenario

Scenario	Estimated annual emissions (kg/y)		
	TSP	PM ₁₀	PM _{2.5}
Revised Project Year 20 with 500,00 t by road	170,234	62,610	9,546
Revised Project Year 20 with 1,100,00 t by road	181,994	64,850	10,106
Difference as a percentage	+7%	+4%	+6%

The results from **Table 4.4** show that PM₁₀ emissions may be 4% higher for the 1.1 Mtpa by road scenario. This level of change does not affect the outcomes of the assessment based on the model results from **Table 4.3** which show that the project increment would need to increase by more than 40% before the 24-hour average PM₁₀ criterion is exceeded, in the worst-case scenario (Year 20) for the most affect sensitive receptor.

It is considered that the AQIA adequately assesses the potential impacts of the Revised Project.

4.1.3 Water Resources

All reasonable and practical measures to avoid a discharge are not demonstrated.

Information required:

- **Consider and discuss options to increase the onsite storage to enable increased reuse, reducing potable water demand, and avoiding or minimising the need for a discharge.**
- **Provide an updated water balance detailing the predicted frequency, duration and volumes of water to be discharged under a range of scenarios (including typical and worst case).**

As indicated in Section 6.1.2 of the Surface Water Impact Assessment (SWIA) for the Revised Project (Umwelt, 2021a), Daracon has committed to develop a potable water use reduction strategy as part of a Water Management Plan (WMP) within 12 months of development consent. Implementation of the strategy will result in an increased demand for stormwater captured in the quarry water management system (WMS) to replace the potable usage. While substitution of potable water demands with captured stormwater will reduce discharge volumes and frequencies, there is still expected to be a requirement to discharged treated water from the quarry WMS.

The potable water use reduction strategy is anticipated to involve the addition of water storage tanks and additional water treatment to provide for greater capacity to re-use collected stormwater to meet quarry process plant demands. It is noted that due to quality specifications for some products (e.g. heavily bound products that meet TfNSW specifications), the quarry may still need to meet some water demands with potable water only. Following implementation of the potable water use reduction strategy, discharge volumes and frequencies are anticipated to be between those for the existing operation (23.8 ML/year) and those predicted by water balance modelling for Year 20 of the Revised Project (55.7 ML/year) (refer to Section 4.3.4 of the SWIA).

A discharge characterisation and impact assessment for all likely pollutants has not been provided.

The assessment includes recent water quality data from upstream, downstream and the onsite Dams 1 and 3. Monitored parameters include pH, electrical conductivity, TSS, turbidity, and nutrients. There is no characterisation of all pollutants that may be present at non-trivial levels, such as metals (including aluminium, iron, manganese, cadmium, copper, nickel, lead and zinc). Dam 3 also receives inflows of groundwater, which may also impact surface water quality.

The RtS indicated the ponds are dosed with a flocculent (Hifloc 20) and coagulant (Nalkat 7607). A Safety Data Sheet for the coagulant Nalkat 7607 is provided, however no further assessment of their potential impact on water quality has been provided. Chemical additives including flocculants can contain toxicants such as aluminium that also have the potential to cause harm to the environment.

Information required:

- **If the water balance indicates discharges from site are unavoidable, complete an updated discharge impact assessment for all pollutants that may be present at non-trivial concentrations. The Discharge Impact Assessment must include, at a minimum:**
 - **identification of all the potential pollutants at non-trivial levels which may be present in a discharge from the site**
 - **an assessment of the potential impact of discharges on receiving waters based on the discharge characterisation and with reference to the ANZG (2018) assessment criteria for slightly to moderately disturbed ecosystems and the NSW Water Quality Objectives:**
 - i. **specify the analytical limits of reporting used for any data that is being assessed**
 - ii. **compare the analytical limits of reporting to the relevant ANZG (2018) assessment criteria for slightly to moderately disturbed ecosystems**
 - iii. **where the limit of reporting does not provide a suitable basis for assessing risk, propose alternative options to characterise the risk, including more sensitive laboratory testing or risk mitigation options**
 - iv. **where pollutants have the potential to cause non-trivial harm in discharges, an investigation of practical measures that could be taken to avoid or minimise pollution.**

While the proposed potable water use reduction strategy has the potential to substantially reduce discharges, controlled discharges from the quarry WMS are considered to be unavoidable during periods of high or prolonged rainfall.

Further to the water quality data and assessment of water quality impacts presented in the SWIA, assessment of water quality monitoring results for a wider range of parameters has been undertaken. On 17 January 2019 and 14 February 2019 water quality monitoring of Dam1, Dam 3, the Paterson River upstream and the Paterson River downstream was undertaken by Daracon for an expanded suite of analytes including hydrocarbons and dissolved metals. All of the water samples were collected when there was no water being discharged from the quarry. The full set of water quality results for these monitoring rounds are included in **Appendix 6**.

All hydrocarbon analysis results both on-site and in the Paterson River, were below the analytical limits of reporting. For those hydrocarbons analysed with *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia, 2018) (ANZG 2018) default guideline values (DGVs), the analytical limits of reporting were below the respective 95% species protection DGVs (refer to **Table 4.5**) that would apply for slightly to moderately disturbed ecosystems.

Table 4.5 Hydrocarbon DGVs and Analytical Limits of Reporting

Analyte	95% Species Protection DGV (µg/L)	Limit of Reporting (µg/L)
Naphthalene	16	1
Benzene	950	1
Ethyl Benzene	80	1
m-Xylene and p-Xylene ¹	75 ²	2
o-Xylene	350	1
Toluene	180	2

Results for dissolved metals analysis are presented in **Table 4.6**. It should be noted that the samples were taken from within the dams themselves and there was no discharge from Dam 1 or Dam 3 at the time of water sampling.

The water quality results were compared with ANZG 2018 default guideline values (DGVs) for toxicants including the 95% species protection DGVs which are typically applied as DGVs for slightly to moderately disturbed ecosystems. Comparison to DGVs for 90% and 80% species protection levels, which may be applied to ecosystems considered to be highly disturbed, has also been made. The water quality results indicate:

- One Aluminium result of 60 µg/L in Dam 3 was marginally above the ANZG 2018 95% species protection DGV of 55 µg/L. However, this result is below the ANZG 2018 90% species protection DGV of 80 µg/L.
- The two (unspeciated) Arsenic results of 20 µg/L and 17 µg/L in Dam 3 are above the ANZG 2018 95% species protection DGV of 13 µg/L for Arsenic V. However, these levels are below the ANZG 2018 90% species protection DGV of 42 µg/L for Arsenic V as well as the ANZG 2018 95% species protection DGV of 24 µg/L for Arsenic III.
- One Copper result of 2 µg/L (the laboratory limit of reporting for Copper analysis was 1 µg/L) from Dam 3 is marginally above the ANZG 2018 95% species protection DGV of 1.4 µg/L. However, this result is below the ANZG 2018 80% species protection DGV of 2.5 µg/L. It should also be noted that Copper results of 1 µg/L and 2 µg/L (above the ANZG 2018 95% species protection DGV of 1.4 µg/L) were recorded at the Paterson River Downstream location (at a time when there were no discharges from the Quarry WMS) indicating elevated background copper concentrations in broader catchment runoff.

¹ Results only provided for total of m-Xylene and p-Xylene

² ANZG 2018 DGV for m-Xylene presented as there is no combined limit for m-Xylene and p-Xylene and the m-Xylene DGV is lower than the DGV for p-Xylene of 200 µg/L

- One Zinc result of 31 µg/L in Dam 3 above the ANZG 2018 95% species protection DGV of 8 µg/L. This result is equal to the ANZG 2018 80% species protection DGV. It should also be noted that Zinc results of 27 µg/L and 28 µg/L (above the ANZG 2018 95% species protection DGV of 8 µg/L) were recorded at the Paterson River Upstream and Downstream locations during both rounds of monitoring indicating elevated background zinc concentrations in broader catchment runoff.

Based on the water quality results presented in **Table 4.6** and **Appendix 6**:

- The risk of water quality impacts to the downstream environment associated with hydrocarbons in quarry discharges is considered negligible.
- The risk of adverse water quality impacts to the downstream environment associated with metals in quarry discharges is considered very low.

Given discharges from the quarry typically occur following periods of high or prolonged rainfall, it is anticipated that dissolved metals concentrations in discharged water will be lower than the results recorded for the samples collected from Dam 1 and Dam 3 when there was no discharge due to dilution. Notwithstanding the assessment that the risk of adverse water quality impacts associated with metals in discharges is very low, Daracon will undertake quarterly monitoring of the metals species listed in **Table 4.6** in quarry discharges from Dam1 and Dam 3, as well as at the Paterson River Upstream and Downstream monitoring locations for a period of 12 months should the Revised Project be approved. Monitoring for metals will recommence in the fourth quarter of the 2021 calendar year. Following 12 months of monitoring, Daracon will commission a review, detailing the monitoring results, and consult with the EPA in regard to the need or otherwise, for ongoing monitoring.

At times, surplus water captured in the quarry WMS requires treatment with chemical to achieve EPL total suspended solids discharge (TSS) limits.

Historically two chemicals have been used at the quarry (i.e. Hifloc 20 and Nalkat 7607), however, only Nalkat 7607 is now used as a coagulant to reduce TSS concentrations. While Nalkat 7607 can be harmful to aquatic organisms, it is used in a process with strictly controlled dosage rates and mixing regime to minimise the risk of unbound coagulant being discharged. Daracon has used Nalkat 7607 for water treatment at the quarry for approximately 7 years without incident. Quarry personnel responsible for water treatment processes are trained in the potential harmful environmental effects of Nalkat 7607 and the strict controls required to minimise the risk of unbound coagulant being discharged. As such, the ongoing use of Nalkat 7607 to achieve EPL discharge limits for TSS is considered appropriate.

Table 4.6 Dissolved Metals Results

Analyte	Units	Limit of Reporting	ANZG 2018 DGV ³	Dam 1		Dam 3		Paterson River Upstream		Paterson River Downstream	
				17/1/19	14/2/19	17/1/19	14/2/19	17/1/19	14/2/19	17/1/19	14/2/19
Aluminium	µg/L	10	55 ⁴	50	40	60	40	<10	<10	<10	<10
Arsenic	µg/L	1	13 ⁵	3	4	20	17	2	1	2	2
Boron	µg/L	20	940	300	280	730	780	100	70	100	100
Cadmium	µg/L	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	1	1 ⁶	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	1	1.4	1	1	2	<1	1	<1	2	<1
Iron	µg/L	10	- ⁷	<10	<10	<10	<10	40	60	20	20
Lead	µg/L	1	3.4	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	5	1,900	<5	15	<5	<5	21	34	11	5
Mercury	µg/L	0.05	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	µg/L	1	11	<1	<1	<1	<1	<1	<1	<1	<1
Selenium	µg/L	1	11 ⁸	3	3	5	5	<1	<1	<1	<1
Zinc	µg/L	1	8	8	31	8	12	28	27	28	27

³ DGVs presented are for 95% species protection in freshwater systems

⁴ Aluminium DGV is for pH>6.5

⁵ No speciation undertaken to differentiate Arsenic V and Arsenic III, therefore Arsenic V DGV presented as it is more conservative than the Arsenic II DGV of 24 µg/L

⁶ No speciation undertaken to differentiate Chromium VI and Chromium III, therefore Chromium VI DGV presented as it is more conservative than the Chromium II species protection unknown DGV of 3.3 µg/L

⁷ ANZG 2018 does not provide any freshwater DGVs for Iron

⁸ DGV presented is for total selenium concentration

The existing water quality within the onsite dams has the potential to cause non-trivial harm.

The RtS water quality data has identified high nutrient concentrations within Dam 1 and Dam 3. Total Nitrogen (TN) within Dam 1 (3.3-13 mg/L) and Dam 2 (2-17mg/L) is significantly higher the ANZECC (2000) guidelines (0.35mg/L). Oxides of Nitrogen (NO_x) within Dam 1 (2.7 – 11 mg/L) and Dam 2 (2 -17 mg/L) is also significantly higher than the ANZECC (2000) guidelines (0.04mg/L).

While the nutrient concentrations upstream and downstream of the facility occasionally exceed the ANZECC (2000) guidelines, the maximum observed concentrations are still several orders of magnitude lower than those within Dam 1 and Dam 3.

The water quality results outlined above indicate the potential for nontrivial harm to receiving waters if discharged. If revised onsite management practices cannot avoid, mitigate and minimise discharges of elevated nutrients from site, a Pollution Reduction Program (PRP) may be needed to investigate the extent of the pollution and potential impacts to the environmental values of the receiving water.

As previously discussed, water management practices at the quarry are expected to include the requirement to discharge surplus stormwater following high or prolonged rainfall events. As such Daracon propose to undertake further investigation of the potential impacts of controlled discharges that may contain elevated concentrations of nitrogen compounds through a pollution reduction study. It is important to note that the water quality results for nutrients presented in the SWIA were for samples collected from Dam 1 and Dam 3 when there was no water being discharged from the quarry. Given discharges from the quarry typically occur following periods of high or prolonged rainfall, it is anticipated that nutrient concentrations in discharged water will be lower than the Dam 1 and Dam 3 results presented in the SWIA due to dilution. Daracon will undertake the following works as part of the pollution reduction study:

- Monitoring of Total Nitrogen (TN), Nitrite (NO₂) and Nitrate (NO₃) in controlled discharges and in the waterways downstream of the quarry licensed discharge points on a monthly basis during discharge at each licensed discharge point
- Monitoring of Total Nitrogen (TN), Nitrite (NO₂) and Nitrate (NO₃) in the waterways downstream of the quarry licensed discharge points both during natural runoff events (i.e. with no quarry discharge) on a quarterly basis
- Inspection of the waterways downstream of the quarry licensed discharge points to identify any evidence of eutrophication on a quarterly basis
- Following 12 months of monitoring, preparation of a report by a suitably qualified and experienced person detailing the monitoring undertaken and any identified impacts that can be attributed to quarry discharges containing nitrogen compounds.

Should the monitoring undertaken demonstrate minimal impacts associated with quarry discharges containing nitrogen compounds, the monitoring being undertaken for the investigation would cease.

4.2 DPIE – Water and NRAR

4.2.1 Water Resources

Water Take and Entitlement

- Review the surface water management system to separate runoff from undisturbed and disturbed catchments. This needs to be maximised to achieve best practice and to minimise the requirement to hold water licences. The use of clean water dams that are sized within the Maximum Harvestable Rights Dam Capacity and clean water diversions where appropriate is recommended.
- Review the surface water management system to ensure dams on minor streams are either: 1) consistent with the Maximum Harvestable Rights Dam Capacity of the property, 2) satisfy the exclusion in Sch 1(3) of the WM Reg 2018 which requires the dam to be used solely for the purpose of the exclusion, or 3) considered for water licensing.
- Review the surface water entitlements for the project on minor streams based on the review of the surface water management system. This needs to recognise there is no ability to reduce water license requirements based on return water via operational discharges subsequent to the initial water capture.
- Review the water balance based on any changes to the water management system to: 1) confirm water availability for the project in the range of wet, dry and median years, 2) assess potential changes to downstream flows and any impacts to the environment and water users, and 3) assess any changes to the final void water level recovery.

Assessment of options for diversion of clean water were considered during the preparation of the SWIA and were considered to be not feasible. Further consideration has been given to additional measures for diversion, however feasibility remains an issue. No changes to the operational or post-closure surface water management systems are proposed and as such, the water balance presented in the SWIA has not been amended.

The quarry extension will result in the capture of runoff from an additional 16.2 ha of undisturbed catchment. Based on an average annual runoff of 0.95 ML/ha/year at the quarry location the licensable surface water extraction for capture of runoff within the quarry water management system will be 15.3 ML/year. The quarry's harvestable right is 11.7 ML/year based on a total landholding of 123.5 ha and an average annual runoff of 0.95 ML/ha/year. As such, the licensable surface water extraction when harvestable rights provisions are taken into account will be 3.6 ML/year.

Daracon will obtain appropriate surface water access licences to cover licensable take from the Paterson/Allyn Rivers water source prior to lateral extension of the quarry that results in the interception of additional undisturbed catchment.

The approach of accounting for water returned to the downstream catchment has only been applied to the post closure licensing calculations once the final voids have filled with water. The rationale for this is that, once filled, the voids do not 'return water' but rather operate as flow through systems with the only 'take' being the losses attributable to evaporation from the pit lake. Prior to filling of the final voids to a level where they periodically flow to the downstream watercourses, the SWIA proposes that all water captured is licensable and Daracon will obtain the required surface water entitlement in the Paterson/Allyn Rivers water source to meet licencing requirements.

The SWIA proposed that, once filled, the licensable water extraction associated with the voids should be the difference between the average volume of runoff and direct rainfall to the residual voids and the average volume of water flowing through to the downstream watercourses. This essentially means that the licensable water extraction is equivalent to the evaporative losses from the residual void water surface. It is noted that during dry years, flows from the residual voids may not occur while during wet years flows are likely to be well above the average. As part of the Quarry closure planning process, Daracon will consult with DPIE Water regarding the surface water licensing associated with the final voids and ensure that sufficient surface water entitlement is maintained in accordance with the relevant legislative requirements and policies in place at the time of closure.

Bore Impact Assessment

- **Undertake an impact assessment of bore 20BL171512 according to the requirements of the Aquifer Interference Policy; include the bore in a monitoring plan under the Water Management Plan; and commit to “make good” if supply is affected beyond minimal thresholds.**

Bore 20BL171512 (converted to 20CA214711) (the bore) is located on Lot 3 DP250820 (refer to **Figure 4.1**). Upon further advice, DPIE Water informed Umwelt via email dated 14 September 2021, that the exact location of the bore cannot be confirmed, nor can it be confirmed if the bore has been constructed or in use. To undertake an assessment, AGE therefore assumed a conservative representative location of the bore as illustrated on **Figure 4.1**.

An assessment of potential impacts on the bore as a result of the Revised Project was undertaken by AGE (refer to **Appendix 7**) which concluded that there is a groundwater divide hydraulically separating the quarry from the bore. The groundwater divide is a function of the regional potentiometric surface and the hydraulic conductivity of the relevant geological units that separate the quarry from the bore (AGE, 2021a). **Figure 4.2** shows the extended conceptual model including the assumed bore location and depth.

The assessment further concluded that the bore is outside the radius of influence associated with the most conservative drawdown predictions used in the Groundwater Impact Assessment (GIA) (AGE, 2021) included in the ADA Report. Therefore, it is predicted that there is no potential for impacts to groundwater levels at the bore as a result of the Revised Project.

Furthermore, the bore is not within the receiving environment of the quarry and no impacts to water quality are predicted at the property as a result of the Revised Project.

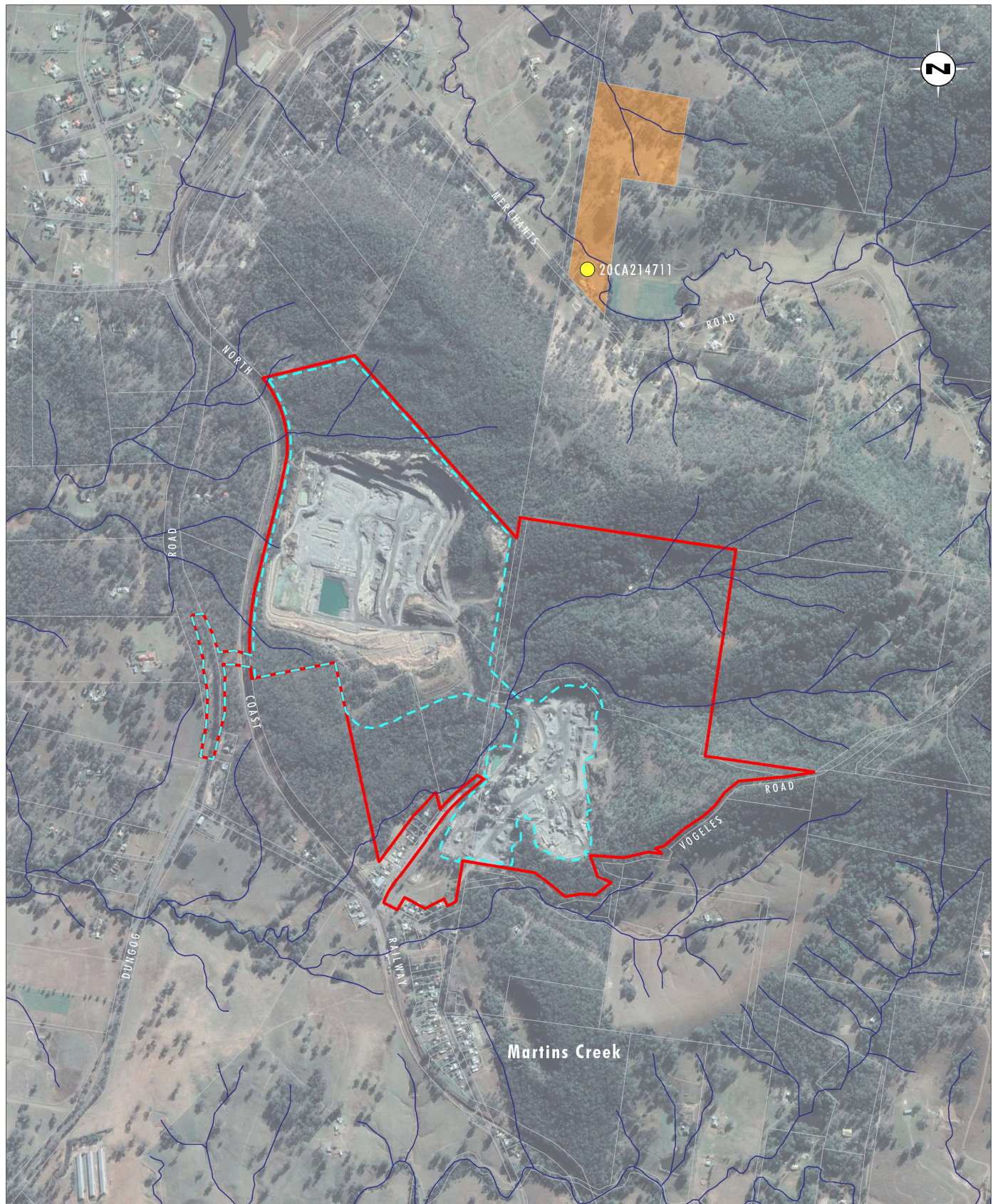


Image Source: Google Earth (2018)
Data Source: Daracon (2020)

0 250 500 750m
1:15 000

Legend

- Project Area
- - - Proposed Disturbance Area
- Lot 3/DP250820
- Indicative Bore Location
- Drainage

FIGURE 4.1

Location of Bore in Relation
to the Martins Creek Quarry

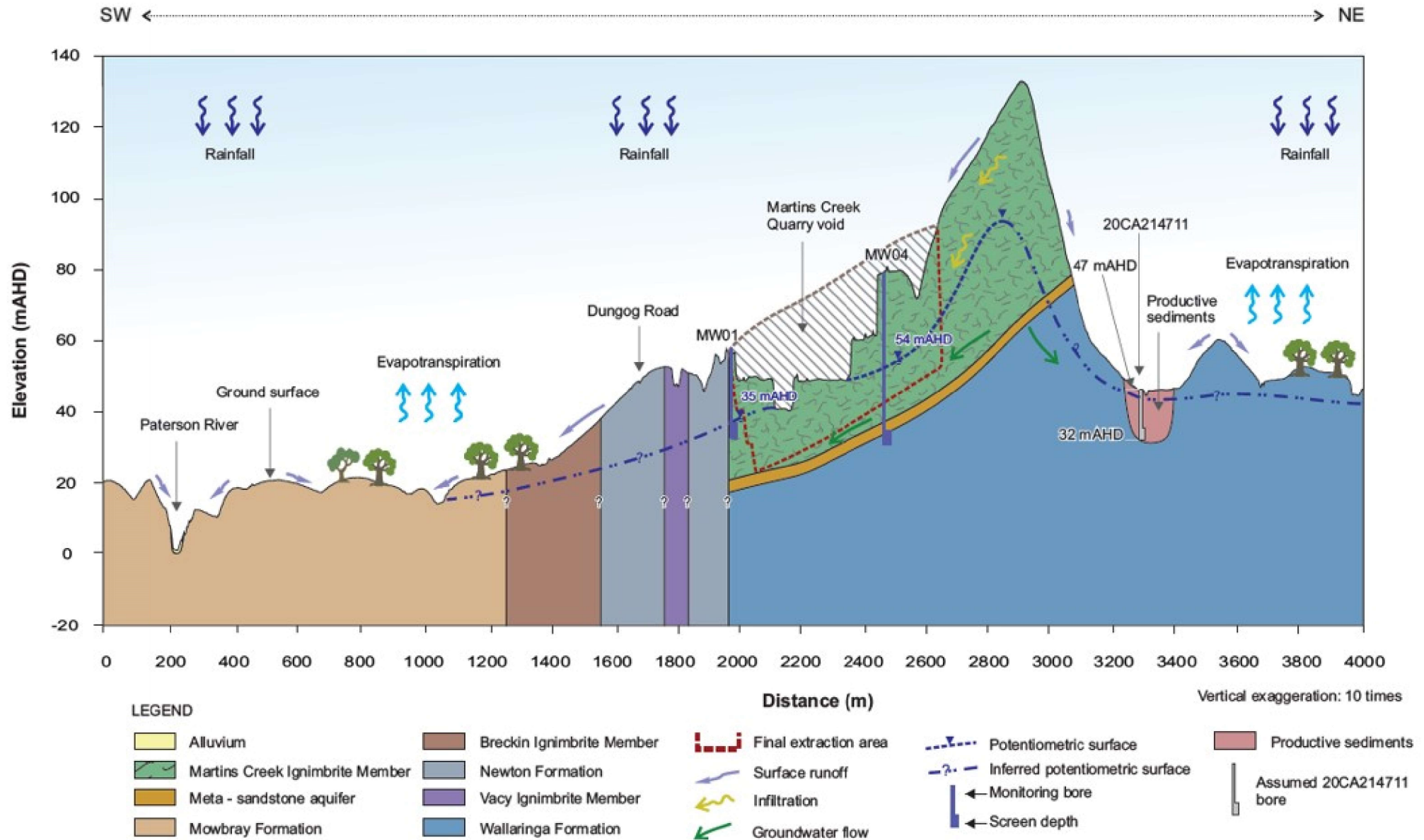


FIGURE 4.2

Extended Geological
Cross-section SW-NE

Post Approval Recommendations

The ability to accurately meter and monitor water take from surface and groundwater sources will need to be developed with ongoing review of actual versus modelled predictions. This will be a key component to confirm impact predictions, the adequacy of mitigating measures and compliance for water take.

- The Water Management Plan should be updated to reflect monitoring, metering and management measures to report on groundwater and surface water take and potential impacts to water sources due to the activity.
- The proponent must report on water take at the site each year (direct and indirect) in the Annual Review. This is to include water take where a water licence is required and where an exemption applies. Where a water licence is required, the water take needs to be reviewed against existing water licences.
- The proponent must ensure sufficient water entitlement is held in a water access licence/s to account for the maximum predicted take for each water source prior to take occurring.
- The proponent must ensure that relevant nomination of work dealing applications for Water Access Licences proposed to account for water take by the project have been completed prior to the water take occurring.
- The proponent must comply with the rules of the relevant water sharing plans.

As detailed in Section 8.1.10 of the ADA Report, Daracon has made a commitment to develop and implement a comprehensive Water Management Plan (WMP) in consultation with DPIE Water, should the Revised Project be approved.

Daracon commits to the implementation of the post approval requirements outlined by DPIE Water, as part of the WMP.

4.3 Biodiversity Conservation Division

4.3.1 Biodiversity

BCD recommends that further details are provided on the survey effort for *Cymbidium canaliculatum*, *Cynanchum elegans*, *Diuris pedunculata*, *Grevillea parviflora* ssp. *parviflora*, *Pterostylis chaetophora* and *Senna acclinis*.

Previous parallel traverse searches for threatened flora species were undertaken across the proposed disturbance area for the Original Project at approximately 10m spacings. As outlined in **Section 1.1**, the disturbance area for the Original Project was larger in extent than is now proposed for the Revised Project.

In response to BCD's comments, additional surveys were conducted on 28 and 29 September 2021.

The additional targeted parallel traverse searches were undertaken at approximately 5m, in accordance with the requirements of the FBA. The updated survey effort is shown in **Figure 4.3**.

Table 4.7 provides details of the total effort for parallel traverse searches across the proposed disturbance area for each of the threatened flora species, as identified by BCD. No additional threatened flora species were observed during the additional searches completed.

Table 4.7 Survey Effort

Species Name	Survey Period	Previous 10 m Parallel Traverse Surveys	Additional 5 m Parallel Traverse Surveys
<i>Cymbidium canaliculatum</i>	All Year	3 October 2018 (14 person hours)	28 September 2021 (15 person hours)
<i>Cynanchum elegans</i>	All Year	9 October 2018 (22.5 person hours)	29 September 2021 (14 persons hours)
<i>Diuris pedunculata</i>	September - October	19 February 2019 (1 hour)	
<i>Grevillea parviflora subsp. parviflora</i>	August - November		
<i>Pterostylis chaetophora</i>	September – early November	Total effort: 37.5 person hours	Total effort: 29 person hours
<i>Senna acclinis</i>	All Year		

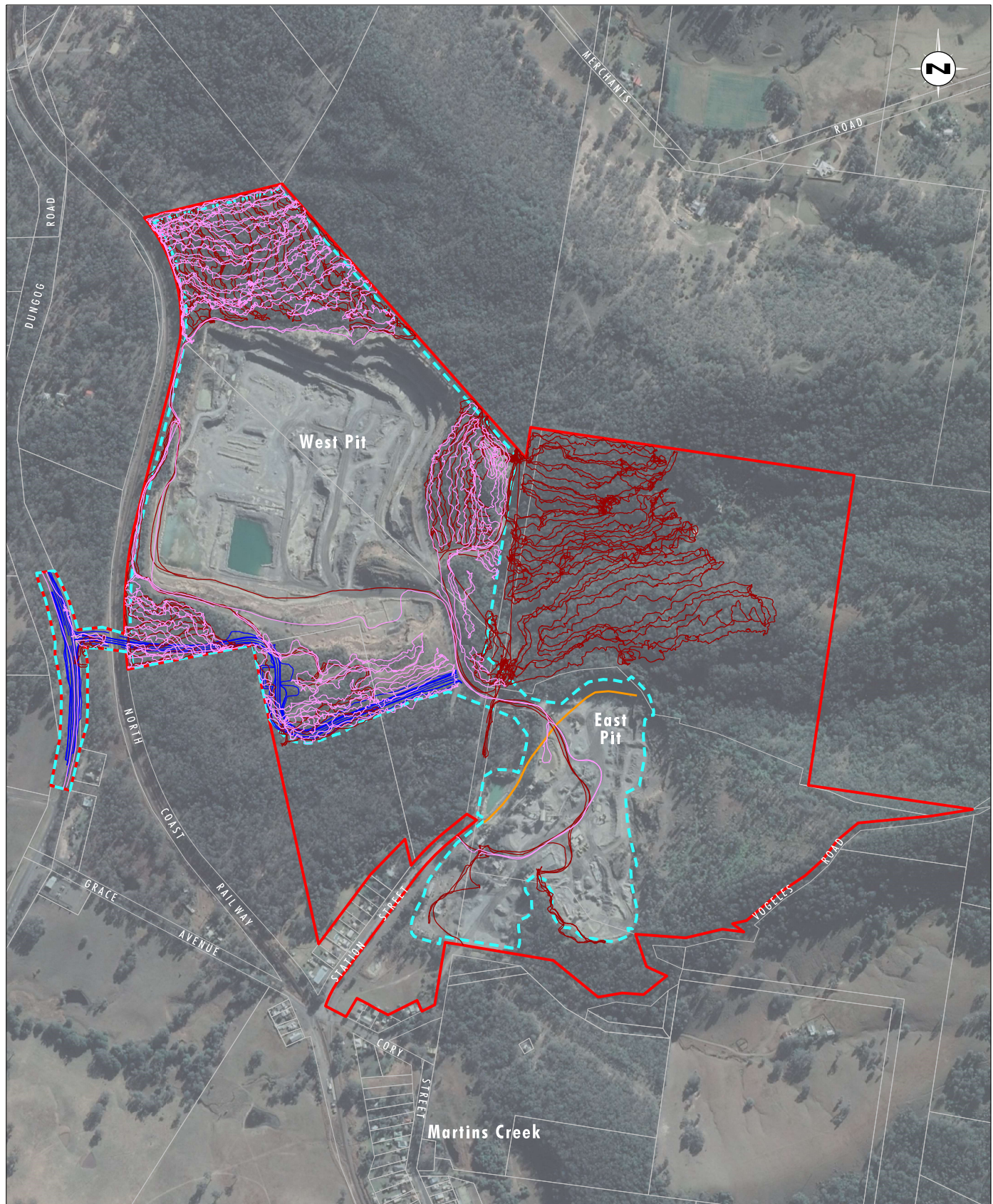


Image Source: Google Earth (2018)
Data Source: Daracon (2020)

0 100 250 500m
1:10 000

Legend

- Project Area
- - - Proposed Disturbance Area
- New Access Road
- Proposed Rail Siding Extension
- Threatened Flora Survey Locations (Oct 2018)
- Threatened Flora Survey Locations (Sept 2021)

File Name (A4): R12/3957_248.dgn
20211029 10.29

FIGURE 4.3
Survey Efforts

BCD recommends that details of the biodiversity offset strategy are provided to the Biodiversity Conservation Trust, so that its details can be verified.

Consistent with the approach often taken for SSD approvals, the Biodiversity Offset Strategy (BOS) will be further developed in consultation with the BCD and DPIE, following development consent as part of a future Biodiversity Stewardship Site application. The BOS will be based on the credits required to be retired to offset the impacts of the Revised Project as specified in the Biodiversity Assessment Report (Conacher, 2021) and the offset options available under the BC Act.

4.3.2 Matters of National Environmental Significance

BCD recommends that additional information on the assessment of Matters of National Environmental Significance is provided in Section 8 of the Biodiversity Assessment Report.

Detailed assessment of the Matters of National Environmental Significance (MNES) relevant to the Revised Project were undertaken as part of:

- the SWIA, provided as Appendix I of the ADA Report, and summarised in Section 6.9 of the ADA Report
- the Groundwater Impact Assessment, provided as Appendix H of the ADA Report, with a summary in Section 6.8 of the ADA Report
- the Biodiversity Assessment Report (BAR), Appendix J of the ADA Report, and summarised in Section 6.10 of the ADA Report.

In addition, Section 7.0 of the ADA Report provided a summary of the key MNES assessment findings as well as a checklist of the Department of Agriculture, Water and the Environment's (DAWE) assessment requirements and where these were addressed in the specialist reports as well as in the ADA Report. The checklist of DAWE's assessment requirements and where they have been addressed in this ADA Report is provided in **Table 4.8**.

Table 4.8 DAWE Assessment Requirements Checklist

Requirement	Response and Section where Addressed
The proponent must undertake an assessment of all the protected matters that may be impacted by the development under the controlling provision identified in paragraph 1. A list of protected matters that are considered likely to be significantly impacted is provided at Attachment A to these Guidelines. Note that this may not be a complete list and it is the responsibility of the proponent to ensure any protected matters under this controlling provision, likely to be significantly impacted, are assessed for the Commonwealth decision-maker's consideration	<p>All relevant matters have been considered and assessed in the ADA including consideration of all potential controlling provisions (refer to Section 4.1.1 of the ADA Report). To inform this assessment a protected matters database search was undertaken. Key technical studies completed include:</p> <ul style="list-style-type: none"> • groundwater assessment (Appendix H of the ADA Report) • surface water assessment (Appendix I of the ADA Report) • biodiversity assessment (Appendix J of the ADA Report).

Requirement	Response and Section where Addressed
General Requirements	
The precise location and description of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on matters of national environmental significance (MNES).	Refer to Section 3.0 of the ADA Report which provides a detailed description for the action.
How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts on MNES.	Refer to Section 3.0 of the ADA Report which provides a detailed description for the action.
<p>An assessment of the relevant impacts of the action on Ramsar wetlands and threatened species and communities; including:</p> <ul style="list-style-type: none"> a description and detailed assessment of the nature and extent of the likely direct, indirect and consequential impacts, including short term and long term relevant impacts a statement whether any relevant impacts are likely to be known, unpredictable or irreversible; analysis of the significance of the relevant impacts any technical data and other information used or needed to make a detailed assessment of the relevant impacts a comparative description of the impacts of alternatives, if any, on the threatened species and communities. 	<p>Detailed assessment of the impacts of the action on the Ramsar wetland and the threatened species and communities have been completed.</p> <p>For water impacts refer to the groundwater assessment in Appendix H of the ADA Report, as summarised in Section 6.8 of the ADA Report and the surface water assessment in Appendix of the ADA Report, as summarised in Section 6.9 of the ADA Report.</p> <p>For biodiversity impacts refer to the biodiversity MNES assessment in Section 8 of Appendix J of the ADA Report.</p>
<ul style="list-style-type: none"> Information on proposed avoidance and mitigation measures to manage the relevant impacts of the action including: a description of the proposed avoidance and mitigation measures to deal with the relevant impacts of the action assessment of the expected or predicted effectiveness of the mitigation measures the cost of the mitigation measures a description of the outcomes that the avoidance and mitigation measures will achieve a description of the offsets proposed to address the residual adverse significant impacts and how these offsets will be established. 	Refer to Section 7.1.1 of the ADA Report.
Key Issues - Ramsar	
Identify and describe the location, extent and ecological characteristics and values of the Wetland of International Importance identified at Attachment A that is likely to be impacted by all stages of the proposed development.	Refer to the biodiversity MNES assessment in Section 8 of Appendix J of the ADA Report.
<p>The assessment of impacts should include information on:</p> <ul style="list-style-type: none"> areas of wetland being destroyed or substantially modified substantial and measurable changes to the hydrological regime of the wetlands, for example a substantial change to the volume, timing, duration or frequency of ground and surface water flows to and within the wetland the habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland that are at risk of being affected 	<p>A detailed assessment of the impacts of the action on the Ramsar wetland has been completed.</p> <p>For water impacts refer to the groundwater assessment in Appendix H of the ADA Report, as summarised in Section 6.8 of the ADA Report and the surface water assessment in Appendix I of the ADA Report, as summarised in Section 6.9 of the ADA Report.</p>

Requirement	Response and Section where Addressed
<ul style="list-style-type: none"> substantial and measurable change in water quality of the wetlands, for example a substantial change in the level of salinity, pollutants, nutrients or temperature that may adversely impact on biodiversity, ecological integrity and social amenity or human health invasive species that may be harmful to the ecological character of the wetlands, if introduced or spread as a result of the development description of any mitigation and management measures proposed to protect or enhance the elements of the impacted ecological character of the Wetland of International Importance. 	<p>For biodiversity impacts refer to the biodiversity MNES assessment in Appendix J of the ADA Report.</p> <p>For a consolidated list of the proposed mitigation and management measures for the action refer to Section 8.0 of the ADA Report and in Appendix 2.</p>
Key Issues - Biodiversity	
<p>Identification of each EPBC Act listed threatened species and community likely to be significantly impacted by the development. Provide evidence why other EPBC Act listed threatened species and communities likely to be located in the project area or in the vicinity will not be significantly impacted. in accordance with the <i>Matters of National Environmental Significance - Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999 (Significant Impact Guidelines)</i>.</p>	<p>Summary provided below in Section 7.1.3 of the ADA Report</p> <p>Further detail is provided in Appendix J of the ADA Report – Biodiversity Assessment Report.</p>
<p>For each of the relevant EPBC Act listed threatened species and communities likely to be significantly impacted by the development the assessment must provide a separate:</p> <ul style="list-style-type: none"> description of the habitat and habits (including identification and mapping of suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advice, conservation advice and recovery plans, threat abatement plans and wildlife conservation plans details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Australian Government guidelines and policy statements description of the impacts of the action having regard to the full national extent of the species or community's range. 	<p>Summary provided below in Section 7.1.3 of the ADA Report</p> <p>Further detail is provided in Appendix J of the ADA Report – Biodiversity Assessment Report.</p>
<p>For each of the relevant EPBC Act listed threatened species and communities likely to be significantly impacted by the development the assessment must provide a separate:</p> <ul style="list-style-type: none"> identification of significant residual adverse impacts likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account details of how the current published NSW Framework for Biodiversity Assessment (FBA) has been applied in accordance with the objects of the EPBC Act to offset significant residual adverse impacts details of the offset package to compensate for significant residual impacts including details of the credit profiles required to offset the development in accordance with the FBA and/or mapping and descriptions of the extent and condition of the relevant habitat and/or threatened communities occurring on proposed offset sites. 	<p>Summary provided below in Section 7.1.3 of the ADA Report</p> <p>Further detail is provided in Appendix J of the ADA Report – Biodiversity Assessment Report.</p>

Requirement	Response and Section where Addressed
Any significant residual impacts not addressed by the FBA may need to be addressed in accordance with the <i>Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy</i> .	Refer to Section 7.1.3 of the ADA Report
Environmental Record of person proposing to take the action	
The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the person proposing to take the action; and for an action for which a person has applied for a permit, the person making the application.	Refer to Section 7.1.4 of the ADA Report
If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.	Refer to Section 7.1.4 of the ADA Report

4.3.3 Water Resources

The impact of the interception of flows, concentration and frequency of discharge on receiving waters should be considered. Riparian vegetation and bank stability need to be monitored together with development of appropriate remedial actions if impacts are predicted.

The streams receiving discharges from the quarry WMS (via EPL 1378 licenced discharge points (LDP) 6 and LDP 8 have been subject to the altered flow regime associated with controlled discharges for approximately 9 years.

As the Revised Project will result in the capture of runoff from additional undisturbed and disturbed catchment, the volumes and frequencies of discharges from the quarry WMS are predicted to increase while natural flows downstream of the intercepted waterways would decrease. Water balance modelling predicts that, based on current operational usage requirements, on average discharge days will increase from 60 days/year to 93 days/year and the average discharged volume from 140 ML/year to 170 ML/year. The instantaneous discharge flow rates from LDP 6 (Dam 1) and LDP 8 (Dam 3) will remain unchanged at 70 L/s and 140 L/s respectively from the existing operation discharge flow rates. Historically discharges from the quarry WMS have occurred over several hours (up to approximately 8 hours per day) in a day and may occur on consecutive days. The maximum recorded discharge volume in a 24 hour period from 2014 to 2019 was 4.3 ML.

Flow duration curves for the existing quarry operation and the Year 15 quarry operation have been prepared for:

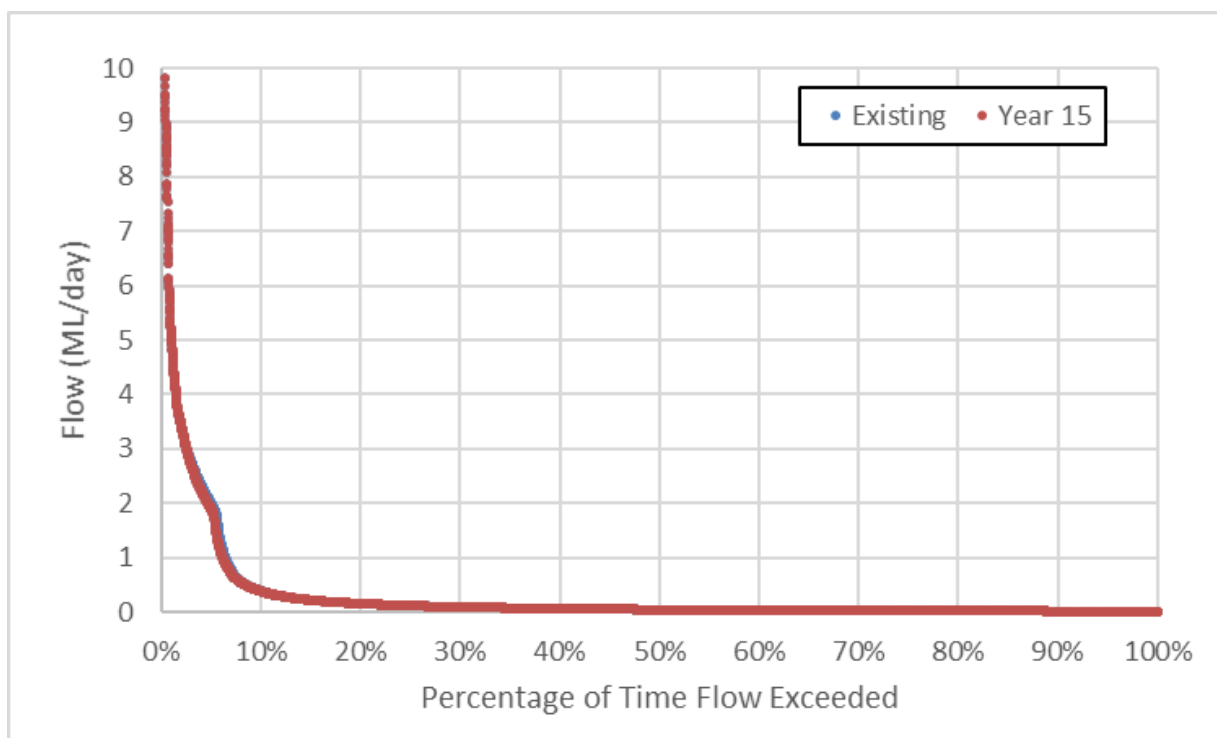
- the LDP 6 location in the third order stream which receives flows from the upslope undisturbed catchment (refer to **Figure 4.4**)
- in the second order stream downstream LDP 8 and immediately upslope of the confluence with the adjacent second order stream to the south (refer to **Figure 4.4**).

The flow duration curves were using the daily time step water balance model developed in the GoldSim software modelling platform used for the SWIA. The water balance model uses a historical rainfall data set from the Paterson Post Office Bureau of Meteorology (BoM) station for the period 1968 to 2019 and daily evaporation based average monthly evaporation from the Tocal AWS BoM station as inputs. Catchment runoff is estimated in the water balance model using the Australian Water Balance Model (AWBM) with AWBM calibrated such that the average annual runoff rate for undisturbed catchments is equal to the average annual runoff of 0.95 ML/ha/year (as per the NSW Maximum Harvestable Rights Dam Capacity calculator for the quarry location). Predicted daily discharges from LDP 6 and LDP 8 were added to the predicted stream flows (associated with runoff from upslope undisturbed catchments) at the locations listed above.

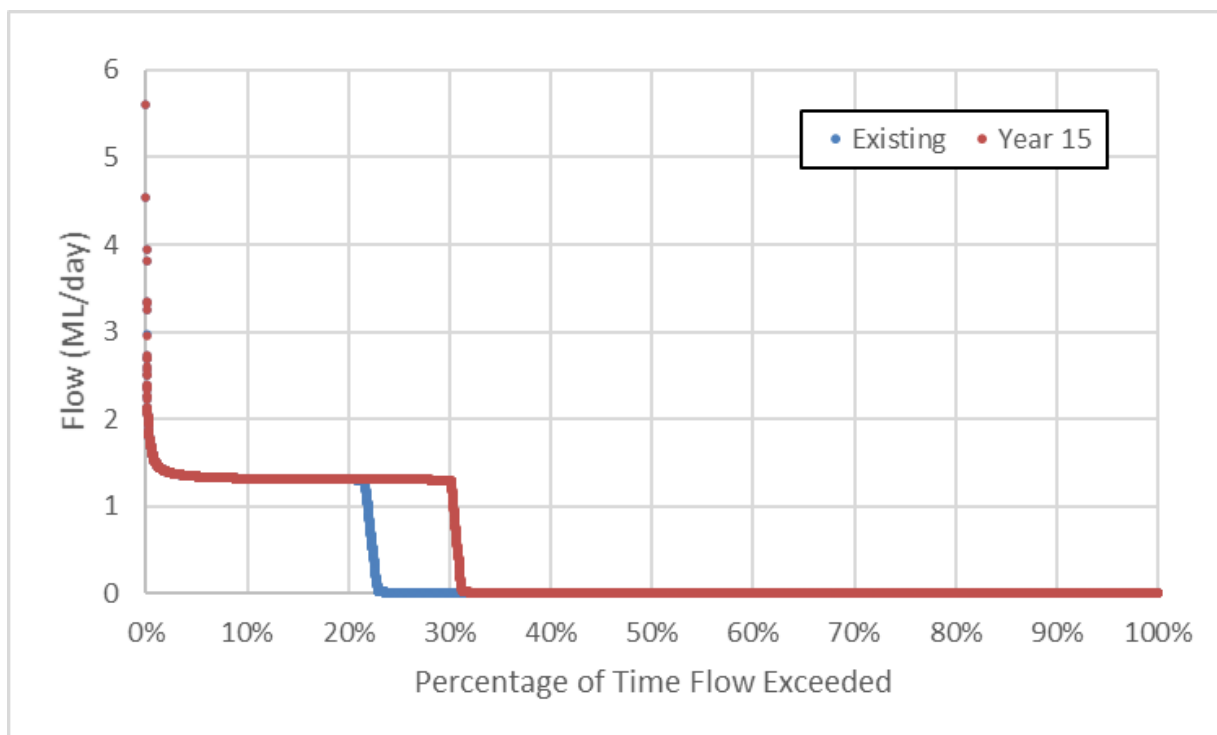
The flow duration curves for the LDP 6 (refer to **Graph 4.1**) location indicates minimal change is likely from the existing operation to the Year 15 operation. The minimal change can be attributed to the proposed water management practise whereby Daracon will manage a significant proportion of water from the East Pit in Dam 3 as this is the primary operational water storage as well as the large undisturbed upslope catchment (approximately 90 ha) draining to LDP 6. Dewatering from the East Pit to Dam 1 will still be undertaken to manage inventories in Dam 3.

The flow duration curves for the location downstream of LDP 8 (refer to **Graph 4.2**) show a more substantial change with flows exceeding 1 ML/day predicted to increase from approximately 22% of the time to 30% of the time. This change can be attributed to the increase in catchment draining to Dam 3 as the West Pit expands and the associated increase in discharges via LDP 8 as well as the relatively small undisturbed upslope catchment (approximately 5 ha) draining to the modelled location. It is considered that the predicted increase in the frequency of flows exceeding 1 ML/day from approximately 22% to 30% will not have an appreciable impact on stream stability or riparian health at the modelled location or further downstream, particularly in light of the much higher flow rates which occur during larger rainfall events. It is noted that the historical maximum daily discharge of 4.3ML in a 24 hour period is still well below the peaks observed during large rainfall events.

Daily stream flow estimates were also undertaken using the water balance model for the LDP 6 location and at LDP 8 based on a scenario where the entire upslope catchments are undisturbed (i.e. the quarry is not an existence). The maximum predicted flows at LDP 6 and LDP 8 under these modelled scenarios were 87.9 ML/day and 30.5 ML/day respectively. While discharges can occur continuously for periods of up to 24 hours (subject to compliance with noise criteria and EPL water quality limits) with maximum daily discharge flows from LDP 6 and LDP 8 to approximately 6 ML/day and 12 ML/day respectively, continuous discharges over a 24 hour period are expected to be infrequent with typical discharge volumes being comparable to historical discharge volumes. Further, it is noted that the historical maximum recorded daily discharge of 4.3 ML and the predicted maximum daily discharge of approximately 12 ML in a 24 hour period are well below the predicted maximum daily flows during large rainfall events.



Graph 4.1 LDP 6 Flow Duration Curves



Graph 4.2 Downstream of LDP 8 Flow Duration Curves



Image Source: Google Earth (2018)
Data Source: Daracon (2020)

0 250 500 750m
1:15 000

Legend

- ▬ Project Area
- ▬ Drainage
- Discharge Point
- Flow Duration Curve Location

FIGURE 4.4

Locations for Flow Duration Curves

Further to the above analysis, we note that Daracon has committed to a potable water use reduction strategy which will maximise the use of rainfall and runoff captured in the quarry WMS and therefore limit the increase in volumes and frequencies of controlled discharges as the quarry extension progresses. All water discharged from the quarry WMS will continue to be treated, as required, to meet EPL water quality limits.

Based on the above analysis, the Project would not result in an increase in the magnitude of flow events within the downstream catchments. While the Project will increase the occurrence of flows in the downstream catchment, the nature of these flows is unlikely to have an adverse impact on stream bank stability or riparian health. Due to the nature of the discharges, ongoing monitoring of stream bank stability downstream of the discharge points is not considered to be warranted.

The impact of changes in groundwater hydrology on riparian vegetation and any ground water dependent ecosystems should be considered.

The impact of changes in groundwater hydrology were assessed in the Groundwater Impact Assessment (GWIA) (AGE, 2021). The GWIA indicated that the Revised Project is not predicted to result in any additional drawdown. In addition, there are no high priority groundwater dependent ecosystems (GDEs) within the footprint of the Revised Project extraction area.

The absence of aquifer depressurisation observed in monitoring bores (excepting MW04, which is adjacent the pit) indicates that low or moderate potential GDEs at the quarry will likely be unaffected. Further, current communities near MW04 (where the water table is declining) show no signs of declining health. This is strongly indicative that the communities located immediately up slope from MW04 are not groundwater dependent. The GWIA therefore concluded that there would be no additional impact on these ecosystems.

Management measures proposed include the monitoring and reporting of impacts on GDEs and riparian vegetation and identify trigger levels for the remediation of any material impacts to these ecosystems.

The impact of local flooding on the safety of quarry workers including likely rate of rise and evacuation should be considered.

Given the large pit water holding capacity of the quarry pits, the likelihood of quarry workers being unable to escape floodwaters due to inundation associated with direct rainfall and runoff to the pits in an extreme rainfall event is considered unlikely. For example, a 300 mm runoff event for the Year 15 West Pit catchment would result in 20 ML of water draining to the base of the pit, inundating approximately 20% of the pit floor.

It is considered that there will be more than adequate time for quarry workers to remove equipment and evacuate from low lying areas within the quarry pits prior to the onset of an extreme rainfall event. Further, monitoring of flood warnings and evacuation plans are part of Daracon's emergency management plan that will be implemented as required to ensure quarry worker safety.

As with existing operations (and for residents in the Martins Creek locality), there is a risk that flooding within the Paterson River will prevent employees from leaving the site via Patterson. Alternate egress for employees is available via Dungog Road to the north.

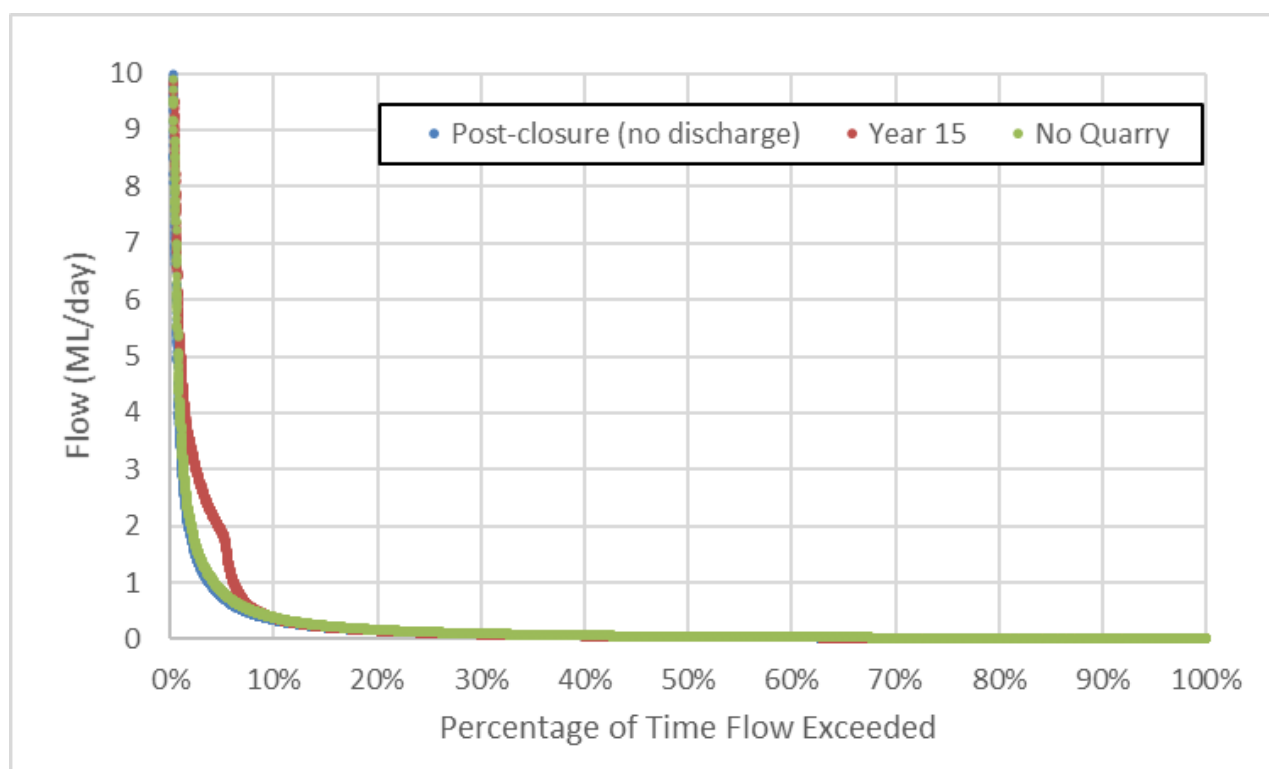
The hydraulic impacts of inclusion of large mine voids in the final landform on downstream flooding and streambank erosion should be assessed.

It is acknowledged that the expanded West Pit will concentrate flows from a broader catchment than the existing West Pit and both pit voids will not discharge for an extended period following quarry closure. However, the cessation of flow from the existing West Pit will occur, albeit for a shorter period, irrespective of the Revised Project being approved and implemented.

When the West Pit fills and periodically flows to the receiving stream commence, flows during high or prolonged rainfall events are likely to exceed those that would have been experienced by the watercourse from its original undisturbed catchment. As part of quarry closure planning, Daracon will undertake a detailed assessment of the likely flows to the receiving stream during design storm events considered as an appropriate basis for design of the West Pit spillway and erosion protection for receiving streams. Daracon will undertake erosion protection works as informed by modelling (and as required) to the receiving streams as part of quarry closure works.

Potential adverse impacts on flooding downstream of the pit voids are not expected as the voids will effectively act on-site detention systems delaying peak flows to the downstream watercourses. Notwithstanding this, Daracon will also consider potential flooding impacts and any required mitigation as part of closure planning.

While the East Pit will not discharge for an estimated period of eight years following closure, flows in the third order stream that receive discharges from LDP 6 (Dam 1) will continue as a result of catchment runoff from the upslope undisturbed catchment. **Graph 4.3** presents post-closure (no discharge), operational Year 15 (with assumed discharges) and no-quarry scenario stream flow duration curves for the third order stream at the LDP 6 location (refer to **Figure 4.4**). **Graph 4.3** demonstrates that there is a reduction in the frequency of flows ranging from approximately 0.5 ML/day to 4.5 ML/day due to the cessation of discharges from LDP 6 when compared to the Year 15 operational scenario. However, **Graph 4.3** also demonstrates that post-closure flows are only marginally below the flows for a no-quarry scenario. It is therefore considered that the reduction in flow frequency post-closure will result in close to natural flow regimes at LDP 6 and no significant impacts on bank stability or riparian vegetation are expected.



Graph 4.3 Year 15 and Post-closure Flow Duration Curves at LDP 6

4.4 Transport for NSW

4.4.1 Traffic and Transport

Gresford Road/Dungog Road Intersection

- Previous comments provided by TfNSW regarding the intersection of Gresford Road and Dungog Road are generally addressed by Daracon in the RtS. As both Gresford and Dungog Roads are local roads it is recommended Daracon design and construct the intersection in accordance with the relevant standards, to Council's satisfaction, before the commencement of any operational stages of the project.

Daracon has consulted DSC during the design of the Gresford Road/Dungog Road intersection. As detailed in Section 5.3 of the ADA Report, a meeting was held on 27 February 2020 with Lindsay Dynan, who were engaged to conduct the concept design for this intersection, and DSC to discuss the proposed design.

The detailed design for this intersection upgrade will be prepared in accordance with Austroads Guidelines and will require DSC approval.

Gostwyck Bridge and approaches

- **Gostwyck Bridge is under the care and control of TfNSW. The Gostwyck Bridge Report does not address the bridge barrier capacity of the existing bridge. TfNSW can advise that the existing barriers are timber railings that are typical of heritage timber bridges and that upgrade of the barriers to meet current standards is not feasible with the existing deck configuration. To ensure safety of the bridge and road users it will be necessary to keep traffic on the centre of the bridge by installing kerbs that maintain a 3.5m travel lane. The kerbs must be compatible with timber bridge heritage requirements. The design of kerb is to be approved by TfNSW and design/installation funded by Daracon.**

If development consent is granted for the Revised Project, Daracon agree to fund the design and installation of a 200mm x 200mm timber kerb on Gostwyck Bridge maintaining a 3.5 m travel lane.

The final design of the kerb will be subject to TfNSW approval.

- **The report outlines cost of maintenance and requires clarification on contribution to maintenance costs by Daracon. In Appendix C Strategic maintenance costs, the allocation of 30% contingency in item 2.5 appears to have errors for allocations for 2020, 2030 and 2045 resulting in a potential under-estimation of the future maintenance costs. This should be reviewed and corrected.**

Based on further details provided by TfNSW, Daracon accepts that an error was made in the future maintenance cost calculations. Daracon has corrected the report to update the contingency costs and strategic cost estimate for CPI. The revised calculations have been provided to TfNSW for their information.

- **Traffic Impact Assessment Section 4.4 – Impact of Generated Traffic. There has been no consideration of traffic impacts at the bridge noting it operates as a one way with give way control. Assessment of the ongoing safe operation of this control point is required, including consideration of potential queuing on approaches in peak times and end of queue management. Mitigation measures should be determined by Daracon in consultation with Council and TfNSW.**

A technical note on the one way operation of the bridge was submitted to TfNSW in 2017. During follow up consultation with TfNSW, mitigation measures were included in relation to the approaches to the bridge, one way signage and associated mitigation measures including changes to the Driver's Code of Conduct and reduced traffic from the quarry.

Updated SIDRA modelling based on 2018 counts collected for the updated TIA has been undertaken and provided to TfNSW.

The existing controls on the bridge allow for one-way movements only with a truck having to give way to a vehicle approaching from the opposite direction. This operation has been assessed with SIDRA and the summary of the results provided in **Table 4.9**. This assessment was then completed allowing for the additional 20 trucks per hour per direction (total 40 movements per hour) associated with the Revised Project.

Table 4.9 SIDRA Assessment – Give Way Control

Scenario	Peak	Level of Service	Delay (seconds)	Queue (metres)
Existing flows	AM	A/A	5.8/0.0	11.2/0.0
	PM	A/A	6.5/0.0	6.9/0.0
Existing flows with the Revised Project	AM	A/A	6.9/0.0	17.8/0.0
	PM	A/A	7.1/0.0	9.8/0.0

Note: results for Eastbound/Westbound movements

The results show that the bridge can continue to operate in an efficient manner with acceptable delays and queues with consideration of the existing traffic movements together with the flows associated with the Revised Project.

- **Daracon proposes upgrades to the approaches to Gostwyck Bridge. The RtS contains a concept plan (Figure 2.17) of the proposed upgrades. Final plans should be prepared by Daracon in consultation with Council and TfNSW.**

Daracon will continue to consult with DSC and TfNSW during the detailed design phase for the proposed upgrade of the Gostwyck Bridge approach.

- **New quarry access road and bridge over the North Coast Railway Corridor**
- **Daracon will be required to enter into an agreement with ARTC as the Rail Infrastructure Manager (RIM) for the new overbridge. Construction and maintenance will be the responsibility of Daracon.**

Noted.

Daracon have an ‘in principle’ agreement with ARTC for the new overbridge. Daracon will continue to consult with ARTC in relation to seeking approval for the final design of the new overbridge, and the schedule for construction.

If the Revised Project is approved and moves to the “design and construction” phase, additional Third Party Works applications will be required to be submitted for review for each stage and ARTC will require Daracon to enter into a Works Licence agreement before physical works can commence.

4.5 Heritage NSW

4.5.1 Aboriginal Cultural Heritage

The Aboriginal Cultural Heritage Management Plan should be prepared in consultation with Registered Aboriginal Parties.

Daracon has committed to the preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) in consultation with Heritage NSW and Registered Aboriginal Parties (RAPs) within 12 months of development consent, should the Revised Project be approved.

In addition, the RAPs will be consulted, and further survey completed, to inform any further mitigation measures required as part of the final design and construction process for the new access road, prior to the commencement of clearing of land (initial ground works).

The arborist report for AHIMS site #38-4-0217 should be submitted to AHIMS and the site feature updated to “not a site”.

The arborist report completed for Item 38-4-0217 was submitted to the then Office of Environment and Heritage (OEH) on 14 June 2016 requesting the AHIMS records be amended. On 16 June 2016, the then OEH confirmed that the site card entry #38-4-0217 has been updated to ‘not a site’. Evidence of this is provided in Annex 6 of the ACHAR appended to the 2016 EIS in Appendix N.

The project boundary assessed in the ACHAR is different to the project boundary in the Response to Submissions report. Any additional areas that have not been assessed will require assessment in accordance with the project SEARs. This may require additional archaeological investigation and consultation with the Registered Aboriginal Parties.

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared by Niche Environmental and Heritage (Niche) in support of the EIS (Monteath & Powys, 2016) for the Original Project, in consultation with the Registered Aboriginal Parties (RAPs) and Knowledge Holder groups to assess the Aboriginal cultural heritage values of the Project Area and surrounds.

As outlined in **Section 1.1**, Daracon committed to a number of key project design changes following detailed analysis of Agency and community feedback on the EIS for the Original Project and subsequent stakeholder engagement. One of the project changes is the construction and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access (refer to **Figure 1.2**). This area was not wholly within the additional disturbance area for the Original Project. It is noted that the additional approximately 2ha area has been subject to previous disturbance associated with the North Coast rail line and Dungog Road.

As outlined in Section 6.12.4 of the ADA Report, the ACHAR concluded that the quarry is in an area of low Aboriginal archaeological potential and the proposed expansion of the quarry is unlikely to harm any known Aboriginal objects or cultural heritage values (Niche, 2016).

Daracon has committed to the preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) within 12 months development consent, should the Revised Project be approved. The ACHMP will be prepared for the quarry in consultation with Heritage NSW and RAPs. In addition, as part of the ACHMP process, the RAPs will be consulted and further survey completed, to inform any further mitigation measures required as part of the final design and construction process for the new access road, prior to the commencement of clearing of land (initial ground works).

4.6 Heritage Council of NSW

4.6.1 Historic Heritage

The subject intersection upgrades are not within a site listed on the State Heritage Register (SHR) but are adjacent to the Royal Oak Arms Hotel (former) (SHR 00141). However, the proposal is not expected to have any adverse physical or visual heritage impacts on the SHR item. No further heritage comments are required. The Department does not need to refer subsequent stages of this proposal to the Heritage Council of NSW.

Noted.

As the proposal may impact local heritage items, advice should be sought from the relevant local council.

Noted.

DSC has provided comment on impact on local heritage items, as outlined in in **Section 4.12**.

4.7 NSW Resource Regulator

4.7.1 Rehabilitation

Based on the review of the report and supporting documents, the Resources Regulator advises that the operation does not propose to extract a scheduled mineral (i.e. igneous rock for aggregate and construction fill) under the Mining Act 1992 and the operation's rehabilitation is therefore not regulated by the Resources Regulator.

Whilst the activity is not regulated by the Resources Regulator under the Mining Act the mine operator has an obligation to comply with the *Work Health and Safety Act 2011* and *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and associated regulations.

Noted.

Daracon will comply with the *Work Health and Safety Act 2011* and *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and associated regulations, as relevant.

4.8 Crown Lands

The Department is currently assessing an application to close the Crown Road located within the project area.

The proposed quarry expansion has been amended so that the Crown Road will no longer be quarried, or subject to any other use of occupation. The Department has no objection to the amended development application.

Noted.

4.9 Department of Primary Industries – Agriculture

4.9.1 Rehabilitation

While the DPI - Agriculture does not have any regulatory involvement in this project, we have undertaken a brief review of this proposal and noted that the project proposal is unclear on the final rehabilitation outcomes for the site that may consider the establishment of native grasslands or exotic pasture in low lying areas (Chapter 14.1.12 Rehabilitation and Land Use).

While the final land use will be further investigated during the development of a Quarry Closure Plan at the final 3 years of the quarry, if an agricultural land use is determined for the final site land use, the rehabilitation plan should address:

- the availability, placement and use of soil to achieve the proposed land use
- the grasses and pasture establishment required to achieve a sustainable groundcover
- a monitoring regime to achieve the final land use over an identified time period to achieve a safe, stable and non-polluting natural looking landform that includes an agricultural functioning system.

As discussed in Section 6.19 of the ADA Report, Daracon is committed to the effective rehabilitation and closure of the quarry at the cessation of operations. Feasible options for final land use would be further investigated during the development and preparation of the Quarry Closure Plan. Should an agricultural land use be considered at that point in time, Daracon will incorporate the above recommendations in Quarry Closure Plan.

4.10 Department of Primary Industries – Fisheries

- Fisheries has no comment

Noted.

4.11 Forestry Corporation of NSW

- Forestry Corporation of NSW (FCNSW) has no comment to make on this project

Noted.

4.12 Dungog Shire Council

4.12.1 Voluntary Planning Agreement

Council is not in receipt of any draft voluntary planning agreement, or any proposed contributions or actions for inclusion in such an agreement, for its consideration.

Daracon has committed to make the relevant financial and/or in-kind contributions to DSC, in the form of a Voluntary Planning Agreement (VPA), in accordance with Section 7.11 of the EP&A Act in the event that development consent is granted.

Daracon has commenced discussions with DSC in this regard, with a meeting held on 31 May 2021 with the DSC's General Manager to discuss the draft VPA. Prior to the meeting, Daracon tabled proposed components of the VPA for discussion which included works in kind and ongoing road maintenance contributions.

Daracon has provided a draft VPA to DSC, which includes:

- contributions towards roadworks in the order of \$2,339,731
- a levy of \$0.25 per tonne of material transported by road to be used towards road maintenance
- a levy of \$0.05 per tonne of material transported by rail to be directed towards and services and infrastructure that directly benefits Martins Creek Village, including the Martins Creek Public School
- contributions towards pedestrian paths and bus shelters in the order of \$180,000
- an annual contribution to the Community Benefits and Wellbeing Fund of \$40,000 per annum, based on proposed production and road haulage rates.

The contributions to be delivered under the VPA are yet to be finalised through negotiations with DSC.

4.12.2 Traffic and Transport

The following issues have not been adequately addressed through the application:

- **Increased deterioration of Council's Road Networks - up to 100% of all Class 9 Heavy Vehicles on Dungog Road south of the quarry will be generated by this development;**
- **Reduction in current pavement design lives;**
- **Increases in pavement rehabilitation costs due to increased traffic loadings;**
- **Insufficient detail and apparent underestimation of costs for Capital Works at intersections as identified by the applicant;**
- **Lack of information with respect to calculation of haul road contributions and inadequate haul road contributions;**
- **Several sections of the haul route (including Dungog Road and Gresford Road) have extremely poor surface conditions which will require immediate rehabilitation/reconstruction.**

As outlined in Section 6.3.3 of the ADA Report, a comprehensive road pavement report was prepared by SMEC (2021) (refer to Appendix L of the ADA Report) and provides detailed analysis of the expected contribution that proposed quarry haulage will make to road pavement deterioration, based on maximum proposed haulage volumes. This report provides detail on current road pavement design lives and pavement maintenance costs due to increased traffic loading, to inform the process of determining relevant road maintenance contributions for Maitland and Dungog LGA's.

A pavement condition survey was undertaken in November 2018 to assess the current condition of the southbound lanes of the haul route. The condition survey showed that, although much of the haul route is in fair to good condition, there is also a proportion of the route that is in poor to very poor condition. It further indicates that the Maitland LGA section of the proposed haul route tends to be in better condition and have stronger pavements as compared to the section of the proposed haul route in Dungog LGA (SMEC, 2021).

As noted in **Section 4.12.1** Daracon will contribute towards road maintenance and pavement upgrades with relevant financial and/or in-kind contributions to DSC under a proposed VPA .

As outlined in the response in **Section 4.12.1**, Daracon has commenced discussions with DSC in this regard, with a meeting held on 31 May 2021 with the DSC's General Manager to discuss the draft VPA. Prior to the meeting, Daracon tabled proposed components of the VPA for discussion which included works in kind and ongoing road maintenance contributions. Daracon has now delivered a draft VPA to DSC for consideration.

- **Sight distance may be an issue at the proposed intersection of the internal haul route with Dungog Road;**
- **Matters arising from the over-dimension access route (separate from the Haul Route) have not been identified nor discussed within the reports;**

As part of the Revised Project, the location and design of the proposed intersection on Dungog Road has been refined in consultation with DSC and generally in accordance with Austroads Standards. The new intersection allows for a sheltered right turn lane on Dungog Road to enable the new access to operate in a safe and appropriate manner.

Comment has been sought from DSC in regards to the proposed designs. DSC's Design Manager has not highlighted any concerns or issues associated with the geometrical design outcomes to date. Queries from DSC have related to:

- completing as built survey level checks for the recently upgraded section of Dungog Road
- land to be dedicated as road reserve
- road maintenance responsibilities
- boundary definition and location of gates at the front of the property.

The design of the proposed intersection with Dungog Road has been undertaken to tie into the recently completed Dungog Road upgrade works.

During final design, Daracon will continue to consult with DSC regarding the design of the intersection.

In regard to over-dimension vehicles, Daracon may on occasion need larger vehicles, including low loader floats for moving heavy machinery on and off site as required. Oversized movements are envisaged to be less than once per month once quarry operations are re-established. Oversize movements for associated construction works would generally consist of 4-6 movements at each location including mobilisation of graders, dozers and excavators and rollers.

Over size and/or over mass vehicles may be required infrequently and would be subject to separate specific permits from TfNSW and DSC. Over size/over mass vehicles will use the new access, subject to relevant approvals. As the new site intersection on Dungog Road will be designed and constructed generally in accordance with Austroads Guidelines, safe access to the quarry will be provided whilst catering for safe through traffic movements.

It is noted that over mass movements have been carried out to and from the quarry for decades, with approval required and given from DSC and TfNSW on each occasion. The same route will generally be used until upgrades to the entry to the quarry are operational at which time these truck movements are not required to go through the village of Martins Creek. If the Revised Project is approved, there is expected to be less over mass movements as operations would be more consistent rather than campaign based.

Inadequate responses to a number of road access and safety concerns including:

- **The intersection of Grace Avenue/Station Street/Rail Crossing - This intersection has been identified by both Council and the ARTC as requiring safety upgrades. Lack of available funding from the ARTC is the only reason works have not been undertaken. Whilst this intersection and crossing is projected to be abandoned within four (4) years as far as being part of the identified haul route is concerned, no consideration is given to interim measures;**

The safety issues associated with this crossing relate to sight lines over the crest created by the railway line together with the overall vertical alignment of the road. The eye height for the truck drivers associated with the subject site allow a driver to see over the railway line and observe traffic movements on Grace Avenue. On-going maintenance of the vegetation in this location will ensure that these sight lines are maintained. The crossing includes advanced signage in both directions and flashing red lights on the approaches. No interim works measures are considered to be required.

There have been no recorded accidents at this location over the 5 year accident history and no incidents with quarry vehicles.

Additionally, Daracon will make relevant financial and/or in-kind contributions to DSC, under a proposed VPA in order to upgrade Station Street.

- **The rehabilitation/reconstruction of Station Street which continues to be significantly impacted by the Martins Creek Quarry operations;**

While negotiations have not yet been completed, Daracon has offered to contribute to road maintenance of Station Street under the proposed VPA with DSC, including carrying out overlay works at the commencement of operations and an ongoing contribution towards maintenance of the road.

- **Paterson Rail Crossing - Congestion on the northern side of the crossing is already problematic with respect to the blind crest on the approach to the crossing. The need for advanced warning for a closed rail crossing has not been adequately addressed;**

The TIA for the Revised Project has not identified queuing at the Paterson rail crossing as an issue for DSC and ARTC. Queuing at the Paterson rail crossing on the approach to the crossing is not anticipated to be significantly exacerbated by the Revised Project.

It is understood that the reduced speed limit sign is appropriately placed to provide adequate deceleration prior to the blind crest. The elevated driving height of truck drivers will provide improved visibility for truck drivers approaching the rail crossing, while the height of the trucks will make them more visible to approaching drivers should there be a delay at the rail crossing.

As part of the Code of Conduct, truck drivers will be made aware of the route and the upcoming rail crossing.

As previously outlined, Daracon will enter into a VPA with DSC for the Revised Project. DSC may direct funds associated with the VPA to the implementation of an advanced warning system should they choose.

- **The narrow section of Duke Street and site distance issues at the Prince Street and Duke Street intersection;**

Design considerations have been prepared for the upgrade of Duke Street and King Street in Paterson for consideration by the road authority. These have also been tabled and discussed in the public forums.

The sight distance issues at Prince Street and Duke Street are created by the wall constructed to the property boundary and vegetation fronting Duke Street and is the responsibility of the road authority. The wall on the property restricts the sight line for a driver looking right when exiting the side road. Whilst normal design practice requires a property boundary to be set back from the edge of the road the historic design here has the wall located close to the edge of the road carriageway.

The Code of Conduct will require trucks to travel at a 40kmh speed limit as part of the Code of Conduct for trucks travelling through the section of Duke Street at the Prince Street and Duke Street intersection. The review of TfNSW accident data has not highlighted any recorded accidents at this location in the past 5 years.

- **Pedestrian Safety - Crossings of King and Duke Streets for pedestrian safety has not been adequately addressed;**

Design considerations have been prepared for the upgrade of Duke Street and King Street in Paterson for consideration by the road authority. These have also been tabled and discussed in the public forums. These include pedestrian crossing options on King Street and Duke Street.

Daracon considered alternative design options for the proposed upgrade of King and Duke Street intersection in Paterson. This included Daracon's initially preferred option with a pedestrian crossing on King Street, providing pedestrian linkage at the intersection.

During the Traffic CAFs, there was no agreement in the feedback on the locations of pedestrian crossings or even the utility of inclusion of pedestrian crossings as part of road enhancements that may assist with public safety issues and minimising impacts on local businesses. However, during one of the Social CAF sessions, there were a number of stakeholders that supported the inclusion of a pedestrian crossing in the design.

While previous consultation with TfNSW indicates that Paterson does not meet the criteria for a pedestrian crossing and no particular option (i.e. crosswalk vs no crosswalk) has been supported during consultation activities to date, Daracon have proposed this as an option and would be supportive of contributing to the establishment of a pedestrian crossing in Paterson, or other works to upgrade pedestrian amenity, should DSC approve it as a part of the VPA considerations, and TfNSW approve these measures, as relevant. To this end, the draft VPA includes monetary contribution of approximately \$50,000 for two pedestrian crossings and signage on King Street and Duke Street intersection, and any approval for the works under the Roads Act or other works to upgrade or improve pedestrian amenity as determined by DSC.

- **Gostwyck Bridge Single Lane - Whilst the RMS have identified that the bridge can meet load standards, the alignment and lack of sight distance for traffic to “Give Way” is an ongoing concern;**

Daracon has offered to contribute to road improvement works as proposed as part of the Revised Project to alleviate existing road safety concerns and improve traffic flow. As outlined in Section 2.8.2 of the ADA Report, Daracon propose to update the approach to the Gostwyck Bridge. The upgrade will include:

- realignment of Dungog Road, incorporating a series of curves to raise driver awareness and associated new line marking
- installation of Vehicle Activated Signage alerting drivers approaching the bridge to reduce speed
- relocation of existing hazard signage
- removal of redundant signage
- modification of existing property accesses as required on either side of Dungog Road.

In addition, as outlined in **Section 4.4.1**, if development consent is granted for the Revised Project, Daracon agree to fund the design and installation of a 200mm x 200mm timber kerb on Gostwyck Bridge maintaining a 3.5 m travel lane. The final design of the kerb will be subject to TfNSW approval.

- **Pavement Widths - Some sections of the identified haul routes have insufficient pavement widths for the design traffic loadings. Rehabilitation costs identified within the reports do not allow for required width increases;**
- **Clear Zones - There is insufficient shoulder widths and clearzones on considerable lengths of the identified haul routes. Rehabilitation costs identified within the reports do not allow for required shoulder increases or clearzone creation;**

Overall, the current road network is assessed to be generally satisfactory for road safety issues. The existing road network is typical of a rural road standard and currently carries a wide mixture of vehicles including quarry trucks other than Martins Creek. The current road layout does not conform with the Austroads requirements in a number of locations with regard to the alignment and road corridor width / clear zones. However, the accident data provided by TfNSW shows that the overall number of accidents along the haul route are low with no accidents identified to be associated with the operations at the quarry.

The TIA (refer to Appendix C of the ADA Report) does identify key road network issues, including lack of pavement width on Tocal Road at Bolwarra Heights. The TIA however notes that works were completed in this section (early 2016 and 2019) to improve delineation and includes an off-road footway / cycleway on the eastern side of the road.

As noted above, Daracon has commenced negotiations with DSC in regard to the draft VPA. As part of the VPA, Daracon will contribute towards road maintenance and pavement upgrades for impacts on the road pavement resulting from the transport of product from the Revised Project, should the Revised Project be approved.

- **Overtaking Areas - Whilst the reports identify the lack of suitable overtaking areas, no consideration is made to provide such;**

Section 2.4 of the TIA for the Revised Project reviewed the existing road network and traffic conditions.

While the TIA indicates that no overtaking lanes are provided for sections of the haul route, the TIA did not identify the requirements for any additional overtaking lanes. The trucks operated by the quarry can travel at the posted speed limit and as such there are minimal delays created by slow moving quarry trucks along this route.

Proposed intersection upgrades will also include acceleration and deceleration lanes, as appropriate.

- **Flood Free Access - The main haul route through Paterson has three (3) identified areas where flooding occurs. Alternate flood free access or quarry processes in times of flood have not been addressed;**

Should there be flood conditions, it is likely that the quarry operations will be restricted, as to the market demand. Except to supply material for emergency government flood rectification works, there would be no haulage in the event of flood condition. In these circumstances, Daracon would consult with the relevant authority to manage the process.

Increased whole of life cost for Haul Route 1 has not been sufficiently addressed due to:

- **Insufficient detail being provided for the scenarios and treatment types and locations utilised to identify future works on Haul Route 1 over the next 25 years;**
- **The exclusion of improvements relating to pavement width, sealing unsealed shoulders, drainage improvements, intersection improvements and geometry improvements as it has been assumed these would be done regardless of Quarry Traffic. This is not supported as traffic generated by the Quarry is a significant factor for these improvements;**
- **The calculated increase in cost (\$0.017/t/km or \$110,367pa) is significantly less than the figure identified in Council's Contributions Plan for Heavy Haulage Generated by Extractive Industries 2017 (\$0.054/t/km or \$344,250pa). It is therefore Council's position that insufficient detail has been provided to support the predicted extra cost for maintenance and rehabilitation of Haul Route 1. If approved based on the documents provided, this will leave a predicted shortfall in contributions of almost \$234,000 per annum which will need to be funded by Council's ratepayers and tax payers.**

As noted above, Daracon has commenced negotiations with DSC in regard to the draft VPA. As part of the VPA, Daracon will contribute towards road maintenance and pavement upgrades for impacts on the road pavement resulting from the transport of product from the Revised Project. The draft VPA offered by Daracon includes a proposed road maintenance levy of \$0.25 per tonne product moved by road from the quarry.

It is Council's view that the community should not be subjected to increased impacts as a result of road haulage and therefore it is Council's position that road haulage associated with the future quarry operations should not exceed 150,000tpa. This is based on 500,000 tpa being the current maximum extraction permitted under the Environment Protection Licence and not more than 30% of that being hauled by road. Further, on the basis of a maximum haulage by road of 150,000 tpa, the maximum truck movements per day should be restricted to 60 (30 Loaded).

DSC's position is noted.

As outlined in Section 2.12.1 of the ADA Report, Daracon has considered options for alternative haulage and volumes. As a result, the Revised Project's daily peak laden trucks per day is proposed to be a peak of 140 per day (280 movements) for 50 days per year, otherwise 100 laden trucks per day (200 movements) and a peak of 20 to 15 laden trucks per hour (40 to 30 movements depending on time of day) to meet campaign requirements to service large regional construction projects, from time to time. In response to community concerns, Daracon have also reduced the frequency of truck movements to a peak of 15 laden trucks per hour between 3.00 pm and 6.00 pm. The reduction to 15 laden trucks per hour between 3.00 pm and 6.00 pm aims to further ameliorate traffic impacts during higher activity in Paterson village and interactions with school finishing times. The average daily truck movements associated with the Revised Project will be much lower than the peak, and the number of days this is likely to occur will also in effect be capped by the 500,000 tpa limit for transport by road.

The opportunity to avoid any road haulage of quarry product, and transporting all quarry product by rail, has often been raised during the community engagement process. Whilst Daracon now propose to significantly reduce the proportion of quarry product delivered by road, it is not feasible to continue quarry operations with no road haulage, and have all the quarry product transported by rail. Whilst Daracon are committed to continuing to investigate opportunities to minimise the need for road haulage to supply regional markets, it is not currently feasible. The ability of the quarry to increase rail distribution of aggregates within its current distribution area is limited by the lack of suitable rail unloading facilities, large number of product destinations and types, short haulage distances and the fact that a number of competing quarries use the road system as a more commercially viable and flexible supply to service the same markets.

It is acknowledged that the Social Impact Assessment (SIA) (Umwelt, 2021c) (provided in Appendix O of the ADA Report) undertaken for the Revised Project predicts there will be key negative social impacts relating to social amenity, mainly due to traffic related impacts, and changes to the sense of community and community cohesion and culture. Throughout the ADA and SIA process, a range of project design changes have been implemented to attempt to address these key issues, together with a range of strategies, management and mitigation measures that have been identified, where possible, to minimise social impacts of the Revised Project. Given Daracon's approach of reviewing the Revised Project design to minimise impacts, the social impacts of the Revised Project have been reduced where possible through project design and the proposed management and enhancement approaches.

The target resource of the quarry has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The quarry has historically produced two unique hard rock products to satisfy specific TfNSW/RMS road building specifications. These materials are considered especially important for the construction of heavily trafficked roads and supply of these would assist in the objectives of the NSW and Federal governments to improved regional infrastructure and transport networks.

The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high-quality products, with access to main road and rail transport.

4.12.3 Planning Instruments and Strategies

Council understands that the Department will have due regard in their assessment to the relevant Environmental Planning Instruments, specifically Dungog LEP 2014 and its aims and objectives as well as other strategic planning documents that regulate and inform the future development of the Dungog LGA.

Noted. Section 4.2.2.1 of the ADA Report considers the Dungog LEP, with other relevant strategic regional policies considered in Section 4.2.5 of the ADA Report.

4.12.4 Noise

The noise impacts both within the project area and generated offsite e.g. on the road network, are a major source of concern to Council and residents. Due to the critical nature of this aspect of the application Council has engaged a recognised Acoustic Consultant to review the Noise Impact Assessment (NIA) which forms part of the Amended Report and Response to Submissions. Council is particularly concerned as to how the NIA has determined background noise levels given the history of unlawful operations at the quarry. The outcome of the peer review will be forwarded to DPIE as soon as possible.

Noted.

A peer review commissioned by DSC was received on 30 September 2021. The peer review comments and responses are provided in **Appendix 8**.

The peer review commissioned by DSC has not found technical fault with the NIA or departure from the NSW government approved methods for the assessment of industrial noise, road traffic noise or rail noise.

4.12.5 Air Quality

Council's submission to the original proposal requested that the impacts of road dust and diesel emissions on the residents of Paterson (and other residential communities adjacent to transport routes) be addressed. It is noted in the response to submissions that these elements have been included in the Air Quality Impact Assessment.

The Air Quality Impact Assessment concludes that the Revised Project can proceed without causing adverse air quality impacts at private sensitive receptors, although the experience of a number of residents differs from this conclusion. As Council does not have specialist staff who can verify the assumptions used in the modelling nor the methodology of the Air Quality Impact Assessment, it is requested that DPIE ensure that the current Air Quality Impact Assessment is thoroughly reviewed and assessed by NSW Health and the NSW Environment Protection Authority having regard to both potential health and environmental impacts of the quarry.

Refer to **Section 4.1.2** for the EPA submission regarding the AQIA that was undertaken for the Revised Project and the corresponding response. The EPA has not made any comment on this issue.

NSW Health has not made a submission on the Revised Project.

4.12.6 Blasting

The information submitted with the application suggests that blasting at Martins Creek Quarry has demonstrated compliance with relevant assessment criteria and that the blast criteria can also be achieved for the proposed project. However, the lived experience for a number of residents is that blasting does cause detrimental impacts. These include excessive noise and vibration, which they believe has caused their dwellings and outbuildings to be structurally compromised. Should the development proceed, these impacts would need to be managed through compliance with the relevant blasting criteria and by establishing baseline information on the condition of buildings and structures on private property to enable claims of property.

A detailed Blast Impact Assessment (BIA) (Bellairs, 2021) was completed for the Revised Project (refer to Appendix G of the ADA Report). The results of the BIA indicate that ground vibration and blast overpressure levels can be managed to meet relevant blast emission criteria at all sensitive receiver locations through appropriate blast design and the implementation of appropriate control measures.

Daracon has a demonstrated track record of managing blasting impacts as discussed in Section 6.7 of the ADA Report and each blast will be designed to comply with the relevant criteria. Further, the design practice at Daracon incorporates a factor of safety to provide for unexpected conditions (that is, blasts are designed to result in impacts below the limit, not on the limit).

As outlined in Section 6.7.3 of the ADA Report, independent monitoring of blast induced vibration and air overpressure has also been undertaken on two separate occasions without the knowledge of Daracon about the time of the monitoring, and involved:

- Daracon commissioned a specialist blast monitoring company to undertake an independent blast monitoring audit. The results confirmed the quarry blast monitoring data for the blast monitored.
- The second and far more extensive monitoring audit was conducted by the EPA, which included monitoring of 13 separate blasts from the quarry during 29 March 2018 to 27 August 2018 at a location in View Street, Vacy. The EPA found that the vibration and overpressure monitoring undertaken during the EPA's review period was appropriate for complying with the conditions of the EPL, with no breaches of the EPL limits or conditions.

In addition, Lindsay Dynan Consulting Engineers were engaged to undertake inspections, monitoring and reporting relating to blast vibrations from the quarry. A representative structure (residential dwelling) was selected for the blast monitoring assessment, being 24 View Street, Vacy due to its proximity to the quarry and for its typical residential construction style. The assessment indicated that the peak particle velocity of the measured blast was of a magnitude 10 to 20 times lower than the levels likely to cause damage to residential properties. The assessment found that the dwelling at 24 View Street, Vacy has not been damaged by the blasting operations at the quarry. Similarly, due to the representative selection of the property, and its proximity to the quarry, it is considered unlikely that any other residential buildings, located in View Street, Vacy, have been damaged due to the blasting operations at the quarry (Lindsay Dynan, 2019).

As part of the Revised Project, Daracon has committed to the implementation of a range of blasting controls and management measures, should the project be approved. This will include the development of a Blast Management Plan (BMP) in consultation with the EPA. The BMP would be implemented for the Revised Project, together with further measures detailed in Section 8.1.8 of the ADA Report.

Daracon has further committed to independent blast monitoring to be undertaken for three blasts within the first year of the Revised Project by an independent qualified person, and in consultation with the EPA. Daracon will consult with the Martins Creek CCC and/or representative of DSC in relation the monitoring times and locations.

Daracon commit to structural assessment of any privately-owned land within 500 metres of the approved quarry pit to establish the baseline condition of any buildings and structures on their land, if a written request is received from the owner.

Daracon will commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:

- establish the baseline condition of any buildings and other structures on the land
- identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures
- give the landowner a copy of the property inspection report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or Daracon or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Planning Secretary for resolution.

4.12.7 Water Resources

Council does not have the expertise to provide technical feedback in relation to groundwater impacts. Council requests that the Groundwater Impact Assessment be assessed by DPIE – Water and the Natural Resource Access Regulator (NRAR) having regard to the proposed amendments, current legislative requirements and the previous comments provided by NSW Department of Industry dated 24 November 2016 in response to the original SSDA.

Refer to **Section 4.2** for the DPIE Water and NRAR submission relating to water resources and the corresponding responses.

In terms of surface water, Council understands that the discharge of waste waters will be controlled under an Environmental Protection License (EPL). Consideration should also be given to whether the proposed development would have any impact on the Lower Hunter Water Plan that is currently under review.

The Lower Hunter Water Plan (LHWP) was developed in 2014 as a collaborative effort among NSW water agencies. LHWP (2014) development was led by the Metropolitan Water Directorate in the Department of Finance and Services in consultation with Hunter Water Corporation (HWC) and other government agencies responsible for water management. The purpose of the LHWP (2014) is to make sure the people of the Lower Hunter have enough water to meet their needs for the medium term, including being able to withstand a drought much more severe than previously recorded in the region, as well as protecting the health of the river systems in the region that are impacted by the water supply system.

The draft Lower Hunter Water Security Plan (LHWSP), largely prepared by HWC, was released for public comment in August 2021 and will supersede the LHPW when finalised. The LHWSP aims to ensure a secure supply of water to homes, business and industry in the Lower Hunter region. Four strategic priorities were identified as part of the LHWSP development:

- Priority 1: Safe drinking water
- Priority 2: Making the most of what we've got
- Priority 3: Improving the reliance of the system
- Priority 4: Water for life.

Under the existing lower hunter water supply scheme, the quarry does not impact on regional raw water supply and therefore does not impact the safety of drinking water (i.e. potential impacts on raw water quality) or runoff yields in drinking water catchments. However, the draft LHWSP does indicate the potential for a new raw water offtake for drinking water treatment plant supply from the Paterson River near Paterson. While it is noted that this new raw water offtake has only been the subject of early investigations by HWC and is not listed in the draft LHWSP Priority 3 actions, if realised, the offtake would be downstream of the quarry and subject to potential impacts from quarry discharges. As noted by DSC, quarry discharges are controlled under the quarry EPL and the EPL discharge water quality monitoring data presented in the SWIA in Appendix I of the ADA (Umwelt, 2021a) demonstrates the quarry consistently complies with EPL water quality limit conditions. Further, the water quality monitoring data for the Allyn River upstream of the quarry and the Paterson River downstream of the quarry presented in the SWIA do not indicate any measurable impacts on downstream Paterson River water quality.

The quarry extension proposed as part of the Revised Project will result in the interception of additional catchment that currently drains to the Paterson River. Runoff from the additional undisturbed upslope catchment to be intercepted by the quarry extension will be licensed in accordance with the requirements of the *Water Management Act 2000* and the *Water Management (General) Regulation 2018*. The quarry location is within the Paterson/Allyn Rivers Water Source which is covered by the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources. Shares in the Paterson/Allyn Rivers Water Source are fully allocated and therefore Daracon will be required to purchase surface water entitlement from existing licenced shareholders. As such, the loss of flows from upslope undisturbed catchment runoff from the quarry extension will result in the restoration of flows to the Paterson River at another location (or other locations) in the Paterson/Allyn Rivers Water Source catchment.

Potable water demands at the quarry are predicted to increase with the proposed increase in production. Daracon has committed to developing and implementing a potable water use reduction strategy should the Revised Project be approved. This commitment is consistent with Priority 2 of the draft LHWSP. Further, there is potential for the water stored in final voids that will remain following quarry closure to be utilised for an alternate beneficial use. The long term void water use strategy would be resolved as part of a detailed quarry closure plan to commence at least three years prior to the anticipated quarry closure date (refer to **Appendix 2** for closure planning commitments).

4.12.8 Biodiversity

The proposed development would result in the disturbance of an additional 21-22 ha (approximately) of native vegetation from within the Project Area. Dungog Council does not have an ecologist on staff to review the Biodiversity Assessment Report and therefore will rely on the Biodiversity and Conservation Division of the Environment, Energy and Science (EES) Group of DPIE to determine the adequacy of the assessment reports that have been submitted.

Noted.

Refer to **Section 4.3** for the BCD submission and corresponding responses.

However, Council remains concerned that the proposed development has been identified as being likely to have a significant impact on the threatened Koala and Slaty Red Gum. Further, as detailed in Council's submission regarding the original project, the extent of native vegetation disturbance is only based on the areas outside of the existing operational quarry footprint (page 17 of the Biodiversity Assessment Report). Therefore, the cleared lands within Lot 6 DP244210 which is the result of previous unlawful quarry operations have not been considered in any biodiversity impacts.

Past clearing of native vegetation is not required to be retrospectively assessed as part of a development application for proposed development that includes additional land clearing. Past clearing of native vegetation, whether lawful or unlawful, is relevant to determining the cumulative impact that might arise from additional land clearing on biodiversity values. The BAR considers the extent of ecological communities and habitat remaining in the locality in determining the potential significance of impacts associated with the Revised Project.

The BAR considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the *NSW Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects* (FBA).

The construction and operation of the Revised Project will result in a range of direct impacts on biodiversity values within the proposed disturbance footprint of the Revised Project.

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS, included in Appendix J of the ADA Report, has been prepared in accordance with the Stage 3 requirements of the FBA (NSW OEH 2014a), the Biobanking Assessment Methodology (BAM) (NSW OEH 2014b) and the NSW Biodiversity Offsets Policy for Major Projects (NSW OEH 2014c). The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

In relation to the Koala, the report states that under *State Environmental Planning Policy (Koala Habitat Protection) 2020*, the site is likely to contain Core Koala Habitat as a resident population of the Koala is considered to be present. The report proceeds to recommend that should the project be approved, a Management Plan should be prepared to provide measures for the management of Koalas on site, in keeping with the intent of the SEPP. This recommendation does not appear to have been carried over into the Amended Development Application and Response to Submissions document, nor any of the specific mitigation measures for the proposal. Council is of the view that a plan of management (or equivalent) for the protection of koala habitat should be prepared in accordance with the guidelines accompanying the SEPP.

Daracon commits to the preparation of a Koala Plan of Management, or equivalent, for the quarry in accordance with the *State Environmental Planning Policy (Koala Habitat Protection) 2020*. An updated statement of commitments is provided in **Appendix 2**.

In terms of impacts on other threatened species, it is noted that the Biodiversity Offset Strategy indicates the potential for biodiversity offset sites totalling 58.35 hectares to be established within the vicinity of the quarry. This would generate species credits for the following threatened species:

- **Slaty Red Gum (*Eucalyptus glaucina*)**
- **Brush-tailed Phascogale (*Phascogale tapoatafa*)**
- **Koala (*Phascolarctos cinereus*)**
- **Southern Myotis (*Myotis macropus*)**

As outlined above, Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project.

The BOS may include land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites. The BOS may also include a combination of purchasing credits from the market, and/or paying into the Biodiversity Conservation Fund. The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act.

Should the project go ahead, Council would encourage the use of local offset sites in the first instance to ensure that local biodiversity and habitat areas are retained within the Shire.

DSC's request is noted.

4.12.9 Visual and Final Landform

Section 6.17 of the amended report addresses visual amenity, while Section 6.19 addresses the rehabilitation and final landform. Both of these utilise a series of cross sections in an attempt to illustrate the visual impact of the quarry during operations and following rehabilitation. The cross sections provided are ineffective and do not provide a clear representation of the visual impact of the proposal. A series of photomontages should be provided to assist in assessing the visual impact of the proposal and the proposed final landform.

A comprehensive Landscape and Visual Impact Assessment (LVIA) for the Original Project was prepared by Moir Landscape Architects (Moir), in accordance with the SEARs and DSC's relevant guidelines. The SEARs required an assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to the creation of any new landforms (noise bunds and embankments, as well as new stockpile areas). The LVIA included photomontages.

As outlined in **Section 1.1**, the Revised Project has resulted in a reduction in the scale of the quarry compared to that proposed under the Original Project. Section 6.17 of the ADA Report was not intended to be a full visual assessment, rather it aimed to reconfirm the findings of the LVIA (Moir, 2016) and assess any potential changes to the visual impacts of the Revised Project.

Based on the findings of the LVIA for the Original Project (refer to Section 6.17.2 of the ADA Report), it is expected that the visual impact of the Revised Project would be considerably reduced as a result of the design changes. This was confirmed by the outcomes of the updated analysis undertaken for the Revised Project.

Generally, due to undulating topography and existing vegetation which characterises the local area, there are limited opportunities to view the quarry from areas within the immediate vicinity of the quarry.

The highest visual impact is likely to be felt from the west, where views to the existing quarry are currently available. Views are likely to be available to motorists and residences associated with Gresford Road. Rural residences located on cleared, slightly sloping land associated with the foothills of Mount Johnstone generally have expansive views to the east across the landscape towards the quarry. Photomontage 04 from the LVIA provides an example of the extent of the previously proposed expansion which is likely to be visible from Gresford Road. Under the Revised Project, the potential impacts will be consistent but reduced from that view.

4.12.10 Historic Heritage

Council's submission to the original application noted insufficient consideration of physical works and increased truck movements within the Paterson Heritage Conservation Area as well as potential impacts on various heritage items along the haul route. It is noted that a revised Heritage Impact Statement has been prepared, which considers these issues.

Council remains concerned about the impacts of heavy truck movements through Paterson and the impact that this may have on the character of the Heritage Conservation area and its impact on residents, tourists and visitors.

Noted.

As identified by DSC's submission to the original application, a Heritage Impact Statement (HIS) was completed to assess the potential heritage impacts associated with the Revised Project's primary haulage route. Specifically, this included:

- potential vibration impacts (if any) of the proposed number and frequency of trucks on the structural integrity of listed heritage items
- potential impacts to the significance of the conservation area as a result of the number and frequency of trucks travelling through a conservation area
- the impacts of proposed intersection and bridge approach upgrade works on the curtilage and significance of listed items and any conservation areas.

The scope for the HIS was tailored to the above to specifically address the request for additional assessment contained within the submissions received from DSC, DPIE, Heritage NSW and the Paterson Progress Association (PPA).

The HIS concluded that the implementation of mitigation measures outlined in Section 6.11.4 of the ADA Report is expected to prevent any impacts on heritage values (including minor cosmetic damage) associated with quarry truck movements.

Heritage NSW has not raised any concerns in relation to impacts of heavy truck movements through Paterson or the impact that this may have on the character of the HCA.

4.12.11 Social

The applicant was required as part of the previous response to submissions document to undertake more community consultation to better inform the revised Social Impact Assessment. This assessment remains one of the most controversial components of the application, Council still has significant concerns regarding the rankings and findings within the revised SIA and require additional technical advice before providing informed commentary on this crucial aspect of the amended application.

Once a comprehensive review has been finalised comments relating to the revised SIA will be forwarded to the Department in tandem with the independent assessment of the Acoustic Report.

Noted.

A Socio-economic peer review commissioned by DSC was received on 2 September 2021. This peer review included comments and queries with regards to the social baseline used and associated baseline impacts and the social risk assessment framework adopted within the SIA (Umwelt, 2021c). An alternative assessment of potential social impacts was also provided.

The peer review comments and responses are provided in **Appendix 4**.

4.12.12 Economics

As discussed above, a Socio-economic peer review commissioned by DSC was received on 2 September 2021. The peer review included comments and queries with regards to the Economic Impact Assessment (EIA) completed for the Revised Project.

Peer review comments and responses are provided in **Section 4.12.12.1**.

Contrary to these assertions, Council considers there is a strong probability that the Revised Project would create significant direct and indirect costs to the Shire over its lifetime, and that the character of the Martins Creek and Paterson communities would be impacted, most likely affecting several sectors such as retail and hospitality/tourism.

It is understood that tourism is a key industry sector for Dungog LGA.

As outlined in the SIA (Umwelt, 2021c) (Appendix O of the ADA Report), consultation with businesses, particularly those within Paterson, centred on concerns regarding the impact of the Revised Project on their business operations and livelihoods. Consulted community members felt that the Revised Project and associated trucks were causing decline of business in Paterson due to noise, increased safety issues, decreased ability to walk around village and issues with parking. These impacts were seen to cause a reduction in the amenity of the village and deterring people from shopping in Paterson.

Community members and business owners also noted the impact that the Revised Project had on hospitality and tourism related businesses in the area, again particularly for the village of Paterson. With one accommodation provider referring specifically to negative reviews being posted online in regard to their business.

With respect to tourism impacts, an analysis of visitor reviews posted on Tripadvisor from 2012 to 2020 indicates a small number of comments noting customer dissatisfaction with their stay specifically due to truck traffic within Paterson, however these appear to be evenly interspersed with guests either commenting favourably on their experience or for those making a negative review, also noting other noise sources (such as trains) and other reasons for dissatisfaction with their stay.

While not to detract from the importance and potential impact of complaints to a business, the examination of historical customer reviews has indicated that the majority of the reviews published on TripAdvisor positively rating their experience – 19 out of 32 reviews rated as excellent with the large majority of these made prior to reduced operations at the quarry in September 2019.

As outlined in the SIA (Umwelt, 2021c) (Appendix O of the ADA Report), Daracon have attempted to respond to community concerns in relation to potential impacts on local tourism and local businesses through project design changes and mitigation measures.

Tourism has continued in Paterson and the surrounding areas while road haulage has been undertaken. As discussed in the ADA Report, the proposed road haulage will at similar levels experienced prior to 2010 at which levels, parts of the community have indicated was acceptable at the time. In addition, the Revised Project has reduced road haulage times during week days, and proposes no road haulage on weekends or public holidays.

Community identified mitigation and management measures regarding management of possible impacts have been summarised at **Table 4.10** along with Daracon proposed onsite management strategies for the Revised Project.

Table 4.10 Summary of Mitigation and Enhancement Strategies – Local Business and Livelihood

Impact Theme(s)	Community Identified Mitigation Measures	Proposed Mitigation and Enhancement Strategies
Local Business and Livelihood	<ul style="list-style-type: none"> Reduced truck movements Local business support, e.g. utilising local businesses for catering bookings, fuel purchases, sponsorships Local business branding signage Pedestrian crossing in Paterson Shared pathways / footpaths 	<ul style="list-style-type: none"> No road haulage of quarry product on a Saturday Limited truck movements between 3-6pm week days Haulage to be limited when there are large planned community events Local employment and procurement policy to enable encouraging supporting businesses and recruiting locally where possible Local investment in key community enhancement projects in Martins Creek and Paterson via the Community Contributions and Sponsorship program, e.g. Paterson and Martins Creek Village entry signs, village beautification projects

In addition to the above measures, while previous consultation with TfNSW indicates that Paterson does not meet the criteria for a pedestrian crossing and no particular option (i.e. crosswalk vs no crosswalk) has been supported during consultation activities to date, Daracon have proposed this as an option and would be supportive of contributing to the establishment of a pedestrian crossing in Paterson, or other works to upgrade pedestrian amenity, should DSC approve it as a part of the VPA considerations, and TfNSW approve these measures, as relevant.

Contribution towards footpath/cycleway works enhance pedestrian safety and mobility within the township of Paterson has also been proposed as part of the Planning Agreement with the DSC.

While the Revised Project may offer some economic benefits in terms of employment opportunities for local residents and regional suppliers (fuel, fleet maintenance costs, other purchases) these are limited, Council is concerned that the costs associated with its operation may be significant, not only from a financial basis for Council but from a social and economic perspective for affected residents and local businesses.

Major resource projects can make significant social and economic contributions to communities that extend far beyond the location in which a particular operation is based. For instance, the presence of an operation can provide economic contributions to communities through indirect impacts such as employees' household expenditure. Employees (and their families) may also contribute to communities through their participation in community groups and activities, or through their use of health and education services. Likewise, indirect benefits may be experienced in communities where suppliers' head offices are located or where suppliers' business expenditure is undertaken.

An Economic Impact Assessment has been completed for the Revised Project in accordance with the Guidelines for the economic assessment of mining and coal seam gas proposals (NSW Government 2015) and involved a Cost Benefit Analysis (CBA) and a Local Effects Analysis (LEA). The Economic Impact Assessment for the Revised Project (Appendix P of the ADA Report) describes a range of positive benefits from the Revised Project that will result at a local, regional and State level. These benefits include:

- continued employment of approximately 22 full time equivalent employees
- the Revised Project is estimated to provide a net benefit of \$58 million to NSW, in NPV terms
- the Revised Project is estimated to generate \$11.5 million in NPV terms for Australia, of which \$3.7 million is attributed to NSW
- the Revised Project is estimated to generate \$1.5 million in royalties, payroll tax and Council rates in NPV terms
- the Revised Project is estimated to provide a net producer surplus attributed to NSW of \$13.5 million in NPV terms.

The LEA considers the costs and benefits of the Revised Project to residents of the Lower Hunter region of NSW (based on ABS SA3 boundary which includes Cessnock and Singleton). The analysis is based on data provided by Daracon which state that, for the currently approved operations, 100% of the supplier inputs are sourced from Lower Hunter based businesses and 71% of workers who live locally. The analysis shows an estimated potential net benefit of \$35 million to the Lower Hunter region (SA3) in NPV terms, well over half of the total benefit estimated to NSW. This is largely driven by benefits to local suppliers, based on information from Daracon that 100% of the inputs to production are supplied from the Lower Hunter region (SA3). In fact, the net benefit to local suppliers is estimated to be about \$26.2 million in NPV terms. There is an additional benefit of \$9.2 million in NPV terms to local workers.

The SIA (Umwelt, 2021c) (Appendix O of the ADA Report) considers key social impacts associated with the Revised Project, including potential impacts to livelihood and local businesses. A number of mitigation measures have been proposed in this regard, as outlined in **Table 4.10**.

As previously outlined, Daracon has committed to make the relevant financial and/or in-kind contributions to DSC, in the form of a VPA, in accordance with Section 7.11 of the EP&A Act should the Revised Project be approved.

4.12.12.1 Peer Review

The Economic Impact Assessment has two major flaws.

- **The first is the failure to establish and assess the base case. The assessment of the base case, or the do nothing option, is fundamental to Cost Benefit Analysis. The net benefit of the project is the difference between the benefit in a world with the project less the benefit in a world without the project.^{10,11} As no base case has been assessed, this means that the EIA does not comply with the requirement of the EARs to determine “whether [the development] would result in a net benefit for the NSW community”.**
- **The second is the failure to properly identify and address transfers. These two flaws are intimately interwoven, but either approach (comparison with a base case or exclusion of transfers) leads to the same result.**

There may also be errors in data or calculation, however in the light of the major flaws in the EIA, these have not been checked in any detail.

Based on the analysis below, addressing either of these flaws, the Net Benefit of the project to the State of NSW is -\$13.9 million (NPV), due to the introduction of an additional set of externalities from the operation of an additional quarry. This cost will be offset to a greater or lesser extent by increased producer and consumer surplus arising from any competitive advantages of the proposed quarry, but this has not been assessed in the EIA.

The Local Effects Analysis suffers from similar flaws but has not been reviewed in any detail.

In any cost-benefit analysis (CBA), a fundamental principle supporting the analysis across the various components of the Project is that the costs and benefits of the project are compared to the costs and benefits without the project (the base case).

As is consistent with the guidelines for assessing mining projects (*Guidelines for the economic assessment of mining and coal seam gas proposals*, (the Guidelines)), the CBA in the Economic Impact Assessment (EIA) is based on comparing the net direct and indirect benefits and subtracting the direct and indirect costs of the project compared against the base case or currently approved operations (where the project does not occur). The base case considers the existing use of land, where the project is located, which includes any existing and already approved extraction activities associated with the project.

While not explicitly stated in the EIA, EY have confirmed the base case considered is that the operation ceases and no further work is undertaken at the quarry. That is, there are no operating expenses and no additional income. While the site remains approved for limited operations, Daracon would not continue operating the quarry in the current conditions if development consent is not granted for the Revised Project. All figures related to the analysis (such as capital expenditure, employment, and revenue etc) are incremental to this base case. It is noted that this base case assumption used in the CBA in the EIA is considered to be conservative in terms of identifying likely benefits to the State as it does not consider any costs associated with remediation of the site in the short term, nor does it consider the impact of losses that Daracon would likely incur over the early years of the base case while it retains the lease of the site.

The Local Effects Analysis was also conducted in accordance with this principle, in addition to following the methodology as set out by the Guidelines.

The comments surrounding transfers are addressed below.

The net present value of the project is summarised in table 13 of the EIA. That assessment does not include any consideration of loss of market share by existing quarry operators.

There are currently two operating hard rock quarries in the Dungog area in addition to the limited operations at Martins Creek. These are the Boral Quarry at Seaham and the Hanson Quarry at Brandy Hill. That means that in a world in which the Martins Creek Quarry does not exist or operates at reduced output, rock products can be obtained elsewhere, so that the base case can be assumed to be purchase from either Boral Quarry at Seaham or Hanson Quarry at Brandy Hill. If the expansion of the Martins Creek Quarry is approved, then purchasers will have three choices of supplier so that there will be additional competition.

If it is assumed that the Quarry Industry is perfectly competitive and that there are no competitive advantages to any particular quarry, then the direct benefits attributed to Martins Creek Quarry will be a cost to other nearby quarries as they lose market share and hence reduce production, with a similar impact on NSW workers and NSW suppliers. Similarly, taxes and the like paid by Martins Creek Quarry will no longer be paid by other quarries due to decreased revenue. Based on this set of assumptions, the benefit of the expansion of Martins Creek Quarry will be \$0 (NPV).

The above statements in the Peer Review document are based on three key assumptions:

- that the products provided by the quarry are interchangeable with those of Brandy Hill and the Boral Seaham quarry
- that there are no limits on supply at other quarries which would restrict their ability to meet demand, and
- that the quarry supply is limited to the local Dungog area.

None of the above assumptions hold true.

As is detailed in the Amended Geological Assessment for Martins Creek Quarry (Appendix B to the Amended Development Application report) (Amended Geological Assessment) and the Review of Quarry Products Distribution by Rail and Rail Logistics Options for Martins Creek Quarry (Appendix N to Amended Development Application report) (Rail Logistics Review), the quarry provides a range of products to the market which are either not capable of being supplied by other quarries (including those identified in the submission) or the existing approved capacity at other operations is not sufficient to meet current and projected demands or cannot meet specialised emergency supply requirements (e.g. rail ballast supply in the event of emergencies). While it is possible that the quarry could continue to supply ballast under the current approved limits, the operation of the quarry for this purpose alone is not financially viable. Additionally, the continued operation for this use alone would limit Transport for NSW's ability to source the specialist product requirements for major State and regionally significant road projects.

As also identified in the Amended Geological Assessment, all currently approved quarry operations in the area are subject to both annual production limits and overall resource limits. Demands in excess of these limits must be met by other suppliers.

The quarry (and Brandy Hill and Boral's Seaham quarry) provides quarry resources to the Lower Hunter and parts of the Mid-North Coast. As detailed in the Rail Logistics Review, the quarry also has the ability to supply product to a broader market through its access to rail loading facilities, although, as noted in the Rail Logistics Review, this is subject to the constraints on the rail network.

It is also noted that the location of individual quarries makes them better suited to supplying certain projects due to transport costs making them more competitive. In this regard, the quarry is likely to provide a more cost-effective supply of product for some uses, including road construction than other quarries due to the shorter transport distances.

If we further assume that the Indirect Costs shown in Table 13 are a fixed cost (not changing with level of production), then the expansion of the quarry will result in an additional set of indirect costs being imposed on the NSW community in terms of externalities. Based on this assumption, the net benefit of development of Martins Creek Quarry will be -\$13.9 million (NPV), due to the imposition of a new set of environmental costs on the NSW community.

There are likely to be competitive advantages accruing to different quarries based on varied haul distance and haul modes to markets, efficiency of development and operation, quality of product and the like. These competitive advantages will manifest in a combination of lower prices and increased profit for the quarry. If it is assumed that the quarry industry is quite competitive then there should be little opportunity for profit above a normal profit, so that competitive advantage is likely to be seen in reduced prices for consumers. It should be a relatively straightforward assessment to determine the net benefit to NSW from reduced prices as a result of the expansion of Martins Creek Quarry, based on historical pricing and the pricing of competitors. This increase in consumer surplus would need to be of sufficient magnitude to offset the indirect costs (externalities) summarised in Table 13, for the project to deliver a net benefit to the State of NSW.

We note that the assessment in Table 13 may be appropriate for example for a coal mine providing coal to the export market, as in this case income would come from outside NSW (so there are no transfers), although market share would need to be lost by other international suppliers, rather than other suppliers in NSW or by overseas subsidiaries of NSW based companies.

The initial statement relies on the assumptions addressed above and the conclusion that the Revised Project would have a net benefit of \$0. As discussed above, these assumptions do not hold and, therefore, the conclusion that the fixed costs result in a net loss to the State of NSW and regional economy is incorrect.

The second paragraph is again based on the incorrect assumption that the additional supply from the quarry is not required to meet existing (and future demand). This assumption is incorrect for the reasons discussed above. Due to the specialised nature of the bulk of the products supplied by the quarry and its uniqueness in the Hunter Region for many of these products, the inability to supply these products from the quarry would require the import of these materials from outside the region. This would result in a net loss to the region in that the profits from these products would be transferred from the region to other parts of the State. Additionally, the costs of obtaining these specialised resources would be significantly higher due to the increased transport costs involved.

Furthermore, the notion that the continued operation of the quarry would solely damage other producers, whilst providing no broader economic benefits in the region does not hold, as these industries do not operate in a vacuum. For example, resource companies such as quarries, generate value for the economy by extracting materials which have value for other users, but have no economic value while in-situ. Such an argument does not consider the economy-wide benefits of increased competition for these resources. Some beneficiaries, for example, could include downstream users from the output from extraction activities benefitting from the increased price competition amongst the quarries, which could encourage further investment, ultimately resulting in productivity increases.

It is also important to consider that this is a private sector investment, which is planned to be undertaken by an independent business offering additional supply to the market on a competitive basis, and as such, if there was limited demand for the product, it is the key stakeholders, such as investors, employees and those that supply the quarry which would be adversely affected. The assessment of the merits and profitability of the quarry has been undertaken by the project proponent, who are the parties that stand at risk should the project not turn a profit due to the demand concerns raised above. Therefore, this is a risk that is borne by these key stakeholders, and not by the NSW Government. As a result, it is these key stakeholders for which the economic contribution of the project is assessed.

The various benefits listed in Table 13 are transfers and have no place in a Cost Benefit Analysis.

As treasury states:

Transfer payments are financial transfers between groups that do not involve the use of economic resources. These payments should be excluded from a CBA because they have no impact on net benefits of the program, as the benefits to one group are offset by costs to other groups [emphasis added]. If the analysis, however, aims to show distributional impacts on various groups affected by the proposal, this could be included in the analysis and appropriately qualified so as to avoid double-counting.

The net producer surplus attributed to NSW is a transfer as the benefit to Martins Creek Quarry is offset by a loss of producer surplus to other quarries through reallocation of market share. The net economic benefit to NSW workers at the quarry is offset by the loss of net economic benefit to NSW workers at other quarries who lose their jobs or overtime as a result of a shifting of market share.

The net economic benefit to NSW suppliers to the quarry is offset by the loss of net economic benefit to NSW suppliers to other quarries who have reduced income as a result of a shifting of market share. More likely however, the same suppliers will move some market share from one quarry to another and so be no worse off.

According to Treasury Guidelines:

Taxes (and subsidies) are transfers which increase (reduce) the prices faced by producers and consumers. As a general rule the taxes and subsidies should be excluded from economic costs because they do not represent a resource cost. However, insofar as they are part of consumers' willingness to pay for something, they form part of willingness to pay valuations. Indirect taxes on inputs and taxes on profits (producer surplus) are usually excluded in a CBA.

On this basis, the benefits ascribed to royalties, payroll tax and Council rates; and to company income tax attributed to NSW; should be disregarded.

If transfers are excluded, the net benefit to the State of NSW is -\$13.9 million (NPV) in externalities. This would be offset to a greater or lesser extent by increases in consumer surplus or producer surplus where competitive advantages are passed on as either lower prices or higher profits. As discussed above, it is possible to calculate an estimate of the value of competitive advantages.

The conclusion with the exclusion of transfers is the same as that above if the assessment was reported against a base case.

At the outset, it is important to recognise the relatively unique role that the economic CBA plays in the approvals process. It is common for government to undertake a CBA when considering public expenditures, such as large infrastructure development programs. As such, much of the common literature and practices of CBA are rooted in the conservatism of government decision making, such as those highlighted in the *NSW Treasury Guidelines*. However, the CBA undertaken in relation to the Revised Project considers the expenditure of private funds, which has resulted in the approach outlined in the *Guidelines for the economic assessment of mining and coal seam gas proposals*.

The Guidelines have been developed explicitly to account for the kinds of benefits that are more appropriate to decisions makers to consider when accounting for private investment. In this context, the CBA outlined in the Guidelines is aimed at assessing the economic welfare benefits to NSW, which includes areas that might not be standard when assessing government expenditure programs, such as worker and supplier benefits. Furthermore, by explicitly recognising a range of potential beneficiaries of the Revised Project (at the state and local levels), the Guidelines are effectively identifying key stakeholders in the Revised Project.

Therefore, the exclusion of the various transfer payments suggested in the submission are inconsistent with the approach to the economic assessment of resource projects as set out in the Guidelines. The components of net benefits which are attributed to NSW are clearly set out in Table 3.1 of these Guidelines which is reproduced in the table below, which include financial transfers accruing to workers, suppliers, as well as a range of payments to government that result due to the Revised Project:

Table 3.1: Components of net benefits attributed to NSW

	Cost Benefit Analysis
Royalties	Yes
Company income tax	Yes (NSW share)
Net producer surplus	Yes
Economic benefit to existing landholders	Yes
Economic benefit to workers	Yes
Economic benefit to suppliers	Yes
Net environmental, social and transport-related costs	Yes
Net public infrastructure costs	Yes

Benefits to workers

The Guidelines are explicit in their allowance of positive worker benefits and recognises that such benefits can represent a major proportion of the total benefits of the project. Furthermore, in extending the argument on the Revised Project employing workers from other quarries is flawed, as these operations themselves will seek to fill their vacancies, which eventually results in a net increase in the number of people employed in the extractive/quarry sector. Secondly, as discussed earlier, the quarry provides a range of products to the market which are not being supplied by other quarries, moreover, there is insufficient capacity at other operations to meet projected demands, therefore it is unlikely that the quarry would significantly alter market share of alternative quarries, which would result in a reduction in the workforce.

Benefits to suppliers

The Guidelines are explicit in their allowance of estimates of supplier benefits, which attempts to capture the economic benefit that local suppliers may receive from the operation of the Revised Project. From the assessment of other mining and quarry projects, one of the key benefits of private sector investment is through the establishment of supply chain networks that act to disperse the economic benefits of projects to a myriad of businesses. Given that the quarry is providing production, which is not being supplied by other quarries, and that there is insufficient capacity at other operations to meet projected demand, the assumption that NSW based suppliers would simply move market share from one quarry to another, implying a net economic benefit to suppliers of zero, does not hold.

Stated otherwise, the base case that would result in the Revised Project's operations not being extended is a direct and significant reduction in demand for goods and services in the region, which would not necessarily be replaced by other projects. Therefore, the extended life of the Revised Project and the associated required capital and operational expenditure of the operation is expected to increase the demand for services and supplies relative to the base case of the project not proceeding. The effect of this is that the same expected margin for suppliers to the quarry is applied to increased turnover which can be considered as a supplier benefit associated with the Revised Project.

Such an approach has been reviewed by other independent economic consultancies and have concluded that this approach to estimating supplier benefits is broadly consistent with the Guidelines.

Taxes

One of the key benefits to the NSW government for any private venture is the collection of taxes from these projects. The fundamental basis of the CBA, as required by the Guidelines, compares a project case to a base case where the project either does not exist, or extension is not granted. In the case of taxes, the CBA compares a scenario where taxes are generated for the NSW government (in the project case) and where no taxes are paid to the government (in the base case), as the project does not exist. And whilst the *NSW Treasury Guidelines* require that taxes on profits be generally excluded from a CBA, such a practice appears to be for the evaluation of government spending, rather than for the economic appraisal of private investments.

Therefore, we believe that these transfers should be included as part of the assessment of the direct and indirect benefits of the Revised Project, as they are not only explicitly permitted in the Guidelines, but also serve to assess to economic benefits to a wider range of stakeholders than those assessed in the *NSW Treasury Guidelines*.

4.13 Maitland City Council

4.13.1 Procedural Matters

Council makes a formal submission (objection) to the NSW Department of Planning, Industry and Environment. This will outline concerns over heavy vehicle movements, traffic impacts and noise as a result of the revised Environmental Impact Statement (EIS) for the proposed expansion of the Martins Creek Quarry. As a result of these concerns, Council does not consider the proposal to be in the public interest.

Noted.

4.13.2 Traffic and Transport

Since Buttai Gravel commenced operation of the quarry in 2012, the increase in heavy truck volumes has resulted in increased complaints from residents regarding noise and road safety. Prior to the cessation of operations, it has been suggested that up to 600 truck movements in one day were occurring when the quarry was operating on its last major project. Residents complained about truck noise and road safety that stemmed from this project.

The five areas of contention were:

- the volume of trucks
- the early morning start and the continuing of the noise throughout the day
- the truck noise created by the pavement condition
- noise from empty trucks
- road safety in built up areas.

Daracon recognise that traffic and transport issues remain a key concern to the community, in particular with regards to the volume of truck movements, transportation hours, road safety and road capacity, noise emissions, emissions to air, truck vibrations and social amenity impact. Consequently, as part of the ADA and RTS process, Daracon have committed to reduce the operational parameters of the Revised Project, a summary of which is provided below, in addition to implementing a range of traffic management measures in the Traffic Management Plan (TMP) to further reduce traffic impacts associated with the operation of the quarry.

In summary the redesign of the Project has resulted in:

- a reduction in tonnes transported by road to 500,000 tpa
- a reduction in peak trucks per hour to:
 - 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
 - 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm
- road haulage of quarry product to occur 7.00 am to 6.00 pm Monday to Friday, with no haulage of quarry product on Saturday, Sunday, public holidays or between 24 December and 1 January
- no trucks through Paterson prior to 6.45 am Monday to Friday
- removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required).

In order to capture the traffic management measures, Daracon will prepare and implement the TMP in consultation with TfNSW, DSC and MCC, should the Revised Project be approved. The TMP will include:

- the haulage route and traffic types to be used for the Revised Project
- the measures to be implemented to:
 - ensure compliance with the traffic operating conditions committed to by Daracon

- minimise traffic safety issues and disruption to local road users, including minimising potential for conflict with school buses
- minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles exiting the quarry
- confirm truck speed limits through Paterson, Bolwarra, Vacy and Martins Creek
- participate in transport management investigations initiated by DSC or MCC
- include the Driver Code of Conduct.

Daracon have also committed to contribute to road maintenance costs associated with truck haulage to enable MCC to ensure road conditions are appropriately maintained.

Notwithstanding the suggested limitations of 140 one-way truck movements per day for a maximum of 50 days per year, the proposed volumes of 280 truck movements per day (two way) is still considered high and has the potential to create additional noise impacts for residents, particularly those in the residential areas along Tocal and Paterson Roads.

It is noted that the Revised Project seeks approval for a **peak** of 140 laden trucks per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:

- 20 laden trucks per hour (40 movements) Monday to Friday between 7.00 am and 3.00 pm
- 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm.

A detailed NIA (Umwelt, 2021b) was completed for the Revised Project, including an assessment of noise associated with road transportation (refer to Appendix D of the ADA Report). The NIA indicated that the addition of quarry trucks at the capped maximum of 140 laden trucks per day (280 movements) and the capped maximum of 20 laden trucks per hour only results in an exceedance of the NSW Road Noise Policy (DECCW, 2011) (RNP) Criteria at one receiver where it was not already calculated to exceed the criteria with the baseline traffic levels. Where the RNP criteria are already exceeded or is predicted to be exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.

The modelled scenarios with the addition of quarry trucks at the capped maximum of 140 laden trucks per day (plus the return trip) and the capped maximum of 20 laden trucks per hour represent worst-case traffic conditions. During usual operating conditions, road noise impacts would be lower than the levels predicted for the maximum operating scenarios.

It is noted that the revised EIS removes the majority of heavy vehicle movements through Belmore Road and Lorn, which significantly reduces the amount of residential receivers.

Noted.

Council, as part of its submission will request that:

- the vehicles be maintained on a regular basis to reduce engine and exhaust noise
- use of compression braking not be used on Paterson and Tocal Road residential areas (60kph and less speed zones).

The above listed management measures are already committed to and included in the Driver's Code of Conduct. Daracon has further committed to the continued implementation of existing operational traffic controls and a review and update of these controls for the Revised Project, as detailed in Section 8.1.5 of the ADA Report.

The operators have indicated that their normal truck movements will be restricted to 280 two-way movements a day for a maximum of 50 days, decreasing to 200 movements two way movements for the remaining 200 days. A maximum of 40 two-way movements are proposed. It is acknowledged that this is a reduction from previous proposed traffic movements from the proposal, however, the overall traffic network has become more congested. As a result, there is concern over the resulting hourly volume and its implications on the queuing of commuter traffic at the intersection of Pitnacree and Melbourne Street, East Maitland.

The TIA for the Revised Project (refer to Appendix C of the ADA Report) included intersection surveys during weekday AM and PM peak periods along the primary haul route to establish current traffic volumes, including Pitnacree Road/Melbourne Street/Lawes Street and Melbourne Street/New England Highway.

Results of the SIDRA modelling are presented in **Table 4.11**. This modelling allows for the Revised Project's maximum truck movements per hour along the primary haul route, including a future growth scenario, for Pitnacree Road/Melbourne Street/Lawes Street and Melbourne Street/New England Highway intersections. The modelling also considers the now approved haulage from Brandy Hill quarry.

Table 4.11 SIDRA Results along Haulage Route for 2030 with the Revised Project's Proposed Quarry Truck Flows (20 Inbound and 20 Outbound per hour) Plus 2% Growth Per Annum

Approach	Level of Service	Average Delay (S)	95% Queue (m)
Melbourne Street/Pitnacree Road/Lawes Street			
Lawes Street	E / F	63.4 / 81.7	93 / 139
Melbourne Street (from New England Hwy)	C / C	35.9 / 36.5	213 / 162
Pitnacree Road	F / F	75.9 / 89.9	157 / 131
Melbourne Street (from Morpeth)	B / B	26.0 / 28.1	104 / 276
Overall	D / D	46.4 / 45.6	213 / 276
Melbourne Street/New England Highway			
New England Highway (from Newcastle)	F / D	75.3 / 50.1	457 / 255
Melbourne Street (from Morpeth)	F / E	83.9 / 62.8	230 / 146
New England Highway (from Maitland)	C / E	30.5 / 53.3	224 / 415
Melbourne Street (South)	D / D	54.5 / 54.7	87 / 99
Overall	E / D	59.2 / 53.9	457 / 415

Table 4.11 shows that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the signalised intersections of Pitnacree Road/Melbourne Street/Lawes Street and Melbourne Street/New England Highway. Whilst these intersections are predicted to suffer delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

Traffic flows associated with the Revised Project represent a small increase over the existing flows through the Melbourne Street/New England Highway intersection. In the AM peak between 8.15 am and 9.15am the total flows were 4,451 and the quarry traffic represents an increase of 0.89% over these flows. In the PM peak between 4.30 pm and 5.30 pm, the quarry traffic generated through the intersection represents a 1.09% increase.

- **Limit heavy vehicle travel speed during early hours through built area of Bolwarra and Bolwarra Heights.**

Reasons: (a) Heavy vehicle traffic associated with the quarry travelling at early hours through built up areas such as Bolwarra, Bolwarra Heights where dwelling setbacks from the main road are 15m to 20m. (b) Empty trucks travelling to the quarry are more likely to cause higher traffic noise at higher speeds, (c) Heavy vehicle especially laden vehicles may cause excessive vibration on nearby dwellings.

- Travel conditions such as limiting travel speed by agreement with local Council's where issues are raised through government agencies associated with school traffic, and child care centres and aged care centres and the like along the identified access routes.

Reason: To ensure road safety around school, and ensure that environmental amenity is maintained.

- **Limit heavy vehicle volumes to specific periods of the day to minimise impact on residents and road traffic levels.**

Reason: Peak heavy vehicle traffic generation associated with the quarry may occur for extended periods during major projects may cause noise above statutory thresholds (e.g. Bolwarra, Bolwarra Heights) and may impact on the service levels of part of the road network (Melbourne Street East Maitland signals at Pitnacree Road and at New England Highway).

- Heavy vehicle operators that provide services to the quarry maintain their vehicle fleet on a regular basis, and the use of compression braking not be used in the Paterson and Tocal Road residential areas (60kph and less speed zones).

Reason: To reduce engine and exhaust noise.

Daracon have committed to the management measures noted in MCC's submission as part of the ADA Report and/or included in the Driver's Code of Conduct. Specifically, Daracon has committed to:

- limiting heavy vehicles travel speed to and from the quarry through Paterson, Bolwarra, Vacy and Martins Creek
- limiting heavy haulage volumes to and from the quarry between 3.00pm and 6.00pm to minimise interaction with high traffic periods
- maintaining heavy vehicles to National Heavy Vehicle Regulator standards.

Daracon has further committed to the continued implementation of existing operational traffic controls and a review and update of these controls for the Revised Project, as detailed in Section 8.1.5 of the ADA Report.

As outlined above, Daracon has committed to prepare and implement a TMP in consultation with TfNSW, DSC and MCC, should the Revised Project be approved. The TMP will include:

- the haulage route and traffic types to be used for the Revised Project
- the measures to be implemented to:
 - ensure compliance with the traffic operating conditions committed to by Daracon
 - minimise traffic safety issues and disruption to local road users, including minimising potential for conflict with school buses
 - minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles exiting the quarry
 - confirm truck speed limits through Paterson, Bolwarra, Vacy and Martins Creek
 - participate in transport management investigations initiated by DSC or MCC
- include the Driver Code of Conduct.

4.13.3 Noise

A Noise Impact Assessment has been undertaken by the proponent. This document largely focusses on the potential noise impacts from the quarry operations themselves but does consider an impact in noise from both road and rail movements.

A detailed NIA (Umwelt, 2021b) has been undertaken to assess the potential noise impacts associated with the Revised Project in accordance with the SEARs. The NIA assesses the impact from the quarry operations as well as road and rail traffic impacts associated with the Revised Project (refer to Appendix D of the ADA Report).

The assessment has considered road and rail traffic impacts associated with the Revised Project in accordance with the NPfI, the RNP and the Rail Infrastructure Noise Guideline (RING) (EPA 2013).

Rail Noise

As discussed in Section 6.4.5.2 of the ADA Report, during the daytime period, more than twenty pass-by events could occur without exceeding the Recommended Acceptable Laeq noise level at the closest receivers on Station Street.

Over the four-hour evening period, only one pass-by event is possible before the Recommended Acceptable Laeq noise level at the receivers on Station Street is exceeded. During the evening period more three pass-by events could occur without exceeding the recommended maximum Laeq noise level at the closest receivers on Station Street.

During the night-time period, a single pass-by event would result in the Recommended Acceptable Laeq noise level at the receivers on Station Street being exceeded, but two pass-by events could occur before the Recommended Maximum Laeq noise level is exceeded.

Network constraints limit the number and timing of train movements that can service the quarry. These constraints currently limit the existing approved operations in terms of daily train movements and the time of train movements. As a result of these constraints, there would be no increase in the period based Laeq, Day-time or Laeq, Night-time noise levels due to train movements from quarry on network rail lines.

Road Noise

As discussed in Section 6.4.5.3 of the ADA Report and outlined above, the addition of quarry trucks at the capped maximum of 140 laden trucks per day (280 movements) and the capped maximum of 20 laden trucks per hour only results in an exceedance of the RNP Criteria at one receiver where it was not already calculated to exceed the criteria with the baseline traffic levels. Where the RNP criteria are already exceeded or is predicted to be exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.

The modelled scenarios with the addition of quarry trucks at the capped maximum of 140 laden trucks per day (plus the return trip) and the capped maximum of 20 laden trucks per hour represent worst-case traffic conditions. During usual operating conditions, road noise impacts would be lower than the levels predicted for the maximum operating scenarios.

In regards to noise impacts from the rail line, there is considered to be no increase in overall impacts. At a peak level of 600,000tpa of excavated materials, a total of three additional rail movements a day would be required. No modelling of these impacts has been undertaken.

This statement is incorrect. As outlined above, rail noise impacts associated with the Revised Project have been assessed in accordance with the relevant guidelines.

In regards to noise impacts from road movements five locations were used to calculate heavy vehicle movements. Two, being Paterson Road and Flat Road were located in the Maitland LGA. The report presents a "worse case" model of impacts from the traffic movements. It finds that the modelling sites within the LGA are already exceeding the recommended maximum noise levels of 60dB(A), and that the proposed truck movements would increase this by an average of 2 dB(A).

As outlined in Section 6.4.5.3 of the ADA Report, road traffic noise levels with and without quarry trucks have been calculated for the road traffic noise receivers along the proposed primary haul route using the software package CoRTN. The modelling results indicate that baseline/existing road traffic noise levels without the quarry trucks present exceed the RNP (DECCW, 2011) criteria for some receivers due to existing traffic rates and proximity to the road.

The addition of quarry trucks at the capped maximum of 140 laden trucks per day (280 movements) and the capped maximum of 20 laden trucks per hour only results in an exceedance of the RNP Criteria at one receiver where it was not already calculated to exceed the criteria with the baseline traffic levels. Where the RNP criteria are already exceeded or is predicted to be exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.

Noise from existing road pavement was another issue previously raised by residents, generally caused by the road surface, but also nuisance truck engine noise associated with early morning operating hours and continuing during the day when operating at increased haulage rates. Noise has been reduced by the resurfacing and reconstruction of the pavement wearing course by Council. This will need to be strictly monitored to maintain the current pavement noise levels and may require more regular resurfacing treatments, should the pavement deteriorate, and noise levels increase.

Council, with a suitable contribution from Buttai Gravel, should be able to provide a reasonable road surface over the life of the quarry to reduce road pavement noise.

Noted.

Daracon has committed to establishing a VPA with MCC, should the Revised Project be approved. As part of the VPA with MCC, Daracon will contribute towards road maintenance and pavement upgrades for impacts on the road pavement resulting from the transport of product from the Revised Project.

The road pavement improvements and maintenance will go a long way to improve this however vehicle maintenance should also be extended to the trailer, bogey and tailgate to be possibly fitted with dampeners to reduce noise generated by empty trailers.

Noted.

All vehicles are maintained to relevant standards. Daracon maintains a 'National Heavy Vehicle Regulator (NHVR) Maintenance Accreditation' which is regularly internally and externally audited. This covers prime movers (trucks), trailers and all aspects of the heavy vehicles including tailgates.

4.13.4 Public Safety

Issues have been raised about road safety and the number of heavy vehicles and speed in the narrow section of Tocal Road north of the Paterson Road intersection.

Council have previously undertaken the following:

- resurfaced this section of the road
- relocated the school/public bus stop
- constructed additional footpath paving
- delineating the travel lanes with pavement markings
- raised pavement markers
- implemented a restriction of no parking on the shoulders through this section which as widened the travel width of the pavement to 9 metres.

Martins Creek Quarry have:

- introduced a self-imposed speed restriction in reaction to community concerns to address the perceived road safety issue at choke points at Paterson and Bolwarra Heights
- prepared a code of conduct for drivers
- indicated that the road width is diminished at Paterson Road and may be a safety issue for their trucks
- acknowledged that parking restrictions and works undertaken by Council have improved the safety in this narrow section of the haulage route.

Noted.

4.13.5 Voluntary Planning Agreement

The heavy vehicle traffic will have an impact on Council roads and the annual contribution to the maintenance of Maitland Council section along the haulage route. The defect report shows isolated pavement defects that will require monitoring and maintenance intervention. The maintenance value determined by Council is through the current Extractive Industries Contribution Plan.

Daracon has committed to make relevant financial and/or in-kind contributions to MCC in the form of a VPA, in accordance with Section 7.11 of the EP&A Act, should the Revised Project be approved.

As part of the VPA with MCC, Daracon will contribute towards road maintenance and pavement upgrades for impacts on the road pavement resulting from the transport of product from the Revised Project.

As a result of the above, Council resolved that the revised EIS for the Martins Creek Quarry operations were not in the public interest and should therefore not be supported by Council. If the proposed is supported, then the following mitigation measures should be implemented:

- Monetary Contributions as per the 2016 Citywide Contributions Plan are to be imposed.

Reason: Council's apply a road maintenance contribution to quarry operators that generate heavy vehicle traffic on Council's local road network.

As noted above, Daracon has committed to make a road maintenance contribution to MCC as part of a VPA should the project be approved.

Daracon has commenced discussions with MCC in this regard, by way of a meeting held on 13 April 2021 with MCC's Strategic Planning Manager, Development Contributions Coordinator and Infrastructure (Traffic and Transport) Coordinator.

4.14 Port Stephens Council

PSC have reviewed the Amended Development Application and Response to Submissions. The proposed route would not access any road within the Port Stephens LGA and therefore Port Stephens haulage contribution rate would not be applicable to the development.

However, Council noted that the document states "Other local roads may be used as required to service local projects on a campaign basis". There is no definition of a 'campaign basis', nor is there an indication of which local roads may be used or how often. So that Council can be sure there will be no adverse impact on the local road network, it might be helpful if this statement could be clarified. Furthermore, if there is a clearer indication on the number and nature of the traffic use on the local road network, this should be restricted through a condition of consent or within an approved document to assist with enforcement should it be required.

As outlined in the ADA Report, Daracon has removed Haul Route 2 as a primary haul route from the Revised Project to further reduce traffic and transport impacts through the PSC Local Government Area (LGA). As it is unknown at this stage which local projects would be sourcing quarry products from the quarry, it is not possible to identify which local roads would be used and how often deliveries would be made.

It is expected that through its development application, each of the local projects would identify where resources would be sourced from and would gain approval for the increased truck movements on the local road network through PSC LGA as part of that development consent, should it be required.

If Daracon is called upon to assist in providing quarry material in response to an emergency event it will; advise the community, the relevant council and the EPA, at the soonest possible opportunity, in accordance with any emergency response plan enacted by the relevant State or National authority.

5.0 Response to Interest Group Submissions

As outlined in **Section 2.2**, a total of 33 submissions were received from organisations/interest groups. A response to the issues raised in the objecting submissions from interest groups is included in the following sections.

5.1 Martins Creek Quarry Action Group

We request that the DPIE's assessment of the Proposal give no regard to the statements, data and baseline data containing past unlawful operations at the Site. Furthermore, we request the Minister to consider the ADA to be an application for a new development not an extension of an existing development consent in the same way the Minister would if this was an application for a pub with poker machines that sought an approval to be converted into a casino, the genus may be similar but the use will be new and different.

We request the Minister to require the Proponent to revise the ADA to record current lawful base line data absent the unlawful operations at the Site and along the proposed haulage route, 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 development application is being assessed as SSD, requiring approval under Part 4 of the EP&A Act.

The quarry was established in 1914 and has operated since that time. Daracon acknowledges that the Courts have found past operations at the quarry were not being carried out in accordance with a development consent and existing use rights applying to the land. The Courts did not, however, require quarry operations to cease entirely. If the ADA is refused, that does not mean that continuing quarry operations will be unlawful or that the quarry must close. It is therefore appropriate to have regard to the currently approved operations, as outlined in **Section 1.2.1** (noting that the Courts did not find that the 1991 Consent limited operations in the manner described in the MCQAG submission).

For the purposes of describing the ADA, the ADA Report compared the Revised Project against the Original Project. The ADA Report and assessments do not, however, assume that the baseline for the Revised Project is the Original Project.

The ADA Report, and relevant assessments contained within, have assumed the baseline for assessment is either the parameters of the approved operations (as set out in **Section 1.2.1**) or no quarry operations, which is a conservative approach.

It is noted that some assessments have assessed the additional impact associated with the Revised Project based on the current condition of the Project Area, for example biodiversity. This approach is in accordance with relevant legislation and guidelines and takes into account cumulative impacts from previous development.

Monitoring data provided during previous operations has been used, where relevant, to provide information or context. All assessments have been undertaken in accordance with the SEARs and relevant guidelines, as outlined in the ADA Report.

The impacts from past unlawful activities both onsite and offsite are significant and in some cases intolerable for many of our members. As detailed above the environmental baseline now experienced by impacted residents provides the community with a “wonderful new normal”. The lived experiences and impacts (that will almost certainly return if the ADA is granted an approval) that we discuss later in this document have been wilfully ignored by the Proponent within the ADA.

The scope of Approved Operations considered in the assessment for the Revised Project is outlined in **Section 1.2.1.**

The ADA Report does not ignore previous impacts or community comments. A key component of the SIA is the process of understanding, from the local community and business perspective, the issues, values and uses associated with the assessment area, and specifically the identified issues of concern and potential opportunities associated with the Revised Project.

Social impact themes and key associated issues of concern, as identified during consultation activities, are further described in the SIA (Umwelt, 2021c) (refer to Appendix O of the ADA Report). Qualitative quotes from personal discussions and other engagement forums have also been provided to highlight stakeholder sentiment as recorded to provide further context to the impacts noted.

It is worth noting that stakeholder perceptions vary between individuals and groups with no single perception more important than another.

The Revised Project does not seek approval for operations as they were prior to the Court proceedings. The Revised Project includes consideration of concerns raised by the community, detailed assessment of the likely impacts of proposed operations and offers significant mitigation measures to address those specific concerns. Future operations will therefore be managed to reduce impacts and will be highly regulated.

The ADA and the RTS at Section 13.1.7 have continued to ignore the impacts to the activity centre of Paterson. The ADA and RTS has failed to note and acknowledge that residents’ submissions and attendees to CAF forums on traffic who contended at the time that the proposed hourly and daily scale of operations now incorporated into the ADA would result in unacceptable impacts to the village amenity of Paterson and on the activity centre function.

The ADA Report does not ignore the impacts to the activity centre of Paterson. Section 13.1.7 of the ADA Report relates to responses to the Original Project in relation to traffic, including impacts to use of Paterson. The ADA Report has undertaken assessments in accordance with relevant guidelines, including for traffic, noise and air quality. The SIA (Umwelt, 2021c) further considers the social amenity impacts of the Revised Project (refer to Appendix O of the ADA Report).

Daracon has committed to implementing several mitigation measures that directly respond to community feedback provided in submissions and at CAFs, including:

- reduced truck movements between 3-6pm weekdays from a peak of 20 laden trucks per hour to a peak of 15 laden trucks per hour (30 movements) to avoid higher community traffic / school pick up times
- no road haulage of product on Saturdays

- a further reduction in speed limits to 20 to 25km/hr around the King and Duke Street intersection in addition to the already reduced speed limits for quarry trucks travelling through Paterson Village of 40km/hr rather than 50 km/h
- planning quarry activities around extra traffic days/community events in Paterson Village/Tocal
- investigation of the use of additional radar variable message signs in consultation with DSC and the CCC. There are currently 5 in operation along the haul route, of which 4 Daracon either maintain or have contributed to the installation or maintenance
- establishment of a Camera Monitoring Station at the King and Duke Street Intersection in Paterson Village to enable identification of relevant trucks associated with any complaints or enquiries.

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 proposed within the ADA be refused.

The surrounding land zonings are not directly relevant in terms of permissibility of a project.

As outlined in the ADA Report, the Project Area is largely located within land zoned RU1 Primary Production with a small portion within RE1 Public Recreation. Under the provision of the Dungog LEP, extractive industries are permissible with development consent in RU1 Primary Production. The land zoned RE1 Public Recreation does not form part of the quarry's operations and is outside of the proposed disturbance footprint of the Revised Project. This land will therefore not be impacted by the Revised Project.

The objectives of the 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.

The Revised Project is considered to be consistent with these principles, as the quarry is an economically productive industry and is not likely to impact any rural and agricultural uses in the locality. As discussed in Section 6.2 of the ADA Report, the low soil fertility and slope of the landforms across the Project Area limits the potential for sustainable agricultural use of the land in a manner that is both financially and environmentally responsible. There is no prime agricultural land, or agricultural activities that would be removed from production or agricultural use as a result of the Revised Project.

The proposed final land use (refer Section 6.19.1 of the ADA Report) is focused on promoting the rural landscape by establishing native grassland or exotic pastures in low lying areas whilst focusing on the re-introduction of pockets of woodland species across the benches consistent with endemic vegetation types.

It is also noted that the Revised Project is within an area which has been subject to quarrying since the early 1910s, with this quarrying activity coexisting with neighbouring land uses for over 100 years. The Revised Project seeks to maximise resource recovery from an existing operational quarry, whilst limiting the potential for conflicts with other land uses.

While the surrounding land zonings are not directly relevant for the permissibility of a project, the Extractive Industry SEPP does require the consideration of the compatibility of proposed extractive industry with other land uses. Clause 12 of the Extractive Industry SEPP states:

Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must—

(a) consider—

(i) the existing uses and approved uses of land in the vicinity of the development, and

(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and

(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and

(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and

(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).

As outlined in the ADA Report, the land surrounding the quarry and along the haul route is primarily small villages, rural residential and small rural holdings. The quarry has historically been used for over 100 years. It is unlikely that the Project Area or area surrounding the quarry would be utilised for alternate land uses based on current land zoning under the Dungog LEP (refer to Section 6.2.4 of the ADA Report). The haul route utilises the existing road network which has historically been utilised for product transportation from the quarry. Traffic and amenity related issues associated with the Revised Project have been assessed (refer to Section 6.3 – traffic and transport, Section 6.4 – noise and Section 6.5 – air quality of the ADA Report). The Noise Impact Assessment indicates that relevant criteria may be exceeded for some residences adjacent to the Project Area (refer to Section 6.4 of the ADA Report). Other than the potential noise impacts which may be managed through management and mitigation or agreements, the Revised Project is not expected to have a significant impact on surrounding land uses.

The Revised Project is within an area which has been subject to quarrying since the early 1900s, with this quarrying activity coexisting with neighbouring land uses for over 100 years. The Revised Project will expand the historic quarrying activities and provide for continued supply and utilisation of high quality quarry product from the existing quarry site.

The evaluation of public benefit is provided in Sections 6.13 and 6.14 of the ADA Report.

The assessment of land use interactions is a key component of the updated environmental assessment, with assessments of impacts on other land uses through health and amenity impacts (e.g. dust, noise, blasting, visual) and physical impacts (e.g. water, soils, topography, biodiversity etc.). Following completion of detailed assessments of each of these matters, it is concluded that while some impacts are predicted, the Revised Project is expected to be able to continue to coexist with the surrounding agricultural and non-agricultural land uses in the region.

The Economic Impact Assessment indicates that the Revised Project is estimated to provide a net benefit to NSW, including for the local community.

The Revised Project is therefore considered to be compatible with existing land use of the quarry and broadly compatible with the surrounding land uses. Key elements of the Revised Project have been designed to minimise impacts on surrounding land uses, as detailed in the ADA Report.

As was the case in the previously exhibited Monteath and Powys 2016 EIS, once again, the reader of the ADA is presented with misleading and erroneous information. The mis- information is summarized below.

ADA Executive Summary page 1 par 3: In 2012 Daracon has secured a longterm licence of the quarry and continued operations to produce high quality aggregates, ballast, road base, gabion and other specified materials used in road, railway, concrete and civil construction. The preceding statement from the ADA is misleading. His honour Justice Molesworth notes in *Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2) [2018] (671)* that:

The evidence demonstrates that:

- (a) in 2009 RailCorp formed the view that it would withdraw from the Martins Creek Quarry as it was surplus to its needs.**
- (b) in 2010 RailCorp intended to sell its interests in the assets situated at the Martins Creek Quarry but was not prepared to sell it as a going concern.**
- (c) as at 28 November 2012 this remained the position; and**
- (d) the Asset Sale Agreement executed on 30 November 2012 as between RailCorp and HIRE was for the sale/purchase of assets only and not the quarry as a going concern and no warranties were made by RailCorp as to the existence of any approvals to operate the assets.**

Railcorp abandoned Martins Creek Railway Ballast Quarry, and Daracon resumed operations at the Site contrary to its own legal advice noting that lawful approvals over the Site were doubtful. In performing a standalone merit assessment of the ADA, we request the Minister to give no regard to claims and statements made about past operations occurring at the Site.

The ADA Report provides factually accurate information about Daracon's interest in the land and the history of Daracon's use of the land as context for the ADA. The Executive Summary further notes the outcome of the Court proceedings and confirms that the quarry operations were later adjusted to comply with existing consents in accordance with the decision in the Court of Appeal.

The ADA Report does not assert that the Minister should have regard to the past use of the quarry by Daracon other than:

- a. as specified above, taking into account the currently approved operations as set out in **Section 1.2.1.**

- b. confirming that Daracon has an interest in the subject land and would be entitled to occupy the land for the purposes of extracting the materials as proposed under the ADA
- c. establishing Daracon's expertise in the quarry industry and the local and regional market
- d. establishing Daracon's knowledge of the resources available at the quarry and the demand for those resources in the relevant markets
- e. utilising actual data from the operating quarry to consider as context for the assessment of potential impacts from the proposed operations (with necessary changes consistent with the current proposal), rather than relying wholly on modelled impacts.

ADA Executive Summary page 5 para 2: The Revised Project seeks the capacity for ongoing supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The preceding statement from the ADA is misleading. His honour Justice Basten declared in *Hunter Industrial Rental Equipment Pty Ltd v Dungog Shire Council* [2019] NSWCA 147 that the consent to development application 171/90/79 granted by Dungog Shire Council ("the consent") permitted use of the land only as a quarry primarily for the purpose of winning material for railway ballast, in breach of which the appellants have since 2012 used the land otherwise than primarily for winning railway ballast, in breach of the Environmental Planning and Assessment Act 1979 (NSW) ("the Planning Act"), s 4.2(1)(a).

The Proponent does not have consent or authority for any ongoing supply of construction material from the Site. The Proponent only has authority for ongoing supply of railway ballast in accordance with the Court of Appeal orders. The Proponent more correctly is seeking a NEW approval, to provide NEW supply of construction material In performing a standalone merit assessment of the ADA, we request the Minister to give no regard to claims and statements made about its past or present ability to provide "ongoing supply" to general construction aggregate markets occurring at the Site.

The quarry has supplied construction materials previously and the ADA 'seeks the capacity for ongoing supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets'. This statement is factual and is not misleading.

The current status of Approved Development as determined by the Court is clearly stated in the ADA, and reiterated in **Section 1.2.1** of this document. The Court has confirmed that construction materials are authorised to be produced from the site, providing they are produced during the process of making primarily railway ballast. There is an approved aggregate plant as part of the current site infrastructure.

MCQAG's interpretation of the Court proceedings are not considered accurate.

ADA Strategic Need Section 3.1.1: The following quarry product categories or market sectors have been supplied by the quarry: Aggregates, manufactured sand, pavement construction, rock and gabion.

As is detailed above, that production and supply was of an unlawful nature. We request the Minister to give no regard to claims and statements made about its past or present market sectors and products supplied" to general construction aggregate markets occurring at the Site.

The quarry can lawfully supply aggregates, manufactured sand, pavement construction, rock and gabion. This information is relevant to the consideration of and justification for the Revised Project. The Court proceedings confirmed that the quarry must be used “primarily” for the purposes of winning railway ballast. Other products can be produced.

The proposed continued operation and extension of the quarry is intended for the supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications.

It is Daracon’s understanding that there is significant demand for the products that the quarry can supply. The products supplied from the quarry are of significant importance for both the Hunter and NSW economies. Refer to **Section 7.0** for further details.

ADA Products 3.1.3: Whilst the quarry primarily produces high quality ballast and aggregates, it also focuses on the design and manufacture of high-quality road pavement materials, in particular Stabilbase (RMS Dense Graded Base) and Stabilstone (RMS Heavily Bound Base). These high-quality pavement materials are produced during the crushing and screening process and then blended through a pugmill on site. Frequently, these materials are difficult to source readily as evidenced during 2020 without the availability of the quarry.

As detailed above, the product type processed and manufactured at the Site was of an unlawful nature. We request the Minister to give no regard to claims and statements made about its past or present market sectors and products supplied to general construction aggregate markets occurring at the Site.

The quarry can lawfully produce and process high-quality road pavement materials, in particular Stabilbase (RMS Dense Graded Base) and Stabilstone (RMS Heavily Bound Base). This information is relevant to the consideration of the Revised Project. As noted above, the Court proceedings determined that the primary material extracted at the quarry must be railway ballast. That does not mean that other material cannot be extracted or that different products cannot be produced during the processing of railway ballast.

ADA Establishing Quarry Operations 3.4.1: The quarry is well-established as an important extractive resource in the Hunter Region. The quarry has been servicing the local construction industry and larger Federal and State government infrastructure projects in the wider Hunter Region by processing and delivering high quality aggregates and associated specialised quarry products. These include coarse and fine aggregate, pre-coat aggregate, manufactured and modified road base and washed coarse manufactured sand used in road, railway, concrete and civil construction. As these resources are limited in the Hunter region, the products supplied from the quarry are of significant importance for both the Hunter and NSW economies.

As is detailed above, the servicing of the local construction industry outside of railway projects has historically occurred unlawfully. We request the Minister to give no regard to claims and statements made about its past or present market sectors and products “supplied” to general construction aggregate markets occurring at the Site.

The quarry is well-established and has previously been an important extractive resource in the Hunter Region. The quarry can produce coarse and fine aggregate, pre-coat aggregate, manufactured and modified road base and washed coarse manufactured sand used in road, railway, concrete and civil construction. This information is relevant to the consideration of the Revised Project.

As previously outlined, it is Daracon's understanding that there is significant demand for the products that the quarry can supply. The products supplied from the quarry are of significant importance for both the Hunter and NSW economies.

ADA Summary Section 3.5: The proposed continued operation and extension of the quarry is intended for the ongoing supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

As is detailed above, the preceding statement is misleading. The continued operation and extension of the quarry would only enable the continued supply of railway ballast. If the Proponent seeks to process and produce other product not being rail ballast, then the Proponent is actually seeking to gain approval for a change of use on the land. We request the Minister to give no regard to claims and statements made about its past or present market sectors and products "supplied" to general construction aggregate markets occurring at the Site.

The Revised Project proposes to continue operation and provide for an extension of the quarry with the intent to supply construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets.

The continuing use of the land within the Project Area would be quarrying and ancillary activities. The Revised Project would provide for different products and uses of those products from the quarry (including railway ballast).

The Proponents SIA expert has utilized a graph at figure 7.3 page 271, showing Total laden trucks over weighbridge - peak day. The figure is used to justify the current proposed parameters as acceptable social impact mitigations against the yard stick measure of past years "peak daily truck loads dispatched from the Site.

The use of this graph as a justification that the daily trucking limit proposed is a mitigation when compared to historical operations is misleading. The data set used to create that graph (and therefore that justification) contains unlawful data. We request the Minister to disregard this justification and this graph when assessing the appropriateness of the proposed hourly and daily scale of truck movements through the impacted communities.

The Proponents SIA expert has utilized a graph at figure 7.5 page 272, showing Martins Creek Quarry Historical Road Tonnages (tpa) 1993-2019. The figure is followed by text that states Overall the Revised Project as currently presented represents a significant reduction in the volume of quarry related trucks compared to both those originally proposed in the 2016 EIS and also compared to historical activities to which the community have been exposed. This statement and the assertions of similar nature throughout the ADA and technical studies is being used as a justification for assessment of the Proposal.

The use of this graph throughout the ADA and Technical Studies as a justification that the annual trucking limit proposed is a mitigation when compared to historical operations is miss leading. The data set used to create that graph (and therefore that justification) contains primarily unlawful data. We request the Minister to disregard this justification and this graph when assessing the appropriateness of the proposed annual scale of truck movements through the impacted communities.

The data referenced by MCQAG is included in the SIA (Umwelt, 2021c) and ADA Report (Umwelt, 2021) to provide context to the road transportation volumes for the Revised Project compared to historical road transportation aligning to the lived experiences of the community.

While not intending to diminish the impacts on the community and the extent to which they are felt, it is also important to acknowledge the historical operations prior to Daracon's management of the quarry and the associated historical road haulage of product from the quarry. The proposed road transportation limit of 500,000 tpa returns road haulage volumes to a level that is not inconsistent with road haulage volumes occurring prior to Daracon securing its licence in 2013 with road transportation volumes proposed for the Revised Project less than those previously transported by RailCorp, particularly through the period of 2003-2004 to 2010-2011. The proposed volumes are also far less than the volumes transported by Daracon in previous maximum years.

This data is of relevance to the changes made to the Revised Project and demonstrates that Daracon has reduced road transportation numbers to a level that parts of the community have indicated during consultation and in previous submissions was considered more acceptable.

The previous data is also relevant if lived experiences of residents are to be taken into account. To properly understand the causes of those lived experiences, the extent and scale of operations at the relevant time must be considered.

The MCRailwayBQ ADA and RTS Main Text and appended study documents contain purported justifications on the acceptability of impacts because they relate to improvements and "Changes to the Original Project in response to agency and community submissions". What the authors of the ADA do not detail is how the ADA measures up against the current lawful environmental baseline.

Any reader of the ADA cannot determine what the current environmental baseline impacts are now and how the ADA would compare to these current baselines into the future if an approval was to be granted.

The approved operations for the quarry are outlined **Section 1.2.1** while **Section 1.1** provides an overview of the Revised Project compared to the Original Project.

For the purposes of detailing the ADA, the ADA Report compares the Revised Project against the Original Project. The ADA Report and assessments do not assume that the baseline for the Revised Project is the Original Project.

The ADA Report, and relevant assessments contained within, have assumed the baseline is either the parameters of the 1991 consent (as set out in **Section 1.2.1**) or no quarry operations, which is a conservative approach.

It is noted that some assessments have assessed the additional impact associated with the Revised Project based on the current condition of the Project Area, for example biodiversity. This approach is in accordance with relevant legislation and guidelines which takes into account cumulative impacts from previous development.

Table 5.1 outlines the environmental aspects and the baseline considered in the relevant assessment.

Table 5.1 Baseline for Key ADA Assessments

Aspect	Baseline for ADA Assessment
Traffic and Transport	<p>The quarry has been modelled for the following three scenarios:</p> <ul style="list-style-type: none"> No quarry truck movements IEMP - 20 laden trucks per hour/90 laden per day (180 movements) Proposed – maximum of 20 laden trucks per hour/140 laden trucks per day (280 movements).
Noise	<p>Quarry operations:</p> <ul style="list-style-type: none"> as an existing development, the noise emissions from the existing approved development (as outlined in Section 1.2.1) have been used to establish the project noise trigger levels for the assessment of the day-time operation of the East Pit processing area of the Revised Project the return and loading of road trucks during the day/evening shoulder period, train loading during the evening and night-time period, the expansion of the West Pit extraction area and use of the new access road to Dungog Road through Lot 5 have all been assessed as new development <p>Road traffic: assessed as new development i.e. modelling considers that there is no road transportation as the baseline for the assessment</p> <p>Rail transport: as an existing development, the noise emissions from the existing approved train movements on the rail siding during the loading of rail wagons are included as an industrial noise source in the assessment.</p>
Air quality	Modelling considers no quarry operations as the baseline for the assessment.
Blasting and vibration	Consistent with all blast and vibration assessments for continuing or new development, modelling does not consider a baseline, rather it uses previous data to assess previous and proposed blast design and performance against relevant criteria.
Water Resources	Modelling considers the incremental change associated with the Revised Project and considers the water take for licensing purposes
Biodiversity	Assessment considers additional impact in accordance with the FBA. The FBA accounts for previous clearing from a cumulative impact perspective.
Social	The approved operations as outlined in Section 1.2.1 are the baseline for the assessment. The evaluation of social impacts presented in the SIA has also drawn on consideration of community experiences to date and reported experiences, views and perceptions as provided through direct engagement for the SIA, therefore the 'lived experiences' are also considered.
Economics	Assessment in accordance with guidelines against approved operations as outlined in Section 1.2.1 as the baseline

The ADA and multiple other technical study documents refer to graphs depicting historical operations at the Site. We have included these graphs in Attachment 1 – Graph Overlay – Lawful and unlawful Operations, to show readers that these graphs contain unlawful operations. We have overlaid the lawful limits onto these graphs to indicate how significant the exceedances have historically been.

We request that the Minister require the Proponent to revise the ADA and remove reference or justifications that relate to these graphs and data, in so far as they related to (since 1998) unlawful extraction, processing and sales of material from the Site.

As outlined above, the data referenced by MCQAG is included in the ADA Report to provide context to the road transportation volumes for the Revised Project compared to historical road transportation aligning to the lived experiences of the community.

While not intending to diminish the impacts on the community and the extent to which they are felt, it is also important to acknowledge the historical operations prior to Daracon’s management of the quarry and the associated historical road haulage of product from the quarry. The proposed road transportation limit of 500,000 tpa returns road haulage volumes to a level that is not inconsistent with road haulage volumes occurring prior to Daracon securing its licence in 2013 with road transportation volumes proposed for the Revised Project less than those previously transported by RailCorp, particularly through the period of 2003-2004 to 2010-2011.

This data is of relevance to the changes made to the Revised Project and demonstrates that Daracon has reduced road transportation numbers to a level that parts of the community have indicated during consultation and in previous submissions was considered more acceptable.

The Proponent has used the words “limited operations” throughout the ADA and RTS. MCQAG committee submit this language is completely misleading, the MCRailwayBQ is not in “limited operations” it is in “normal lawful operations” complying with their current lawful consents the baseline of which the reader of the ADA should be entitled to be informed upon.

To be enable a proper assessment of the proposed impacts to be made, we request that the Minister require the Proponent to revise the ADA and complete environmental assessments independent and without extensive reference of past unlawful operations.

The use of the terminology ‘limited operations’ does not influence the ADA Report or the assessment undertaken. The basis on which the Revised Project was assessed is described in previous responses, above.

Just as the lived experiences are considered relevant, the previous operations provide context of relevance to the proposed operations.

The author of the ADA has incorrectly portrayed the Court decisions that have been handed down. Contrary to the statement made in Section 1.4.1 par 3 of the ADA, the LEC did not determine that there are continuing use rights which apply to the Eastern Lands. In his Judgement his honour Justice Molesworth held at par678 that the Court having made its findings with respect to the Western Lands, to the effect that the extraction of stone could not now be in accordance with the 1991 Consent (and could not have been for many years), then the lawful capacity for the ancillary processing on the Eastern Lands to be able to continue fell away from the time when the extraction on the Western Lands fell outside the 1991 Consent. Once the nexus to a lawful extraction operation was broken, the previous ancillary dependency fell away leaving the processing as a stand-alone industrial operation requiring development consent. Such further development consent has not been obtained.

The Court of Appeal declined to make the declarations and orders (12)-(19) made in the Land and Environment Court, which related to the scope and operation of the processing being undertaken on the Eastern Lands. The Court of Appeal confirmed that the evidence established that the whole of the resource processed on the Eastern Lands was derived from quarrying on the Western Lands. The use of the Eastern Lands is therefore dependent on the processing of lawfully extracted material from the Western Lands. The Court of Appeal did not make a determination about the scope of existing or continuing use rights applying to the Eastern Lands and orders were not made to specifically restrain the use of the Eastern Lands. As expressed by His Honour Preston CJ of LEC at paragraph 337: "If orders were to be made to remedy the unlawful extraction of rock from the Western Lands, the unlawful processing of extracted rock on the Eastern Lands would necessarily also be remedied".

If material is lawfully extracted in accordance with the 1991 Consent from the Western Lands, it may therefore be lawfully processed on the Eastern Lands. Alternatively, processing of that material can occur on the Western Lands (Lot 5) as there is no condition in the 1991 Consent limiting processing (as part of the approved extractive industry) to a particular location (see paragraph 210 of the Court of Appeal decision).

It is therefore appropriate for the description of the Approved Operations to include processing of material lawfully extracted from the Western Lands.

The information provided in Section 1.4.1 of the ADA Report is considered legally correct.

Furthermore, the Court of Appeal in *Hunter Industrial Rental Equipment Pty Ltd v Dungog Shire Council* [2019] NSWCA 147 held that the existing use rights were in relation to the operation of a quarry primarily for the purpose of winning railway ballast, rather than the operation of a general quarry. (Basten JA; Gleeson JA and Preston CJ agreeing) held at par 30, 224, 265 the fact that exemption from the planning laws depended upon the carrying on of a railway undertaking would at least be consistent with the definition of the existing use right as being primarily for obtaining railway ballast, rather than the operation of a general quarry. On that basis the existing use right terminated when that purpose ceased.

As set out above, the Court of Appeal did not determine the issue of continuing use on the Eastern Lands. Orders restraining the use of the Eastern Lands have not been made because the use of that land is dependent on the lawful extraction of material from the Western Lands. Processing of material can also occur on the Western Lands (Lot 5). It is therefore appropriate for the description of the Approved Operations to include processing of material lawfully extracted from the Western Lands.

At Section 1.3 of the ADA the Proponent states there [is] no limit on the number of trucks subject, provided that not greatly more than 30% of material per annum is transported by truck. What the Proponent fails to articulate is that there is in fact a trucking limit on an annual basis. Whilst the consents did not explicitly prescribe a “number of trucks” limit, from an environmental base line perspective the Proponent has failed to identify in any of its baseline assessments that there is a limit and that is derived from that fact that general mass limited quarry trucks can typically carry a payload of 32.5 tonne pay load. The typical numbers of trucks that could frequent the Site on an annual basis is then determined with basic arithmetic, taking the annual limit of extraction and processing, calculating 30% of that in accordance with condition 6 of the consent and then dividing that number by 32.5.

500,000 [EPL scale based limit] x 30% [by road from the 1991 consent] = 150,000

150,000/32.5 = 4615 trucks per year.

Section 1.4.1 of the ADA Report states that a key parameter of the approved development includes no limit on the number of trucks, provided that not greatly more than 30% of material per annum is transported by truck. The limit of extraction is 500,000 tonnes. Based on no more than 30% of material per annum, the limit of road transportation is 150,000 tonnes.

Section 1.4.4 of the ADA Report is correct and there is no limit on the number of trucks, provided that not greatly more than 30% of material per annum is transported by truck.

The estimated truck movements stated are erroneous. At the time of approval, truck capacity would have been considerably less than 32.5 tonnes. There is also no limit on the quantity of product that can be transported per truck at any time.

We note there is no quarrying or lawful use related to extractive industries relating to Lot 2 DP242210

Noted.

MCQAG committee’s view is the current lawful use over the Site is best determined by the current consent authority (of existing operations) that being Dungog Shire Council.

We request that the Minister (when determining what the lawful baseline is or should be), have regard to Dungog Shire Council’s view of the lawful use and limits that apply to the current uses of the land.

The scope of Approved Operations as determined by the Court of Appeal is considered the relevant lawful baseline for the Revised Project. The Revised Project has been assessed accordingly and for a number of issues, also more conservatively assuming a ‘no quarry operations’ base-line scenario.

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”.

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.

Amenity impacts have been assessed for the Revised Project. Further, the Revised Project has been specifically redesigned to minimise social amenity and environmental impacts where possible.

When considering impacts on surroundings, the SIA Guideline refers to consideration of access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity.

It is acknowledged that despite the outcomes from the various technical assessments in the ADA Report, for the purposes of the assessment of social impacts, social amenity and impacts on surroundings remain an issue for members of the community.

As outlined in Section 9.3 of the ADA Report, the Revised Project has been assessed against the principles of ESD as required by the EP&A Act. This assessment has indicated that the Revised Project is consistent with the principles of ESD, in particular principles of intergenerational and intragenerational equity. Daracon considers that the Revised Project does not rely solely on compliance with technical criteria and goes further to seek to address, mitigation and manage the potential social and amenity impacts of the Revised Project.

The SIA (Umwelt, 2021c) has identified that the key negative social impacts predicted include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts. Positive impacts of relevance include potential economic benefits to the region and State through employment, procurement and business opportunities. The Revised Project will also lead to a secured availability of construction materials for markets across NSW.

As has been highlighted in the SIA, project development brings benefits and costs that are not always evenly distributed across individuals and stakeholder groups and as a result, where social impacts are predicted it is the role of a SIA to outline how such impacts can or cannot be managed.

Given Daracon's approach of reviewing the Revised Project design to minimise impacts, the social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

The Economic Assessment (refer to Appendix P of the ADA Report) describes a range of positive benefits from the Revised Project that will result at a local, regional and State level. These benefits include:

- continued employment of approximately 22 full time equivalent employees
- the Revised Project is estimated to provide a net benefit of \$58 million to NSW, in NPV terms
- the Revised Project is estimated to generate \$11.5 million in NPV terms for Australia, of which \$3.7 million is attributed to NSW
- the Revised Project is estimated to generate \$1.5 million in royalties, payroll tax and Council rates in NPV terms
- the Revised Project is estimated to provide a net producer surplus attributed to NSW of \$13.5 million in NPV terms.

On this basis, it would be reasonable to consider that with the implementation of the management, mitigation and offset measures proposed by Daracon, the Revised Project will result in a net benefit to the NSW community.

Having regard to the polycentric approach to decision making, it is considered that the community views and values have been given appropriate weight in the assessment of the proposed development under the ADA.

The ADA 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 4.15 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.

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

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

As detailed earlier, the ADA Report has considered the Dungog LEP as outlined in Section 4.2.2.1 of the ADA Report. A detailed response illustrating how the Revised Project is consistent with the LEP zone objectives are provided earlier in **Section 5.1**.

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 regard 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.”

The land upon which the development is sought will trigger impacts upon the proposed haulage routes and via offsite impacts from industrial noise, blasting and dust are zoned R5 and RU5. The author of the ADA has chosen at Section 4.2.2 to refer to the LEP only on the Project Area (the Site) itself. The ADA, contrary to stated caselaw, has not assessed whether the impact from trucking along the haulage route is appropriate in relation to the RU5 village zone detailed above.

Furthermore, the RTS at Section 13.1.2 incorrectly and misleadingly notes that because noise, air quality and vibration criteria are purportedly met, the revised project [in relation to haulage impacts] is not considered to be inconsistent with the objectives of R5 and RU5 zoning. We rhetorically ask: how are 40 truck movements per hour and 280 truck movements per day on a carriageway that otherwise has variable and at times in frequent light vehicle movements consistent with enhancing the character, cultural and built heritage of the villages that they would transect?

We respectfully submit that, having regard to lived experiences of multiple dozens of quarry traffic trucks on an hourly and daily basis during Daracon’s unlawful operations and the associated amenity impacts that they brought to the area, the proposed parameters within the ADA are most definitely inconsistent with the R5 and RU5 zoning objectives particularly in regard to preserving sensitive locations and scenic quality and enhancing the character, including the cultural and built heritage of each village.

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 DSC LEP.

The author of the ADA has chosen at Section 4.2.2 to refer to the LEP only on the Project Area (the Site) itself. The ADA, contrary to stated caselaw, has not assessed whether the impact from trucking along the haulage route is appropriate in relation to the RU5 village zone detailed above.

As explained earlier, the surrounding land zonings are not directly relevant to determining the permissibility of a project. The Extractive Industry SEPP however does require the consideration of the compatibility of proposed extractive industry with other land uses. Clause 12 of the Extractive Industry SEPP states:

Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must—

(a) consider—

- (i) the existing uses and approved uses of land in the vicinity of the development, and*
- (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
- (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*
- (b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) a©(ii), and*
- (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).*

As outlined in the ADA Report, the land surrounding the quarry and along the haul route is primarily small villages, rural residential and small rural holdings. The quarry has historically been used for over 100 years. It is unlikely that the Project Area or area surrounding the quarry would be utilised for alternate land uses based on current land zoning under the Dungog LEP (refer to Section 6.2.4 of the ADA Report). The haul route utilises the existing road network which has historically been utilised for product transportation from the quarry. Further, the haul route primarily utilises the Regional Road (Main Road MR 101) that connects from East Maitland (at the New England Highway) via Bolwarra, Paterson, Wallarobba, Wirragulla, Dungog, Dingadee and Walshpool Bridge to The Bucketts Way. Regional Roads are intended to perform an intermediate function between the main arterial network of State Roads and Council controlled Local Roads.

As identified in the submission, the zoning within Paterson village along the haulage route is RU5 under the Dungog LEP. As outlined the ADA Report, Daracon has made significant changes to the Revised Project in response to community concerns. This has included reducing road transportation volumes and peak hourly truck movements and refined operational hours which lessen impacts along the haulage route. Traffic and amenity related issues associated with the Revised Project have been assessed (refer to Section 6.3 – traffic and transport, Section 6.4 – noise and Section 6.5 – air quality of the ADA Report). The NIA (Umwelt, 2021b) indicates that relevant criteria may be exceeded for some residences adjacent to the Project Area (refer to Section 6.4 of the ADA Report). It is predicted that the addition of quarry trucks will result in minor increases to noise levels. Where the RNP criteria are already exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB(A) are considered barely perceptible to the average person. Other than the potential noise impacts to three residences, the Revised Project is not expected to have a significant impact on surrounding land uses.

Daracon considers that references to other quarry proposals in different locations and with different parameters are not relevant to the assessment of this proposal. It is worth noting that the Revised Project involves no road haulage proposed on Saturdays and reduced haulage from 3.00pm to 6.00pm.

The Revised Project is also within an area which has been subject to quarrying since the early 1900s, with this quarrying activity coexisting with neighbouring land uses for over 100 years. The Revised Project will expand the historic quarrying activities and extraction of quarry material into new resource rich areas at the existing quarry.

The evaluation of public benefit is provided in Sections 6.13 and 6.14 of the ADA Report.

The assessment of land use interactions is a key component of the updated environmental assessment, with assessments of impacts on other land uses through health and amenity impacts (e.g. dust, noise, blasting, visual) and physical impacts (e.g. water, soils, topography, biodiversity etc.). Following completion of detailed assessments of each of these matters, it is concluded that while some impacts are predicted, the Revised Project is expected to be able to continue to coexist with the surrounding agricultural and non-agricultural land uses in the region.

The Economic Impact Assessment indicates that the Revised Project is estimated to provide a net benefit to NSW, including for the local community.

The Revised Project is therefore considered to be compatible with existing land use of the quarry and broadly compatible with the surrounding land uses. Key elements of the Revised Project have been designed to minimise impacts on surrounding land uses, as detailed in the ADA Report.

Although the Air Quality Impact Assessment (AQIA) purports to claim compliance with various policies and criteria, the results of the study do not align with lived experiences of impacted residents whose experiences during unlawful operations 2019 and earlier included;

- awaking to their vehicles covered in dust each morning,
- observations of a dust fog lingering over the Site (and Martins Creek Village) each morning as dust emitted from the atmosphere during conveyor and process start up,
- of “water carting” at the Site only occurring when regulatory inspectors or visitors were attending the premises,
- of abnormal quantities of particulate matter collecting on household surfaces surrounding the Site and
- concerningly at households surrounding the proposed haulage route. We note the comments in both 2016 public meetings and the 2021 public meeting where attendees spoke and gave verbal accounts of the respiratory illnesses, they and their families have suffered from during the Proponents unlawful operations in.

We have attached photos in Attachment 6 – Air Quality Impacts that record past and present dust impacts from operations at the Site. 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 unhealthy particulate to atmosphere.

It is unclear when the two photos presented in Attachment 6 were taken therefore further clarification on those events isn’t possible. It is however noted that the image contained in Attachment 6 noted as ‘Dust emissions from Lot 1 processing equipment’ is heading away from the Martins Creek village.

Daracon has also confirmed that during previous operations it has employed a local contractor to water roads for a minimum of 8 hours per day. During summer and windy weather, an addition of up to two extra water carts were operated onsite.

A comprehensive assessment of potential air quality impacts of the Revised Project has been prepared with a summary provided in Section 6.5 of the ADA Report. The Revised Project will result in emissions to air from a variety of activities, as identified and discussed in Section 6.5.1 of the ADA Report. These emissions will mainly comprise particulate matter (PM) in the form of deposited dust, total suspended particles (TSP) which includes particulate matter with equivalent aerodynamic diameter of 10 microns or less (PM₁₀) and 2.5 microns or less (PM_{2.5}) from general quarrying activities, fume (oxides of Nitrogen (NO_x)) from blasting and minor emissions from machinery exhausts (PM, NO_x and CO).

The design and planning of the Revised Project has closely considered air quality impacts and incorporated air quality mitigation and management measures into the Revised Project design. Key measures included in the Revised Project design that have minimised air quality emissions include:

- reduction of the overall disturbance footprint by approximately 16.8 ha through optimisation of the proposed extraction within the West Pit and therefore reducing the area of operations that could generate dust
- reduced operational hours which would imply that the running of processing equipment, stockpiling and transportation of material will be reduced and thereby reduce the amount of dust generated by the operation of the Revised Project
- limiting the number of haulage routes (where feasible), thus minimising transport routes and associated dust generation and diesel emissions
- progressive rehabilitation of disturbed areas to reduce wind generated dust where feasible
- ongoing implementation of the air quality management practices of the previous operations at the quarry (e.g. through a high level of active dust control).

It is noted that the quarry is not the only source of emissions in the local area, particularly along the haul route. Regardless, Daracon is aware that air quality is an important issue for the community and has committed to a range of emission controls to be incorporated into the design of the Revised Project to further minimise air quality impacts:

- watering of unsealed access roads
- water sprays for drilling activities
- enclosure and water sprays on the primary and secondary plant
- enclosure of the tertiary crusher and hopper
- enclosure of the screening plant
- water sprays on product stockpiles.

Additional air quality monitoring, management and mitigation measures proposed as part of the Revised Project are outlined in **Appendix 2**.

The AQIA predicted that there would be very little change in contribution for all particulate matter classifications (PM₁₀, PM_{2.5}, TSP and dust deposition) beyond the Project Area boundary as a result of the Revised Project, with no exceedances of the EPA criteria at any of the sensitive receiver locations. The assessment further showed that emissions from blasting and associated fume are not expected to result in any adverse air quality impacts, based on model predictions which show compliance with EPA criteria.

Based on the results of the AQIA, with the implementation of the proposed management measures nominated in **Appendix 2**, it is concluded that the Revised Project would not cause adverse air quality impacts on surrounding receivers, or the local air shed.

Further, the water sprays will be required to operate at all times necessary to manage dust emissions including during conveyor start up and shut down operations.

The ADA, revised AQIA and RTS has failed to address the specific request and impact detailed in MCQAG's 2016 submission, being the emission of dust particulate matter into the atmosphere during conveyor start up and shut down operations, an issue that has currently gone unaddressed. 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.

The main objective of the AQIA (Jacobs, 2021) was to identify the activities with the potential to impact on the local air quality. The revised AQIA has followed the Approved Methods (EPA, 2016) which specifies how assessments based on the use of atmospheric dispersion models should be completed along with impact assessment criteria of particulate matter and selected gaseous emissions.

Daracon is committed to effectively managing the air quality impacts associated with the Revised Project and will implement a range of dust management measures for the key dust generating activities.

As outlined in **Appendix 2**, the key measures that will be implemented into the modelling of the dust impacts of the Revised Project for fixed plant include:

- the following components of the fixed plant will have cladding applied:
 - o primary screen and secondary crusher building
 - o primary crusher
 - o surge bin
- attenuated replacement of the tertiary crusher
- water sprays would continue to be used at key transfer points within the processing plant
- water would be applied to stockpiles and hardstand surfaces to prevent dust lift-off.

The water sprays will be required to operate at all times necessary to manage dust emissions including during conveyor start up and shut down operations.

Daracon will continue to implement the air quality monitoring program consisting of five dust deposition gauges, one high volume air sampler and one meteorological station. Daracon will continue to publish the air quality monitoring data on its website.

We note in Section 5.5 of the AQIA states that background air quality levels have been derived primarily from the measurement data collected at the Station Street monitor in 2015; the identified representative year. MCQAG notes that during this period of time the extraction, processing and transport of product from the Site was occurring unlawfully. This data set is therefore based on unlawful operations.

We request the Minister to require the proponent to make assessments and measurements of baseline background air quality at the Site based on current lawful operations at the Site.

As outlined in the AQIA (refer to Appendix E of the ADA Report), one of the objectives for reviewing the air quality monitoring data was to determine appropriate background levels to be added to model predictions for the assessment of potential cumulative impacts, that is, Revised Project contribution plus other sources. The establishment of background levels also needs to consider that the existing quarry may have contributed to the historically measured levels.

For this assessment the background levels that are assumed to apply at the nearest sensitive receptors, for the purposes of assessing the Revised Project, have been derived primarily from the measurement data collected at the Station Street monitor in 2015; the identified representative year. It is noted that, in 2015, the existing quarry was likely to have contributed to the monitored levels. This contribution was estimated by modelling and the potential change in air quality as a result of the Revised Project has been predicted and assessed. The contribution of the quarry to the historical air quality has been taken into account and removed from the background levels used in the AQIA. As a result, the AQIA conservatively assessed the Revised Project in the context of the approved operations.

The ADA and AQIA fail to propose all reasonable and feasible mitigations for dust suppression. As detailed below, MCQAG is aware of other dust mitigation measures employed in modern quarries in the Southern Highlands that have not been proposed for this facility. These include water dust suppressions sprinklers being installed in each enclosed crusher housing, water suppression sprinklers installed in every conveyer run, water suppression sprinklers at all chutes, discharges and bins. Furthermore, other reasonable and feasible measure not considered or covered by the Proponent include fully enclosed silo storage units for the holding of product and automated loading / transfer bays for the loading of product into trucks and trains. We request the Minister to require the proponent to provide technical and commercial justifications as to why these demonstrated reasonable and feasible measures (employed by other modern NSW quarries) are not reasonable and feasible at MCRailwayBQ.

A review of reasonable and feasible dust mitigation measures has been undertaken in response to the EPA submission (refer to **Section 4.1.2**).

The review indicated the proposed measures are consistent with best practice dust mitigation measures for NSW coal mines as well as those adopted at a larger NSW quarry, with a modern approval.

The ADA AQIA has failed to assess the impacts from the proposed handling, storage and processing of lime and fly ash at the Site. MCQAG understands that these are binding agents used in pug milling activities formerly performed at the Site without consent. According to the US EPA8 fly ash contains contaminants including mercury, cadmium and arsenic. MCQAG notes that the potential impacts and emissions of fly ash during the handling, storage, mixing and transport of the product on and off site has not been considered, assessed or detailed. We request the Minister to require the Proponent to perform an assessment of the impacts and mitigations proposed for the safe handling, use and transport of products containing fly ash.

The use of fly ash at the quarry will be in accordance with *Coal Ash Exemption 2014* under the POEO Act. The *Coal Ash Exemption 2014* allows for NSW coal ash to be blended with other material that is, or is intended to be, applied to land as an engineering material (refer to Section 4.2.4 of the ADA Report).

The Revised Project proposes that all fly ash, lime and other proposed additives such as cement and slag will be delivered in tankers, then transferred to enclosed silos or used directly from tankers. Fly ash will not be stockpiled. The blending process involves adding water to the quarry material and additive at the time of mixing.

As outlined in **Appendix 5**, the enclosed nature of fly ash and lime transport, storage and processing will effectively minimise emissions to air. These practices represent all reasonable and feasible measures for the safe handling, use and transport of products containing fly ash. Based on this low relative air quality risk, the modelling of fly ash was not considered to be warranted.

We raised concerns in our 2016 submission in regard to the 14% free silica content of andesite rock that originates from MCQRailwayBQ. Whilst the revised AQIA has an additional section on free silica, we consider the assessment to be deficient.

According to the AQIA, the analysis of the potential for Silica impacts was based on a single day's data set (being 14 June 2019), the analysis fails to detail the weather conditions on that day. The analysis fails to append the raw data and laboratory results collected during the one day of sampling. Given the extrapolation of that single day of monitoring comes within 33% of the Victorian recommended limits we hold grave concerns for the real-world impacts of silica emanating from the Site. 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. We also request the Minister to require the Proponent to provide further analysis (with background weather data and lab testing results appended) and monitoring across more than a single day to provide a better representation of likely impacts from Silica, particularly having regard to the fog of dust that emanates from the Site during conveyor and process start up and shut down.

An assessment of potential impacts of crystalline silica from the Revised Project was undertaken (refer to Section 6.5 of the ADA Report). Typically, the Andesite rock source at the quarry has a crystalline silica content of between 8 to 15% based on petrographic analysis. Dust from quarrying activities such as crushing may therefore contain free silica. The free silica content is estimated to be only approximately 5% (Qualtest 2015).

In response to community concerns, Daracon conducted ambient monitoring of RCS at the quarry on 14 June 2019 in order to inform further assessment of potential impacts from the Revised Project. This monitoring involved the installation of a monitor located on the site boundary and positioned downwind of the quarry activities on a day representative of normal operations.

As outlined in Section 6.5 of the ADA Report, the assessment found that the estimated maximum annual average RCS concentration at the site boundary is $2 \mu\text{g}/\text{m}^3$, a result which is below the $3 \mu\text{g}/\text{m}^3$ criterion noted by the Victorian EPA. Concentrations further from the site boundary, including at sensitive receptors, will be lower than $2 \mu\text{g}/\text{m}^3$.

Based on the assessment, there are no health risk issues of concern in relation to long-term community exposures to RCS in air within the community surrounding the quarry.

Daracon employees engaged in certain activities at the quarry will continue to utilise personal monitors for RSC exposure, consistent with current WHS requirements. Daracon will undertake an additional 2 RCS monitoring events in the first 12 months from project approval to validate the concentrations recorded for the AQIA and confirm that the the RCS concentrations remain below the $3 \mu\text{g}/\text{m}^3$ criterion at the site boundary.

Those of our members who reside along the haulage route have reported diesel particulate deposits on washing, windowsills and interior surfaces of their residential dwelling houses during periods where hundreds of trucks are utilized to unlawfully transport product from the site. Our members have subsequently had testing performed on the deposits collected during unlawful operations at the Site and the results are concerning. How are contaminants such as fly ash and silica controlled and managed whilst trucking haulage occurs, what are the modelled impacts of dust/contaminants entering the environment whilst being transported. We request the Minister require the proponent to assess the impacts of diesel emissions and air quality from contaminants such as silica and fly ash along the proposed haulage route to be assessed and taken in to account.

We note that MCQAG has not provided any details on the referenced independent monitoring of particulate at residences.

It is noted that the haulage route is a public road with multiple emissions sources, not all attributable to the quarry. Without access to testing results referenced in the submission, it is not possible to validate the comments made.

As outlined in the ADA Report and **Appendix 2**, trucks entering and leaving the quarry that are carrying loads will be covered at all times, except during loading and unloading.

As previously discussed, the AQIA modelling results showed that the diesel exhaust emission concentrations (including CO and NO₂) associated with road transport of quarry product would comply with the relevant criteria at all sensitive receivers.

In relation to silica exposure from road transportation, the available data is limited in relation to supporting that health effects, such as silicosis, may occur within the community from product transportation. Any exposure would be significantly lower than within occupational environments (EnRisks, 2020). As outlined above, the AQIA indicated that the estimated maximum annual average RCS concentration at the site boundary were below applicable criterion.

The use of fly ash at the quarry will be in accordance with Coal Ash Exemption 2014 under the POEO Act. As outlined in **Appendix 5**, the enclosed nature of fly ash and lime transport, storage and processing will effectively minimise emissions to air. These practices represent all reasonable and feasible measures for the safe handling, use and transport of products containing fly ash.

The amended Noise Impact Assessment (NIA) purports to claim compliance with various policies and criteria, however the results of the study do not align with lived experiences of impacted residents who reside around the Site and along the proposed haulage route. The lived experiences (as detailed in residents' submissions) during unlawful operations 2019 and earlier included impacts from intrusive noises that include:

- a. experiencing industrial noise imposing upon one's household, including noise of vehicle beepers, noise of jack hammering and rock breaking, noise of truck loading, front end loaders operations, bobcat operations, water truck operations, rattle guns, grinders, horns, drill and blast rigs, tracking machinery, noise of haul truck unloading at primary crusher area.**
- b. noise of train loading, shunting and audible noise of voices from rail workers at along the quarry rail siding, impacting upon and waking their households (and then preventing them from returning to sleep) in the middle of the night.**
- c. lived experiences in relation haulage noise impacts have including: having the unique noise signature (as distinct from other heavy vehicles and light vehicles on the road network) of hundreds and hundreds of unlawful quarry truck (laden and unladen) movements interrupting telephone conversations, interrupting conversations between individuals both inside and outside dwellings and within the village activity centre, forcing residents to move from their outdoor living spaces to inside their dwellings, being woken by unlawful quarry traffic whilst sleeping during the day as a shift worker and being unable to "think" minute by minute as one's existence is continually interrupted and reminded of unlawful quarry truck movements occurring through one's community.**

The NIA (Umwelt, 2021b) has assessed the proposed operations, road and rail traffic impacts associated with the Revised Project in accordance with the:

- NPfI
- ICNG
- RNP
- RING
- VLAMP.

The NIA doesn't indicate that private receptors won't experience noise from the quarry operations or the transportation of product, rather that in most cases the noise meets relevant noise levels (refer to Appendix D of the ADA Report).

The quarry has been in operation since 1914 and has been a source of noise over the period until current day. The previous unlawful operations are noted, however the quarry still has a valid approval and the ability to operate regardless of the current SSD application. While "lived experiences" are relevant, it is important to note that in contrast to past operations, the Revised Project will involve additional mitigation measures and noise impacts will be monitored and regulated under any new approval.

Having regard to the background noise environment and the “new normal” with MCRailwayBQ now operating lawfully, we understand from the caselaw that the above description of noise impacts that would occur under an approval of the ADA can be reasonably considered intrusive noise.

We understand the greater the level of emergence of this type of noise upon impacted receptors, will make the predicted “new quarry” noise levels more noticeable and cause a higher level of impact on the residents’ acoustic amenity than in an environment where the measured background noise level is higher.

As outlined in Section 6.4.2 of the ADA Report, the Npfl documents the procedures to be used to assess the noise from industrial noise sources scheduled under the PoEO Act. The first step in the application of the Npfl involves determining the project noise trigger levels (PNTLs) for the development. PNTLs are not limits but are the benchmark levels above which noise management measures are required to be considered. PNTLs are based on the project intrusiveness noise level and project amenity noise level for a particular location as defined by the Npfl.

The project intrusiveness noise level protects against significant changes in noise levels and is established by reference to existing background noise levels. The project amenity noise level is set based on the approved use of the land and is designed to manage cumulative noise impacts from industry thereby protecting the amenity for particular land uses.

The determination of the PNTLs also takes into consideration the noise levels from an existing development when the development has been operating for more than 10 years. As specific areas within a landscape can have a variety of approved land uses and different acoustic environments, the area surrounding a proposed development will generally have different PNTLs.

The NIA (Umwelt, 2021b) has been undertaken in accordance with the Npfl. As outlined in **Table 5.1**, the baseline considered for the determining the PTNLs for the Revised Project is based on:

- quarry operations: modelling considers the approved operations as outlined in **Section 1.2.1** as the baseline for the assessment
- road traffic: modelling considers no quarry operations as the baseline for the assessment
- train movements on the rail siding associated with the loading of rail wagons are included as an industrial noise source in the assessment of the existing approved operations.

We also note that based on complaints and resident’s submissions and lay witness’ affidavits from court proceedings that the noise impacts generated from the Site and from the proposed scale of haulage would also likely be categorized as offensive noise as defined by the Protection of the Environment Operations Act 1997.

The noise modelled to be generated from the Revised Project is not considered to be offensive as defined by the POEO Act.

Under the POEO Act, offensive noise is defined as:

offensive noise means noise—

(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances—

(i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or

(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.

State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33) requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. An ‘offensive industry’ is one which, even when controls are used, has emissions which result in a significant level of offence.

The *Hazardous and Offensive Development Application Guidelines, Applying SEPP 33* (Department of Planning, 2011), indicates that potentially offensive development could effectively be regarded as development that would require a pollution control licence from the (then) Department of Environment, Climate Change and Water (DECCW) or other public authority. If the licence conditions could not be met, the proposed development would be considered offensive and would not normally be permissible.

The detailed NIA completed for the Revised Project confirms that the proposed mitigation measures will reduce operational noise levels experienced by many residences in close proximity to the existing quarry processing and rail loading area. That said, a number of these close residences will experience day time noise levels that are marginally to moderately above contemporary limits in accordance with the NfPI which are set to protect noise amenity for residences in a locality that interfaces with existing industrial facilities.

The extension of operations in the West Pit, the use of the new access road, and evening and night-time rail loading activities have all been assessed against the more stringent criteria for ‘new development’. There are a number of residences that are predicted to be marginally or moderately impacted, with the three closest residences predicted to experience significant impacts during night-time rail loading activities if they were to take place. In accordance with the DPIE’s Voluntary Land Acquisition and Mitigation Policy (2018), the significant and moderately impacted residences will be subject to proactive noise management and monitoring to guide operations and minimise the potential impacts of the Revised Project. In addition, in response to the EPA submission, Daracon have further considered reasonable and feasible mitigation measure that could be implemented during the period prior to the new access road being constructed. As discussed in **Section 3.1**, the installation of a noise barrier, along with other operational measures, could further mitigate noise impacts during the first 4 years of the Revised Project until the new access road and rail loading facility are constructed.

The detailed road noise assessment confirms that the addition of quarry trucks at the capped maximum daily and hourly rates only results in an exceedance of the RNP criteria at one residence where it was not already calculated to exceed the criteria with the baseline traffic levels. Where the RNP criteria are already exceeded, or is predicted to be exceeded with quarry haulage, the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.

We note (and have been advised by an expert) that the noise environment in the impacted area around the Site and along the haulage route is unique and rural in nature. Under the current baseline, residents in the impacted areas from a noise environment perspective, have the pleasure of their rural amenity to enjoy. Residents around the Site can hear the wind in the trees, the sounds of wildlife and nature and the intermittent noises of light vehicle traffic. Within the village of Paterson under the current “new normal” baseline, residents and visitors in the village also enjoy the beautiful rural village noise environment, free from the noise of hundreds upon hundreds of unlawful class 9 quarry trucks. The ambient noise environment of the village of Paterson (which included occasional passing light vehicles, wind in trees, lawn mowers, birds and insect noise) was brought to the attention of DPIE’s Mr Sprott and Mr McDonough in their visit and meeting with MCQAG committee on the 22nd of June 2021.

In residential, rural and semi-rural areas such as that surrounding the quarry, background noise levels are typically low. However, the project amenity noise levels are a function of the approved land use and independent of the existing acoustic environment.

The project intrusiveness noise level protects against significant changes in noise levels and is established by reference to existing background noise levels. The project amenity noise level is set based on the approved use of the land and is designed to manage cumulative noise impacts from industry thereby protecting the amenity for particular land uses.

The determination of the PNTLs also takes into consideration the noise levels from an existing development when the development has been operating for more than 10 years. As specific areas within a landscape can have a variety of approved land uses and different acoustic environments, the area surrounding a proposed development will generally have different PNTLs.

The NIA has been undertaken in accordance with the Npfl, including consideration of the appropriate background levels. As outlined in **Table 5.1**, the baseline considered for the determining the PNTLs for the Revised Project is based on the approved operations (as outlined in **Section 1.2.1**) or no operations.

We are advised (and it is stated on record under oath in NSW Land & Environment Court transcripts by expert witnesses) that the noise models used to assess the criteria and impacts of traffic generating developments are based on steady state traffic flows in an urban setting. There is no provision in the models for the acceleration, braking or empty bin noises that the quarry traffic would make within a rural village traffic stream and on a type of road network through Paterson.

The information about noise models is correct. Noise models are typically deterministic models that represent a steady-state condition. The dynamic operation of an industrial noise source or flow of traffic is therefore represented as a ‘snapshot’ in time. As a result, a road traffic model cannot account for an uneven road surface, the dynamic flow of traffic acceleration or braking, the condition of individual vehicles or driver behaviour. The use of a deterministic model allows for the comparative assessment of road traffic noise between locations and changes in traffic flow volumes independent of the assessing body. In recognition of the dynamic nature of traffic flow, Daracon will implement the Driver Code of Conduct, maintenance requirement for vehicles transporting quarry products and contribute to the upkeep of the road network through a VPA.

We submit that under an approval of the ADA new noise would be emanating from the Site and the haulage route. It will be noise that residents will for the first time be hearing in a lawful context. For residents who are new to the area it will be noise that is heard for the first time. This new noise will be of a greater emergence from a very low background noise environment. This has a twofold impact. Firstly, for residents residing around the Site and haulage route who enjoy the pleasure of their rural amenity whilst currently co-existing with MCRailwayBQ they will most likely not be in favour of that new noise source. Secondly for residents who have experience and memories of historical noise impacts from past unlawful activities by the Proponent and Railcorp, these noise sources will serve as a constant reminder of what was previously unacceptably endured. The net result is residents will be adversely affected acoustically and this will result in both noise impacts and unacceptable social impacts.

We submit to the Minister that in spite of technical studies purportedly finding compliance with policies and guidelines, we request that the Minister must consider and assess the impacts of persistent annoyance and consequential negative social impacts that will result from the intrusive noise levels and the cumulative noise levels that are proposed in the ADA.

As outlined in **Section 1.2.1**, the quarry has a valid approval and elements of the operation will not be new. Quarrying and processing activities are approved, with intensity of these activities proposed to change as a result of the Revised Project in some respects. Similarly, road haulage of up to 150,000 t is approved without any hourly or daily limit on trucking numbers.

The NIA has appropriately assessed noise impacts associated with the Revised Project in accordance with relevant guidelines.

The SIA (refer to Appendix O of the ADA Report) considers the outcomes of the NIA in terms of impacts to social amenity.

We have included a MCQAG commissioned report in Attachment 7 – Noise Impact Assessment Peer Review which contains the results of an acoustic review. 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.

Responses to the MCQAG noise peer review submission is provided in **Appendix 8**.

The peer review commission by MCQAG has identified some minor technical differences in the interpretation of the Npfl and queries some aspects of the technical presentation of the model input data and associated modelling methods. However, the peer review did not identify any difference in the interpretation of the Npfl or in modelling methodology that would be considered a departure from the approved methods for the assessment of industrial noise, road traffic noise or rail noise.

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.

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.

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.

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.

The various definitions of social amenity as put forward above are noted and acknowledged.

The 2017 NSW SIA Guideline includes amenity and changes to amenity under the broader social impact category of “surroundings” which includes access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity. It also notes that when considering perceptions of adverse impacts on amenity, an evaluation must be made of the reasonableness of those perceptions. This evaluation involves ‘the identification of evidence that can be objectively assessed to ascertain whether it supports a factual finding of an adverse effect on amenity...’: *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 133.

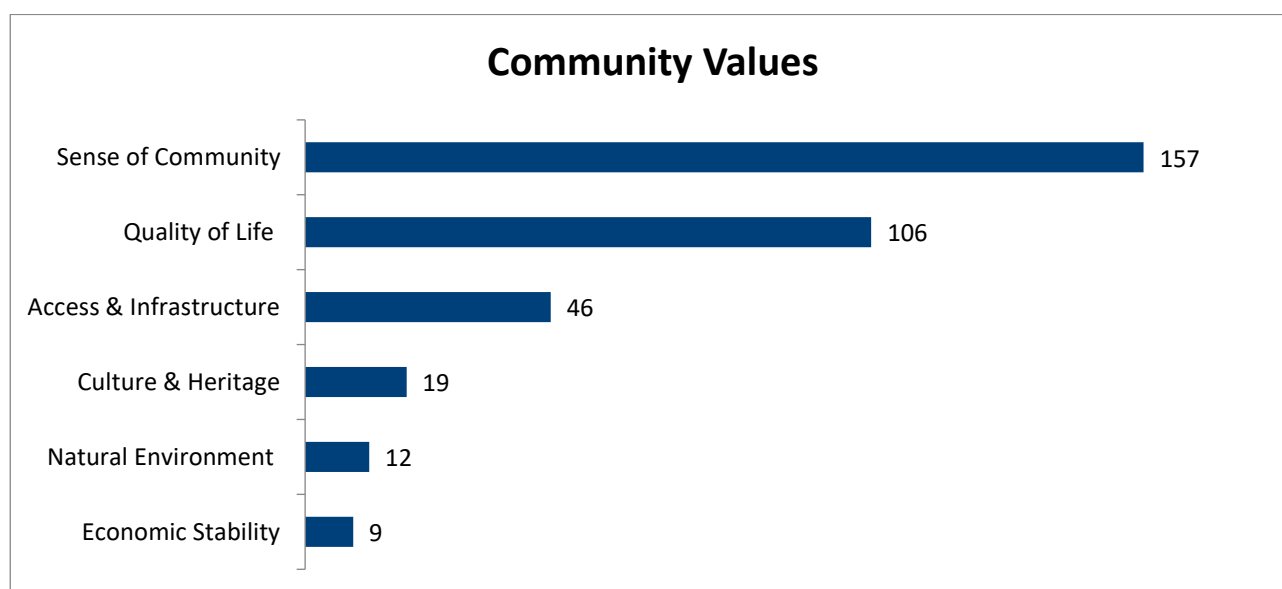
Section 7.4 of the SIA notes that whilst the technical assessments were conducted in accordance with relevant government guidelines, and have identified that the Revised Project is not anticipated to have a significant impact on the amenity of Paterson Village with respect for example to road traffic noise, air quality and vibration from truck haulage, it is nevertheless clear that for those residing along the haul route within Paterson Village, potential social amenity impacts and disruptions remain of concern to members of the community. Impacts related to a changing sense of place/sense of community as a result of the Revised Project have also been addressed in this section.

Whilst the ADA and SIA claim to have assessed the risk of impacts on amenity. The ADA fails to take into account the social, environmental and cultural structure of Martins Creek, Vacy, Paterson, Bolwarra Heights, Butterwick and Brandy Hill areas. While recognising that Paterson and the MCRailwayBQ have satisfactorily co-existed for nearly 100 years and the quarry being a source of hard rock railway ballast, the intensity of the current proposal, if approved, will compromise and destroy the social amenity described above. This is confirmed in at para 8 page 261 of the SIA with the statement:” It is acknowledged that despite the above outcomes from the various technical assessments related to traffic and truck movements, for the purposes of the assessment of social impacts, based on feedback from the community, these outcomes do not make the predicted impacts associated with traffic on social amenity and surroundings any more tolerable by those affected.”

Furthermore, the proposed mitigations described in the SIA at section 7.3.1.3 seek to mitigate the impacts of the operation proposed in 2016 EIS down to the operation proposed now in the exhibited ADA. These are not mitigations; these are project parameters which if approved will cause the unacceptable impacts already well documented by residents and the SIA authors own analysis.

The SIA acknowledges the existing structures and values of the broader Project Area and its particular characteristics with respect to natural attractions, built heritage and villages, strong sense of regional identity and community. Existing values, issues and aspirations for both the region more broadly, and specifically the Dungog and Maitland LGAs, are outlined for example in Section 5.12 of the SIA where it is noted the strong community spirit and pride in cultural heritage, local history, natural landscape and a safe community based on a review of relevant strategic planning documents (e.g. Community Strategic Plan 2012-2030 (updated in 2018), and community consultation to support these.

The significance of more local values have also been documented within Section 5.12.4 of the SIA where community stakeholders noted the following themes when discussing what they most valued about living in their community (refer to **Graph 5.1**).



Graph 5.1 What do you Most Value about Living in this Community? Frequency

Source: Umwelt (2018)

Note: Multiple responses allowed

It also noted in Section 7.4 of the SIA that during discussions, consultation participants noted the high value attached to rural amenity (peace, tranquillity) and the lifestyle the area provides and were concerned that the operational impacts (dust, noise) and the number of trucks traveling the haul route would fundamentally change the nature and character of the area, in particular within Paterson and Bolwarra and how they enjoyed their space. The operation of the quarry of the scale proposed was seen by a number of those consulted to be at odds with these values.

As is clearly highlighted in the SIA, social amenity and changes to sense of community impacts were seen to be the most significant (high) social risks of the Revised Project, when based on the consideration of both stakeholder perceptions and mitigated technical risk analysis. Potential impacts on amenity and sense of community were considered to be as a direct result of a number of Revised Project activities including most notably trucks and traffic movements (including associated volumes, disruptions, damage to infrastructure, public safety risks, cumulative impacts, noise and changes to air quality) and for those in proximity to onsite quarrying activities (as a result of noise, blasting vibrations and changes to air quality).

As outlined in Section 7.3 and Section 7.4 of the SIA, Daracon have undertaken significant changes to the Original Project parameters and identified a range of mitigation measures to reduce these identified impacts associated with the Revised Project. These changes have also taken into consideration mitigation and enhancement strategies identified by stakeholders during consultation and engagement.

The most relevant measures to address the concerns raised around loss of social amenity have been:

- reduced production and road haulage rates
- avoidance of road haulage at particular times
- revised operating hours of the quarry (refer to Section 2.1 of the SIA and Section 2.0 of the ADA for more detail on these measures).

In addition to the above, in order to minimise impacts on social amenity and sense of community, a range of other mitigation measures have been committed to by Daracon which have been included in Table 7.6, Table 7.9, Table 7.13 and Table 7.15 of the SIA and include for example, further reduction of truck movements during times of known (pre advised) community events/funerals; restricted use of compression braking and reduced vehicle speeds; regular monitoring, spot checks and observation of driver behaviour; incorporation of noise bund, walls, barriers and other noise attenuation; extension of rail spur to move loading operations from receivers; construction of a dedicated access road onto Dungog Road removing trucks off Station Street; and limited operations during periods of adverse weather conditions and a refocused community sponsorship program that focuses on identified areas of need, including for example, amenity projects.

It is also acknowledged within the SIA that despite identified project changes and proposed mitigation measures, the residual impacts on social amenity and sense of community are still high for some stakeholder groups, most notably residents and businesses of Paterson village, proximal quarry neighbours and other localities along the haul route, with the level of impact varying depending on the stakeholder location, the stage of the Revised Project and the aspect causing the impact.

Given that impacts on social amenity and sense of community have been assessed as high for some stakeholders, Daracon have committed to additional strategies to monitor, and where possible manage, these social impacts to be further defined in a Social Impact Management Plan (SIMP) should the Revised Project be approved (refer to Section 8 of the SIA).

Daracon have also committed to:

- The development of a more structured ongoing Community Engagement Strategy that affords further development of company-community relationships through regular and effective engagement and communication
- A trial of a Community Monitoring or Social Impact Diary whereby representative residents along the transport route and proximal to the quarry are asked to record for example, traffic issues in a diary format for feedback to the CCC or to the Daracon Community Representative as appropriate.
- A revised Community Contributions and Sponsorship Program (in addition to the VPA that is planned to be established with DSC) with funding focused on issues arising from the SIA and identified community needs, including the maintenance and enhancement of heritage values and support for local organisations for the implementation of projects to enhance sense of amenity.

It is reasonable to expect that perceived social amenity impacts in this particular case will be more significant than impacts actually experienced. Perceived impacts are likely to be influenced by experience of previous operations, while the Revised Project proposes additional mitigation measures, reduced extraction rates and will be more highly regulated than previous operations. Given some of the measures proposed, Daracon will also be more engaged with the community and will be taking measures to address and manage social impacts arising from the Revised Project. The 2017 NSW SIA Guideline states that applicants should make clear how negative social impacts will be managed, with a particular focus on those that are evaluated as significant. In the first instance, applicants should consider measures to avoid the impact by amending the project design. If avoidance is not possible, measures to reduce the impact (for example, change how the project is designed, constructed, operated or decommissioned) or to limit its influence. The resulting mitigation measures can be:

- performance based
- prescriptive
- management based.

As noted in the SIA Guideline (DPE, 2017), some impact strategies may differ in their effectiveness and/or ability to alleviate impacts, with some residual social impacts remaining. Furthermore, certain measures may collectively address a number of different negative social impacts and potentially enhance a number of positive impacts.

As identified in Section 3.5.1 of the SIA, Daracon has sought to avoid impacts by completing further project feasibility investigations, detailed quarry design refinements and explored potential additional mitigation measures, taking into consideration the outcomes of engagement activities as they have been available. Refinements and mitigation measures have also been identified via a review of similar projects as outlined in Section 5.5.1 of the SIA.

As identified throughout Section 7 of the SIA, a number of mitigation and enhancement measures were proposed by the community during the engagement activities and were subsequently explored by the project team to address project impacts. Consequently, a number of further iterative refinements have been made to the project based on community feedback. Where community identified mechanisms have not been adopted, the reasons why this has not been possible has also been outlined as relevant in Section 7 of the SIA, with this further explanation provided during various engagement activities, most notably the topic specific CAFs.

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.

Her Honour Justice Jagot 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.

The consent authority must have regard to the matters set out in section 4.15 of the EP&A Act (previously section 79C(1)). The matters for consideration by the consent authority and where they have been addressed in the ADA Report are provided in **Table 5.2**.

Table 5.2 Section 4.15 Matters for Consideration

Matters for Consideration	Relevant Section of ADA Report
(a) The provisions of: (i) Any environmental planning instrument	Sections 4.2.1 and 4.2.2
(ii) Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved)	Sections 4.2.2 and 4.2.3
(iii) Any development control plan	Not applicable due to operation of Clause 11 of SRD SEPP.
(iiia) Any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F	Not applicable. Planning agreements not yet entered into, however discussions with DSC and MCC have commenced.
(iv) The regulations (to the extent that they prescribe matters for the purposes of this paragraph)	Section 4.2.1
(v) Any coastal zone management plan (within the meaning of the Coastal Protection Act 1979) that applies to the land to which the development application relates	Not applicable. Revised Project not subject to any coastal management plan.
(b) The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	Section 6.0, Appendices C to N
(c) The suitability of the site for the development	Sections 6.2 and 9.2
(d) Any submissions made in accordance with this Act or the regulations	Part-B - Sections 12.0 to 14.0
(e) The public interest	Section 9.0

In accordance with Section 4.15(1)(b), the likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality have been undertaken. An assessment of amenity has been undertaken as part of relevant technical assessments, where relevant, and in the SIA (refer to Appendix O of the ADA Report). The ADA does not rely solely on compliance with relevant guidelines, but further considers and proposes measures to address potential amenity impacts.

As discussed in Section 6.13 of the ADA Report, in order to prioritise the identified social impacts, a risk-based framework has been adopted. Traditionally, the technical risk assessment process has not been greatly amenable to the inclusion of social impacts. One key adaptation of the approach is that both the technical assessment outcomes (technical ratings) and stakeholder reported views of social impacts are assessed.

Stakeholder views and perceptions regarding the significance of risk/impact is considered an independent and no less valid component of risk. It is worth noting that stakeholder perceptions vary between individuals and groups with no single perception more important than another. However, for the purpose of assessment the most common, or what is judged to be the general perception/sentiment of a stakeholder group has been used as a measure of perceived stakeholder risk or impact. These views have been presented in risk tables as stakeholder perceived significance.

The integration of the outcomes of technical ranking (severity) with stakeholder ranking of impacts, thus affords a true integration of expert and local knowledge in SIA and enables both types of risk to be addressed in the development of impact mitigation, amelioration and enhancement strategies. Such an approach is acknowledged in the SIA Guidelines in relation to estimating material effects.

Prioritising impacts in this integrated manner ensures that appropriate assessment and mitigation strategies can be developed that not only address impacts that may require more technical management but also those impacts that are considered by stakeholders as of high risk/importance/concern. Stakeholder concerns regarding an impact are just as important to manage as they have the potential to result in elevated levels of community concerns, complaints and grievances if not addressed appropriately.

It is noted that the reference to Bungonia is not directly comparable to the Revised Project. The Revised Project proposes to utilise a Regional Road, being Main Road 101, which connects from East Maitland (at the New England Highway) via Bolwarra, Paterson, Wallarobba, Wirragulla, Dungog, Dingadee and Walshpool Bridge to The Bucketts Way. Regional Roads are intended to perform an intermediate function between the main arterial network of State Roads and Council controlled Local Roads.

In addition, it is understood that DSC have made an application for Main Road 101 to become a State Road based on the link that it provides from Maitland to Gloucester via Dungog and that it provides an essential link between the quarry and the New England Highway (DSC 2014).

His Honour Justice Molesworth in *Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2)* [2018] NSWLEC 153 held [324] that that increasing truck traffic to (improperly) accommodate the transport of greatly more quarry product by road, can be presumed, as a starting consideration, to likely interfere with the amenity of the neighbourhood.

Based on lived experiences (as detailed in video evidence presented to DPIE’s Mr Sprott and Mr McDonough on the 22 June 2021) of the trucking scale now proposed in the ADA, would result in numerous movements and convoys of class 9 quarry trucks moving through the village of Paterson. Whilst the “driver code of conduct” likely prohibits the convoying of trucks, the real-world reality at 40 trucks per hour and 280 trucks per day means that convoying or closely spaced trucks is unavoidable and “almost certain to occur” as was seen in the video evidence. The physical presence of class 9 trucks of that size and that intensity serves to divide the historic rural village of Paterson in two. A village that in the current baseline is one where visitors and residents alike move across, through and around the village without obstruction this is in some way the essence of what makes rural village life so special and valued. Setting aside the Traffic Impact Assessment and Noise Impact Assessment results, the ADA and SIA have failed to assess the physical, amenity and social impacts that will inevitably result from the “physical presence” of so many Class 9 quarry trucks on an hourly and daily basis. We request the Minister require the Proponent to detail that impact (if able) and stipulate what further mitigations will be implemented to manage it.

The submission references the peak heavy vehicle movements. In response to community concern, the Revised Project restricts the peak of 280 trucks per day to only occur for up to 50 days per year otherwise up to 100 laden trucks per day (200 movements), with the hourly peak to consist of:

- up to 20 laden trucks per hour (40 movements), Monday to Friday between 7.00am and 3.00pm
- up to 15 laden trucks per hour (30 movements), Monday to Friday between 3.00pm and 6.00pm to avoid higher community traffic / school pick up times.

There will be no road haulage of product on Saturdays (or weekend or public holidays).

Daracon has committed to explore additional opportunities to further monitor driver conduct and truck convoying, as suggested by the community, including fleet management technologies as they become available and GPS monitoring for non-Daracon vehicles. It is not considered that convoying is unavoidable or “almost certain to occur” for trucks operating under the Daracon Code of Conduct. It is noted that trucks from quarries located elsewhere in the Hunter Valley deliver road and construction material for use in the local area. Such trucks have been observed to travel in convoy on occasions but obviously Daracon has no control over such transport practices by other parties.

The SIA has acknowledged the potential impacts associated with the “physical presence” of truck movements through the village of Paterson, and in fact along the entire haul route in Section 7.3.1, with other impacts on social amenity and surroundings, including those related to truck movements addressed and assessed at Sections 7.3.2, 7.3.3 and 7.3.4 of the SIA (refer to Appendix O of the ADA Report). Similarly potential impacts on sense of community, including disruptions in daily living and movement patterns largely related to the traffic movements associated with the Revised Project; disruptions in social and community networks; diminishing community values and a potential movement of people out of the area (population outflux) due to these impacts have been identified and assessed.

In relation to amenity impacts the ADA and SIA exhibit an unfortunate circular reference. The impacts from trucking are detailed in the SIA and the mitigations for amenity impacts are provided as being the operational scale parameters proposed in the ADA justified in part by technical studies on noise, air quality and vibration.

a. Based on “lived experiences” the hourly and daily scale of trucking movements proposed will result in unacceptable impacts to rural and village amenity of numerous residents and financial members. When one has regard for the lawful baseline (not the 2016 EIS nor historical unlawful operations). Except for referencing hypothetical future scenarios where “more product may be transported by rail” and mentioning administrative (and at times unenforceable) controls via a driver code of conduct nowhere has the SIA proposed or assessed other potential mitigations to reduce the impacts on amenity in spite of numerous requests by residents at CAF forums to assess and implement other reasonable and feasible mitigations. We request that the Minister require the proponent to assess all likely impacts and all aspects of amenity that the impacted community so values. We request the Minister to consider the impacts on amenity of the Proposal be included as relevant matters within the decision-making process.

The identified lived experiences of the community are documented throughout the SIA and more specifically and extensively throughout Section 6 (refer to Appendix O of the ADA Report).

Stakeholders lived experiences have been expressed through their views on significance of potential impacts, which have informed the assessment of social impacts and associated risk ranking tables presented throughout Section 7 of the SIA. Section 7.1 of the SIA notes that the assessment and prediction of social impacts has included consideration of stakeholder reported views of social impacts.

In summary, the evaluation of social impacts presented throughout Section 7 of the SIA has drawn on consideration of community experiences to date and reported experiences, views and perceptions as provided through direct engagement for the SIA as well as a range of other data sources including outcomes of the technical studies for the Revised Project and social baseline data.

Each of the potential identified impacts have been further assessed and their significance evaluated taking into consideration who is expected to be affected (including their level of concern relating to the impact), the timing in the Revised Project that such an impact may be experienced, the extent, duration, severity and sensitivity of the impact, and the consequence of the potential social impact and its likelihood of occurring. Consequence definitions have also been provided to assist this evaluation (refer to Table 7.3 of the SIA).

Changes in stakeholder views, including how they were experiencing impacts associated with the quarry, between Round 1 and Round 2 were also recorded.

All of the above context has been included and considered within the assessment of social impacts. The evaluation of risk and impacts have not been skewed as evidenced by the high proportion of the identified impacts which have still been assessed as high (for some within the community), post mitigation.

By necessity, as part of the ADA process, the proposals for mitigation and management as put forward throughout Section 7 of the SIA include changes to the Original Project. Clear documentation of proposed mitigation measures is also consistent with the 2017 SIA Guideline which requires that applicants should make clear how negative social impacts will be managed, particularly those evaluated as significant and in

the first instance, applicants should consider measures to avoid the impact by amending the project design. If avoidance is not possible, measures to reduce the impact or to limit its influence should be implemented.

Changes to project design and parameters as originally put forward in the Original Project EIS have formed a key component to avoid, minimise and manage social impacts in line with other technical assessments that have been included in the ADA Report.

It is not true to state that “nowhere has the SIA proposed or assessed other potential mitigations to reduce the impacts on amenity”. Daracon has committed to a range of mechanisms to address impacts on social amenity including for example reductions in speed limits, restrictions of truck movements between 3.00pm and 6.00pm to avoid higher community traffic / school pick up times and planning quarry activities, and revising haulage as required, around days when there is expected to be extra traffic within Paterson, i.e. due to a funeral or pre-arranged significant community events, e.g. Tocal Field days, car show events.

In addition to these measures, Daracon seeks to increase transparency, monitoring and enforcement of Drivers Code of Conduct commitments through the following:

- Regular monitoring of driver conduct and commissioning an independent and random monitoring of driver behaviour and adherence to the Code of Conduct three times per year in the first year of operation with guidance sought from the CCC by the independent auditor, on key focus for this independent monitoring.
- Receipt of dashcam evidence provided by the community and draw upon on GPS tracking records to validate behaviour and vehicle responsible for management as per the Driver Code of Conduct.
- Provision of a Camera Monitoring Station at the intersection of King and Duke Streets to enable identification trucks through Paterson to allow for the company to quickly resolve truck related interactions associated with the quarry (including Daracon and contractor trucks) by correlation of number plates with weighbridge records. Outcomes of camera monitoring in response to a complaint will be communicated to the community via the CCC.
- Implementing a trial of a community monitoring diary to be provided to residents proximate to the quarry and along the haulage route to record their observations and experiences of truck movements and driver behaviour to be provided to Daracon as part of their broader monitoring regime.
- Continue to implement the detailed monitoring system put in place in October 2018 when the company was required to operate the quarry in accordance with various versions of an Interim Environmental Management Plan (IEMP).
- Monthly reporting of truck numbers over the weighbridge on the Daracon website for the first two years of operation with the regularity of this requirement after two years to be reviewed in consultation with the Community Consultative Committee (CCC) and reduced to quarterly (depending on identified need).
- Continued implementation of Daracon’s complaints management process, which:
 - details the process for receiving, managing, investigating and resolving the various forms of complaint from the community and other stakeholders
 - outlines the communication for addressing and resolving complaints seeking to minimise recurrence

- outlines the process of escalation and mediation, if required.

The SIA report details that, it is likely that the Revised Project is contributing to mental health issues for some residents and landholders in the locality. In spite of numerous residents making admissions during round 1 and round 2 Social Impact interviews as to the mental health impacts they have experienced, the report does not disclose that the past unlawful operations (the scale now being proposed) did most definitely have mental health impacts affecting many people across a widespread area.

The SIA recognises that health concerns related to increased stress and anxiety may be experienced by local residents, with mental health issues also noted by residents and landholders in the locality in relation to the Revised Project. Section 6.9 of the SIA notes that health impacts were raised by a small number of consulted stakeholders (3 in Round 1 and 11 in Round 2) relating to current and proposed future quarrying operations, including the effect of quarry operations on stress and anxiety levels and possible impacts to their physical health. Section 6.9 of the SIA also reports that mental health issues were noted in the context of anxiety and stress (14) associated with the inability to enjoy the general amenity of the area, anxiety caused by driving on the roads and also financial concerns about the impact that the Revised Project may have on the value of their homes or businesses. Sleep disruption, as a result of noise from the Revised Project, was also raised when discussing mental health effects.

Physical and mental health also had lower levels of concern ratings compared to other issues when presented as a prompted issue during Round One consultation activities.

It is considered that the SIA reports the results of the consultation activities correctly and appropriately.

It is important to note that the Revised Project does not seek approval for the scale of operations occurring prior to the Court proceedings. In particular the now proposed maximum extraction rate of 1.1 Mtpa is less than the peak production rate of approximately 1.15 Mt in 2013-2014 and the proposed maximum road haulage rate of 500,000 tpa is less than half the peak road haulage rate of 1.1 Mt that was recorded in the same year.

The author of the SIA has incorrectly ranked the health impact scoring relating to health impacts, stating in Section 7.5.1.2 that It was likely health impacts will occur. This statement is erroneous the correct definition of the probability of this occurrence is that it is Almost certain (e.g., it has happened before and will happen again based on the Proposal).

Section 7.5.1.2 of the SIA has noted to the reported mental health issues for some residents and landholders in the locality. The assessment has considered that is “likely” rather than “almost certain” because the assessment has taken into consideration the proposed refinements to the Revised Project such as reduced truck movements and changes to the scale of operations. It also considers that project design changes and associated proposed mitigation measures with respect to continued ongoing engagement and targeted information provision, should the Revised Project be approved, may result in some relief from that stress being felt. However, it is also acknowledged that it will take some time for community confidence in the management of project impacts to be demonstrated and a sense of trust in Daracon’s ability to manage and monitor these effectively and that community concerns may persist regardless of the Revised Project’s compliance and how impacts are experienced. To assist in the reduction of stress and associated potential

impacts on the mental health of the community, Daracon is committed to implementing the following strategies:

- Establishing regular ongoing community engagement (open door policy) in relation to impact monitoring and management activities and maintaining this throughout the life of the Revised Project.
- Ongoing and transparent provision of environmental monitoring results to the community.
- Continued implementation of Daracon's complaints management process.

We have confidential reports from numerous residents suffering from mental health issues directly attributed to the past unlawful scale of operations now being sought approval for under the ADA. Those residents reside in and around the Site at Vacy, within the village of Paterson, Bolwarra, Bolwarra Heights and Brandy Hill. Reports include anxiety disorders and symptoms of anxiety and depressive moods along with increased stress brought on by the scale of trucking on an hourly and daily basis, from the hopeless amenity impact being imposed upon them and their households and their local communities. We also note a number of reported cases where residents suffering from PTSD who reside around the Site were impacted and triggered by unlawful blasting events occurring at the Site.

The reports referenced in the submission have not been provided and a direct response cannot be provided.

As reported above, the SIA recognises that health concerns related to increased stress and anxiety may be experienced by local residents, with mental health issues also noted by residents and landholders in the locality in relation to the Revised Project. Section 6.9 of the SIA notes that health impacts were raised by a small number of consulted stakeholders (3 in Round 1 and 11 in Round 2) relating to current and proposed future quarrying operations, including the effect of quarry operations on stress and anxiety levels and possible impacts to their physical health. Section 6.9 of the SIA also reports that mental health issues were noted in the context of anxiety and stress (14) associated with the inability to enjoy the general amenity of the area, anxiety caused by driving on the roads and also financial concerns about the impact that the Revised Project may have on the value of their homes or businesses. Sleep disruption, as a result of noise from the Revised Project was also raised when discussing mental health effects with the times at which the trucks started operating a noted source of concern for consulted stakeholders in Round One (18) with comments made with regards to the convoy nature in which trucks had previously been lining up outside the quarry gates or travelling through Paterson at early hours of the morning and these being responsible for sleep disturbances due to both the noise emissions and also visual impacts from shining lights.

Section 7.5.1.1 also notes that mental health impacts were identified by stakeholders during engagement for the SIA as being associated with the Revised Project, with some stating that they were already experiencing stress and anxiety relating to existing project activities and operations.

In response to impacts on mental health resulting from sleep disturbances associated with early truck movements through Paterson Village, Daracon have committed to no trucks through Paterson Village before 6.45 am and the start time of the quarry has now been revised to 7.00 am (from 6am) Monday to Saturday.

With regard to the submission's comments regarding a number of reported cases where residents residing around the quarry suffered from PTSD triggered by blasting events occurring at the quarry, during previous operations blasting was monitored by both Daracon and the EPA and was found to be below relevant levels to minimise amenity impacts. Even at maximum production levels during that time, blasting occurred at frequencies of approximately 2 per month.

In addition, Daracon will continue to consult with residents via letter box drops to inform them of the blast time the following day in addition, for those that request, an SMS or email on the day of the blast notifying neighbours of the time of day the blast is to occur. This process will allow community members that are particularly sensitive to blasting to be prepared for the upcoming blast to occur at the scheduled time.

We have confirmed those residents would be willing to provide confidential medical records to DPIE to support these claims. Two case study examples of the mental health issues arising in our community due to Martins Creek Quarry operations that have been reported to our committee include but are not limited to;

- **An impacted resident reported onsets of suicidal ideation beginning in 2014 at the peak of Daracon's unlawful operations. The resident whose dwelling and family were directly impacted from haulage traffic and air quality impacts emanating from the Site states that those ideations have now subsided since Daracon has begun complying with their lawful consent conditions. The resident also reports that since the exhibition process of the ADA has begun, there is what seems to be a hopeless likelihood of the scale of truck movements and associated impacts returning to their household and lives as they were between 2012 and 2019, their senses of anxiety, helpless and suicidal ideations are now returning.**

It is noted that the scale of operations proposed as part of the ADA are generally lower than that experienced during 2012 to 2018 and significantly less than the maximum road haulage levels during that time (500,000 tpa vs a maximum of 1.1 Mtpa recorded in 2013-2014). Daracon have committed to reduce the extraction limits, operational hours and truck movements as part of the Revised Project compared to the Original Project. It is acknowledged that the Revised Project represents an increase compared to the approved operations, but that increase must be considered in conjunction with the mitigation measures proposed and not on the basis that approval is sought for operations as they were occurring prior to the Court proceedings.

The stakeholder views and perceptions regarding the significance of mental health impacts is also acknowledged with the stakeholder perceived social impact/sensitivity ranking for this impact being noted as "high" in Table 7.17 of the SIA (refer to Appendix O of the ADA Report).

An impacted resident whose dwelling is only less than 10m away from the proposed haulage route within the village of Paterson reported that during the peak of unlawful operations, at times when 20 to 30 trucks were transiting past their house day in and day out, the individual had a nervous breakdown and has since been diagnosed with an anxiety disorder. The anxiety attacks are exacerbated from what were unlawful movements of quarry trucks through Paterson village. At the peak of symptoms, the resident would call their partner crying multiple times a day, unable to function as their house shook from truck movements minute by minute.

Their telephone conversations were interrupted by the noise of accelerating trucks, their thinking and thought processes were interrupted by the convoys of passing trucks. They stated their daily routine was constrained to remaining inside in a room located within the dwelling as far away from the road verge as was possible whilst the trucks were running. Their once pleasant rural backyard was unusable whilst the trucks were running. The resident notes a direct correlation of anxiety attacks and quarry truck movements with operations now being conducted lawfully from the Site the resident reports a new sense of mental wellbeing. They have noted that they continue to have anxiety attack symptoms that include hot flashes and chest pains at the sight and sound of a quarry truck taking them back to the time when dozens of trucks per hour turned their life in to a living hell.

The experience of this resident is noted. As noted in the 2017 NSW SIA Guideline, social impacts vary in their nature, and can be experienced differently:

- by different people and groups within a community
- by different communities
- at different times and stages of the project (for example, construction and commissioning, operation, decommissioning and closure, and post closure management).

It is important also to acknowledge that the submission notes that these impacts were being experienced during the peak of operations occurring prior to the Court proceedings. The currently proposed operations will be at a much lower scale than those that would have been previously experienced by this resident and will be managed and highly regulated to minimise impacts.

The Proponent and SIA author's suggested mitigations in relation to mental health impacts are non-functional at best and fanciful at worst. We rhetorically ask the following questions:

- **how does the proposed mitigation of having an "open door policy in relation to impact monitoring and management activities" and "Ongoing and transparent provision of environmental monitoring results to the community" ameliorate mental health impacts affecting impacted residents that will have to live with 200 to 280 trucks per day traversing past their residential households for the next 25 years?**

The management measures referred to will be applied in combination with the significant changes to the aspects of the Revised Project that have been identified by consulted stakeholders as causing the greatest stress and anxiety, i.e. the movement of truck and the times at which those trucks move through the village. Management and community consultation measures are proposed to ensure that any non-compliances causing unexpected impacts on the community can be addressed quickly and effectively. Those measures also ensure that Daracon will remain accountable to the community and that community members have a clear and effective avenue to resolve issues that may be causing stress and anxiety.

MCQAG committee has sought advice from an expert psychologist who has reviewed the ADA and proposed mitigations and is familiar with the impacts that occurred during the unlawful operations at the Site between 2012 and 2019. The expert concurs in MCQAG's position: that the mitigations proposed with the ADA are unacceptable and deficient. Their advice for the only mitigation and effective management strategies are as follows:

- **Reduce the proposed scale of operations at the Site**
- **Reduce (by substitution or elimination via bypass, alternate routes and/or rail) the proposed scale of truck movements emanating from the Site**
- **Prescription of psychotropic medication**
- **Provision of psychotherapy and/or counselling services**
- **Exclusion, by moving the impacted resident away from the impacted area.**

The advice provided to MCQAG cannot be verified at the time of preparation of this report. It is noted that the scale of operations proposed as part of the ADA are lower than that experienced during 2012 to 2018 and significantly less than the maximum road haulage levels during that time (500,000 tpa vs a maximum of 1.1 Mtpa recorded in 2013-2014).

It is also already reported in the SIA that Daracon will ensure that the company's community contributions and sponsorship program moving forward will have a more targeted focus on the quarry that is more strategically focused on the allocation of contributions and donations and allows the company to work with the local community to effectively manage the negative impacts of the operation and to enhance any potential benefits of the quarry.

Daracon considers itself to be part of the community and seeks to ensure that it can contribute to the community in positive ways and in accordance with the needs of the community. While negotiations are ongoing, Daracon has currently offered under a VPA with DSC to contribute \$40,000 per year to a Community Benefits and Wellbeing Fund, based on the current proposed production and road haulage volumes. The expenditure of those funds will involve assessment of applications and distribution of donations to community-led initiatives, with a clear set of criteria for assessment of applications with funding criteria aligning with the areas of focus arising from the SIA and identified community needs. Funding criteria will be established in collaboration with key stakeholders and with the CCC once formed.

If the Revised Project is approved, for the first 12 months following project approval, Daracon propose to commit part of the community funds to provide access for the local community to the Daracon Employee Assistance Program (EAP) service, or independent EAP service. Effectively, this would provide those who identify as a community member proximate to the quarry or proposed haul route, with confidential access to up to 3 sessions with a qualified psychologist. The benefit of this mitigation measure will be reviewed at 12 months, having regard to the level of usage of the service, in consultation with the CCC. The investment for the EAP will be accounted as part of the above mentioned value of the Community Benefits and Wellbeing Fund. Therefore, dependent on need, future funding under this program may also be directed to support for mental health service programs in the locality.

MCQAG committee submits that the impacts to mental health based on lived experiences of unlawful operations that occurred at a comparable scale to those now proposed within the ADA are completely unacceptable. Furthermore, we submit the health impacts and mitigations outlined in the ADA are completely inadequate. We request the Minister to require the Proponent to make a meaningful assessment of mental health impacts of the Proposal and detail what of the effective mitigations listed above the Proponent proposes to put in place for impacted residents.

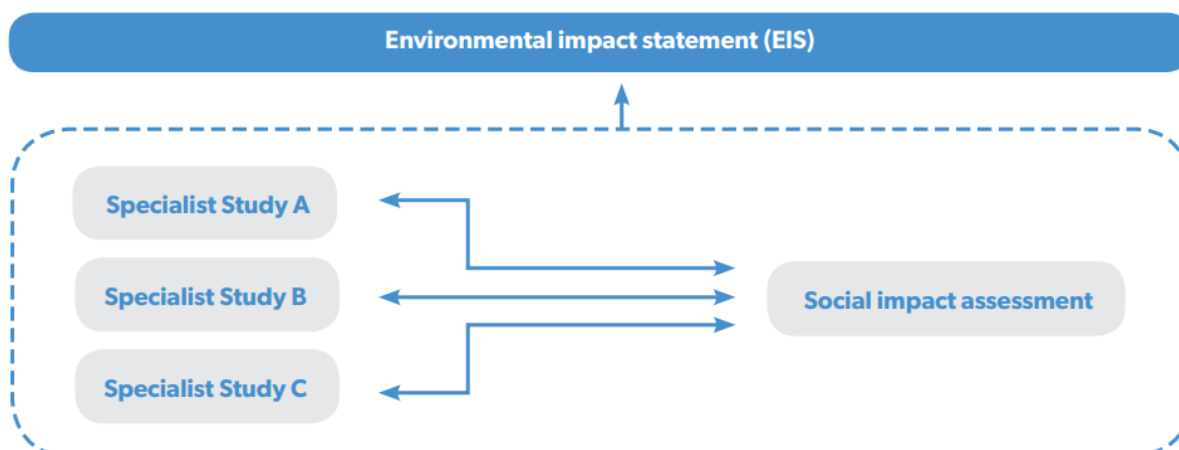
Noted. Please refer to the above responses.

MCQAG committee has grave concerns in relation to the content of the ADA and SIA in relation to social impacts. The Proponent’s environmental consultant has taken a strategic approach to focus only on the impacts that can be resolved by technical studies involving road safety, noise, air quality and vibration. And conversely, the SIA author has focused on measuring social impacts and scoring social impacts within the bounds of those technical impacts. The issue MCQAG has with this is (as case law has confirmed and as detailed throughout this submission) there are far more impacts that can’t be resolved, solved or explained away against any measurable government policy or criteria. Those social impacts include the impacts to village amenity, the impacts to rural amenity, the impacts to activity centre function, the impacts to social cohesion, the impacts to sense of place and the impacts to wellbeing amongst others.

As outlined in Section 7.2 of the SIA, an important component of the SIA has been the integration of technical assessment outcomes with the risk ranking of a project factor or impact as identified by consulted stakeholders during engagement activities. To assess the overall social risk, the consequence has been cross-referenced with the likelihood to determine an overall risk assessment rating (i.e. low, moderate, high, or extreme). In the case of some impacts, this risk assessment has involved reference to the relevant technical reports of the ADA Report (e.g. traffic, noise, blasting, air quality, etc.) This is consistent with the approach of the 2017 NSW SIA Guideline. Refer to Figure 1 of the SIA Guideline (reproduced below) which presents the relationship between the social impact assessment and other specialist studies, and how these relate to the environmental impact statement.

Specifically, the 2017 Guideline notes at pg 8 that “while derived through discrete processes, the results of each study should combine to form a comprehensive, integrated and holistic EIS submitted as part of a development application.”

Figure 1: The relationship between the social impact assessment and other specialist studies, and how these relate to the environmental impact statement



It is important to note that the associated social impacts have been assessed through the social risk rating process. Importantly, the resulting social risk ratings represent the risk post implementation of mitigation measures, with mitigation measures also including relevant management based operational or technical approaches to each of the technical aspects that may reduce the likelihood of the social impact occurring.

MCQAG's submission notes that:

"there are far more impacts that can't be resolved, solved or explained away against any measurable government policy or criteria. Those social impacts include the impacts to village amenity, the impacts to rural amenity, the impacts to activity centre function, the impacts to social cohesion, the impacts to sense of place and the impacts to wellbeing amongst others."

As is evidenced in the mitigated social impact rankings provided within the risk assessment tables included throughout Section 7 and in summary form at Table 7.35 of the SIA, there are still a number of potential social impacts that have in fact not been resolved, solved or explained away and the SIA clearly notes these as still being of *high* significance for some stakeholders, depending on factors such as location and timing in the Revised Project. These social impacts are clearly considered in the ADA Report for the Revised Project.

Based on real, lived experiences (refer to Attachment 5 – Impacted Resident's Affidavit) during unlawful operations the impacts to these social aspects at the proposed 40 trucks per hour and 280 trucks per day are completely unacceptable to our membership and others in the community. We request the Minister to require the Proponent to revise down the proposed hourly and daily scale of operations to a level no greater than that authorized by the 1990 EIS and Dungog Shire Council's 1991 consent.

The proposed parameters of the Revised Project in relation to road transportation are outlined in **Section 1.1**, being:

- peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm

- no road haulage of quarry product on Saturday
- no road haulage between 24 December and 1 January, inclusive
- no trucks through Paterson village before 6.45 am
- increased quarry product transported by rail
- removal of Haul Route 2 as primary haul route (now proposed only to service local jobs as required).

The SIA provides an overall summary of the social impacts in relation to the Revised Project (refer to Appendix O of the ADA Report). The SIA has identified the most significant (high) social risks, based on the consideration of both stakeholder perceptions and mitigated technical risk analysis. One of the significant social risks is assessed to be impacts on social amenity associated with trucks and traffic movements due largely to the existing and future volumes of trucks and traffic movements and flow on effects such as increases in noise, changes to air quality, impacts on local road infrastructure and potential for interactions with the public.

Daracon have proposed mitigation and enhancement strategies to attempt to address significant potential social impacts, including:

- restriction of proposed maximum daily truck movements to only occur up to 50 days per year
- reduced truck movements between 3-6pm weekdays to avoid higher community traffic/school pick up times
- no road haulage of product on Saturdays (or weekend, public holidays or between 24 December and 1 January)
- planning quarry activities around extra traffic days/community events in Paterson Village/Tocal
- regular consultation with local bus companies
- school visit program to encourage road safety awareness
- reduced speed limits for quarry trucks travelling through Paterson village
- investigation of the use of radar variable message signs
- review and update of Driver Code of Conduct, including driver training relating to buses
- establishment of a Camera Monitoring Station at the King and Duke Street Intersection in Paterson Village to enable identification of relevant trucks associated with any complaints or enquiries
- implementation of a regular independent audit process to assess compliance with Driver Code of Conduct and other road haulage commitments
- environmental management plans such as noise, air quality, blasting, traffic and heritage
- preparation and implementation of a SIMP.

As outlined previously, the haul route utilises the existing road network which has historically been utilised for product transportation from the quarry. Further, the haul route primarily utilises the Regional Road (Main Road MR 101) that connects from East Maitland (at the New England Highway) via Bolwarra, Paterson, Wallarobba, Wirragulla, Dungog, Dingadee and Walshpool Bridge to The Bucketts Way. Regional Roads are intended to perform an intermediate function between the main arterial network of State Roads and Council controlled Local Roads.

The ADA and SIA have both failed to correctly assess the impacts of increasing annual truck movements from the Site from the current approved level of 4615 rail ballast loaded class 9 truckloads per year (see par 25 above for detail) to what would potentially be an annualized figure of some 15,384 loaded class 9 trucks carrying product other than railway ballast per year. We request the Minister to require the Proponent to update the ADA and SIA having regard for the adverse impacts arising from the proposed increase of truck movements from the Site.

As outlined above, there is currently no limit on the number of truck movements to and from the quarry, provided that not greatly more than 30% of material per annum is transported by truck. The increase in truck movements associated with the Revised Project has been assessed in the ADA Report and SIA.

As previously stated, the assumption of 4615 rail ballast trucks is erroneous.

Of grave concern to us is also the fact that the SIA author has throughout the document taken the approach to under-rate social risk scores. Contrary to Australian Standards for Risk Management practices the risk assessment process did not involve anyone from the impacted community and in spite of feedback during CAF forums from residents the SIA author has not acquiesced in the assertions made by residents that the scoring is in error. The SIA author has failed to divulge in the SIA scoring sheets what likelihood and magnitude category has been allocated for each risk table, without this it is not possible for the reader to understand what likelihood and magnitude scales have been predicted or assumed for the assessment. We request the Minister to require the Proponent to update the SIA to show the likelihood and magnitude categories of the risk assessments made.

Likelihood and magnitude categories have been provided in each risk rating throughout Section 7 of the SIA and again within the summary table included at Table 7.35. For example, impacts on the social amenity and surroundings of visitors/users/residents of Paterson village and Paterson businesses due to truck volumes and disruptions have been ranked as B3 which equates to a likelihood of likely and a consequence of moderate to show the application of the likelihood and magnitude scales.

It is also important to note that while tables of the risk assessment outcomes have been provided throughout Section 7 of the SIA and in combined summary format at Table 7.35, these should not be read in isolation. Further justification, logic, evidence and assumptions used to complete the evaluation for each individual social impact has also been provided throughout the discussions in Section 7 with reference to the discussion of perceived issues and impacts as presented at Section 6 as appropriate.

An important component of the SIA has been the integration of technical results with the risk ranking of a project factor or impact as identified by consulted stakeholders i.e. the sensitivity / susceptibility / vulnerability of people to adverse changes caused by the impact and/or the importance placed on the relevant social matter. Consequently, stakeholder ratings of risk were determined by assessing impacts identified through SIA consultation activities – the resulting ranking (i.e. low, moderate and high) have been determined by the frequency that an issue was raised by a particular stakeholder group in the engagement process. The justification for each stakeholder ranking is highlighted in the discussion within each

respective impact section with reference to the discussion of perceived issues and impacts as presented at Section 6 of the SIA as appropriate. It should be noted that stakeholder perception rankings as identified during consultation are not ‘residual risk’ rankings as they do not reflect all the management measures that are proposed. This is particularly important in the context of the Revised Project in which changes to the Original Project have been ongoing with responses to impacts iteratively identified by the Daracon and Umwelt project team (many of which have been informed by engagement activities) throughout the assessment process.

Stakeholder views and perceptions regarding the significance of risk/impact is considered an independent and no less valid component of risk. It is often the case that stakeholder perceptions of an impact may be quite different to an independent assessor’s perception and can be driven by a range of individual factors including fears, aspirations, lack of information and/or knowledge or awareness of particular impacts (Sandman, 1997). Stakeholder perceptions vary between individuals and groups, e.g. some social factors such as ‘amenity’ can be subjective in nature with individuals placing different values on potential impacts within these factors depending on their own personal circumstances with no single perception more important than another.

Stakeholder input/impacted community into the risk assessment process is reflected in the columns entitled: Perceived Social Impact/ Sensitivity of the risk matrix tables.

The SIA refers to the “proposed ADA parameters” when compared to the 2016 EiS and past unlawful operations, as purported mitigations. In regard to amenity impact, the SIA refers to administrative controls such as the Driver Code of Conduct, voluntary speed reductions, new quarry access road, provision of a camera monitoring station and a raft of uncommitted suggestions that involve “exploring” “management plans” and “consultation”- all proposed as mitigations for very high and extreme ranked social risk scores. Once again, we rhetorically ask:

- **How does a Driver Code of Conduct ameliorate the physical impacts (being the physical presence) of hundreds upon hundreds of trucks through the villages of Martins Creek, Paterson, Bolwarra and Maitland? The obvious answer is: it does not.**
- **How does a new access road in year four of the development ameliorate the impacts of 31,000 truck movements per year down Grace Avenue and Station St Martins Creek? The answer: it does not.**
- **How does a new access road in year four through to year 25 of the development ameliorate the impacts of 31,000 truck movements per year through Paterson, Tocal, Bolwarra Heights, Bolwarra and East Maitland. The answer: it does not.**
- **How does a camera at King Street and Duke Street ameliorate the impacts on the activity centre of Paterson? The answer is: it does not. Furthermore, who will monitor this camera and for what and whose purpose does it serve?**

We request the Minister to require the Proponent to provide more meaningful, certain and effective mitigations regarding amenity impacts.

The 2017 SIA Guideline states that applicants should make clear how negative social impacts will be managed, with a particular focus on those that are evaluated as significant. In the first instance, applicants should consider measures to avoid the impact by amending the project design. If avoidance is not possible, measures to reduce the impact (for example, change how the project is designed, constructed, operated or decommissioned) or to limit its influence. The resulting mitigation measures can be:

- performance based
- prescriptive
- management based.

The SIA Guideline suggests a range of factors that should be considered when developing mitigation measures, including the extent to which the mitigation measure is acceptable to those who are expected to be affected by the potential negative social impact.

As noted in the SIA Guideline (DPE, 2017), some impact strategies may differ in their effectiveness and/or ability to alleviate impacts, with some residual social impacts remaining. Furthermore, certain measures may collectively address a number of different negative social impacts and potentially enhance a number of positive impacts.

As identified at Section 3.5.1 of the SIA, Daracon have continued to complete further project feasibility investigations, detailed quarry design refinements and explored potential additional mitigation measures, taking into consideration the outcomes of engagement activities as they have been available. Refinements and mitigation measures have also been identified via a review of similar projects as outlined in Section 5.5.1 of the SIA.

As identified throughout Section 7 of the SIA, a number of mitigation and enhancement measures were proposed by the community during the engagement activities and were subsequently explored by the project team to address project impacts. Consequently, a number of further iterative refinements have been made to the project based on community feedback. Where community identified mechanisms have not been adopted, the reasons why this has not been possible has also been outlined as relevant in Section 7 of the SIA, with this elaboration on explanations already provided during various engagement activities, most notably the topic specific CAFs.

As discussed at Section 7.3.1.3 of the SIA, key community identified mitigation measures that had been identified during the review of submissions, historical engagement and engagement specific to this SIA included:

- an increase in the utilisation of rail as a means of transporting product, and / or
- for a bypass road to be constructed to remove the need for trucks to travel through Paterson.

With respect to rail, as discussed in the SIA and the ADA Report, while Daracon has committed to increasing the amount of quarry product transported by rail, there are a number of factors that influence the ability to increase rail transport including the:

- availability of train paths during daylight hours
- amenity impacts on surrounding residents associated with loading and dispatching trains during the evening and night period

- lack of suitable rail unloading sites, with a potential site identified by Daracon for the Sydney Metropolitan site, but not for the Hunter Region market.

With regard to the community identified mitigation of a bypass road for Paterson, again as noted within the SIA, discussions with relevant government agencies have indicated that a bypass of Paterson had previously been proposed but was removed from DSC's planning documents in 2002 and is no longer supported. The former proposed route is now subject to other land uses and no longer available as a viable option and there is no other viable route for traffic associated with the quarry to bypass the village of Paterson.

Given that the majority of the identified potential impacts on the community are intrinsically linked to the proposed movements of trucks, a key component of the approach to the minimisation of impacts has been the ongoing refinements of the project design and its associated truck movements. As such, in order to reduce the extent to how the community impacts associated with the Revised Project will be felt by the community, peak truck movements have been restricted to 140 laden trucks per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements) with the hourly peak consisting of:

- 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
- 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm.

The SIA acknowledges that there is still a residual potential impact remaining post the implementation of identified mitigation measures with the mitigated social risk in relation to a number of identified impacts still high – for example - those associated with changes to existing amenity for quarry near neighbours and residents of, and visitors to, Paterson.

The SIA has intentionally not stated a threshold for risk tolerance as risk tolerance depends on subjective and personal judgments with the perception of what is acceptable vs unacceptable risk varying significantly from individual to individual, community to community. However, as required within the SIA Guideline, the SIA has also included lengthy discussion as to the extent to which identified mitigation measures in the form of identified project refinements are acceptable to those who are expected to be affected (refer to Appendix 7 of the SIA).

To continually allow for the monitoring and adaptive management of negative social impacts, and for enhancing positive impacts, the SIA has specifically included provision for a SIMP to continuously evaluate whether:

- Social impacts and opportunities identified within the SIA have occurred, i.e. are the impacts occurring in the way that was initially predicted? Has the project created any negative or positive impacts that were unanticipated during the assessment process?
- The proposed management/enhancement measures addressed social impacts in the way that was intended. Are they sufficient? Are further management measures required?

A key component of the SIMP will be the identification of appropriate monitoring, reporting and review mechanisms, including the purpose of monitoring and the parameters that will be monitored and how and when monitoring data will be collected.

While a high-level overview of a monitoring framework is provided within the SIA, it is intended that the proposed framework and associated indicators to allow for the measurement of its success would be further developed in consultation with Daracon, the DPIE, the CCC and other and key stakeholders.

As stated in the SIA Guideline, the SIA informs the decision-making process. The consent authority will consider the relative significance of the potential negative social impacts having regard to the proposed mitigation, suitability of the proposed mitigation measures and monitoring and management framework. In making a decision on the whether the Revised Project is approved, and if so, the relevant consent conditions, the consent authority will consider the balance of residual negative social impacts when considered with positive social impacts along with all other environmental and economic considerations.

Relevantly an example of an incorrectly scored residual social risks is detailed below:

- **Due to the proposed 31,000 truck movement per year of construction material product to/from the Site it is 'almost certain' that there will be a substantial deterioration to the sense of community, rural character, occurring (as reported lived experiences state) across a widespread area from Martins Creek through to East Maitland affecting many people for 25 years resulting in a 'major' magnitude impact and a 'very high or extreme' social risk ranking.**

We request the Minister to require the Proponent to update the risk assessment scoring and to involve impacted residents to show the likelihood and magnitude categories of the risk assessments made.

Likelihood and magnitude categories have been provided in each risk rating provided throughout Section 7 of the SIA and again within the summary table included at Table 7.35. For example, impacts on the social amenity and surroundings of visitors / users/ residents of Paterson village and Paterson businesses due to truck volumes and disruptions have been ranked as B3 which equates to a likelihood of likely and a consequence of moderate to show the application of the likelihood and magnitude scales.

It is also important to note that while tables of the risk assessment outcomes have been provided throughout Section 7 of the SIA and in combined summary format at Table 7.35, these should not be read in isolation as further justification, logic, evidence and assumptions used to complete the evaluation for each individual social impact has also been provided throughout the discussions under each identified impact in Section 7 of the SIA with reference back to the discussion of perceived issues and impacts as presented at Section 6 as appropriate.

We have commissioned expert peer review of the SIA. The review has concluded that there are significant flaws, errors and omissions in the ADA SIA as exhibited. The experts further concluded that a number of residual social risks should be more correctly rated as "Almost Certain" to occur, having a "Major" social impact that will result in an "Extreme or Very High risk rating" and the mitigations exhibited are inadequate and the residual negative social impacts, based on lived experiences, will be unacceptable to a significant cohort of the impacted population.

We request that the Minister include the attached peer review in the DPIE's assessment of the ADA. We also respectfully request that based on the issues raised in this submission the Proponent is to address and resolve these issues. If the Proponent is unable to resolve and mitigate further the documented unacceptable social impacts using other documented reasonable and feasible mitigations discussed within this document then we respectfully submit that the Minister should refuse consent to the ADA.

Responses to the MCQAG SIA peer review is provided in **Appendix 4**.

The SIA has been prepared in accordance with the requirements of DPE's *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (DPE, 2017) (the SIA Guideline), in accordance with the SEARs (dated 4 August 2016) and in response to government agency and community submissions during the exhibition of the EIS (refer to Sections 12.0 to 14.0 of the ADA Report). The SIA is also consistent with the *Social Impact Assessment: Guidance for assessing and managing the Social Impacts of projects International Association for Impact Assessment* (International Association for Impact Assessment, 2015).

Despite several years of MCQAG and residents within the impacted area requesting Daracon and Umwelt to lessen the scale of proposed operations and/or find alternate controls involving elimination, engineering or substitution mitigations, the Proponent has point blankly refused, claiming it is not commercial. The issues we particularly have, is that in 2015/2016 the Proponent said at 1.5Mt extraction per annum and 100% removal by road, it was not commercial to make any concessions to the community concerns, a purely subjective opinion from the operator. But how does one objectively determine whether what is proposed is really commercial or not and whether the Proponent really has any further head room to accommodate lessening impacts on the community?

Daracon has made substantial effort throughout the ADA process to engage with the community and regulatory authorities in relation to the impacts associated with the proposed expansion of the quarry. The Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Revised Project.

Despite commentary to the contrary, Daracon have reduced the scale of operations compared to the Original Project. Following detailed analysis of Agency and community feedback on the EIS and subsequent stakeholder engagement, Daracon committed to a number of key project design changes and additional mitigation and management measures to minimise the project's environmental and social amenity impacts. This included:

- reductions in proposed extraction limits from 1.5 Mtpa to 1.1 Mtpa
- revised product transport arrangements, including:
 - reduced peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm
 - no road haulage of quarry product on Saturday
 - no road haulage between 24 December and 1 January, inclusive
 - no trucks through Paterson Village before 6.45 am
 - increased quarry product transported by rail
 - removal of Haul Route 2 as primary haul route (now proposed only to service local jobs as required)
 - a further reduction in speed limits to 20 to 25km/hr around the King and Duke Street intersection in addition to the already reduced speed limits for quarry trucks travelling through Paterson Village of 40km/hr rather than 50 km/h

- revised operating hours of 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday, and no evening or night operation, apart from rail loading and transportation and necessary maintenance activities.
- 16.8 ha reduction in the proposed disturbance footprint, including avoiding approximately 15.3 ha of native vegetation in the former East Pit (Lot 21 DP 773220)
- construction and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access
- improvements at the Dungog Road and Gresford Road intersection and the King and Duke Street intersection (within the village of Paterson)
- upgrades to the approach to Gostwyck Bridge
- planning quarry activities around extra traffic days/community events in Paterson Village/Tocal.

MCQAG have made requests in relation to a bypass and transporting all product by rail. Daracon has not 'point blankly refused' these options. Daracon has reviewed these options and maintain their position that these options are not currently viable (refer to Section 2.12 of the ADA Report). Daracon has however committed to continuing to explore opportunities to increase rail transportation from the quarry, subject to market availability and demand.

When one reviews other NSW quarry projects, one asks the question for the proposal here: why was it commercial for the operators of those quarries to put in place mitigations that ameliorated the impacts on affected residents but not us? Why was it commercial for Multiquip's Ardmore Park Quarry (which has approval for 400,000tpa and 88 total truck movements per day) to construct a 6km bypass road around Bungonia Village and be precluded from running any trucks from the quarry during school drop off / pick up times? Why was it commercial for Brandy Hill Quarry in 1983 (which had approval for 700,000tpa) to construct a bypass road (Brandy Hill Drive) around the village of Seaham? And why was it commercial for the other 15 quarries in this state with a scale-based limit of between 500,000 and 2,000,000 tpa to not have to have a haul route traverse through a rural village activity centre? If it is good enough for them we rhetorically ask, why is it not good enough for Paterson, Martins Creek, Bolwarra, Tocal and Bolwarra Heights.

On the basis that the Proponent is unwilling or unable to develop further mitigations to reduce the social impacts on impacted residents then we respectfully submit that the Minister must refused consent to the application.

As outlined in **Section 1.1**, the quarry has been in operations since 1914. This Revised Project does not represent a new project, rather it aims to maximise the use of an existing quarry to meet a significant demand in the local and regional market. The quarry poses unique challenges in its location and the development that has occurred in the vicinity of the past few decades. The circumstances concerning other quarries are not similar to the Revised Project and are not relevant to consideration of the ADA.

As outlined above, the Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Project.

The potential to bypass Paterson has been raised during stakeholder engagement and was investigated in the ADA process, as outlined in Section 2.12 of the ADA Report. Whilst there was previously a road corridor for a bypass allocated in DSC's local planning provisions, Daracon was advised in 2014 that DSC no longer supported that proposal. The land previously allocated as a bypass through the outskirts of Paterson have been developed for other purposes.

There is no economically viable or feasible route for traffic associated with the quarry to bypass the village of Paterson. The proposed new access road provides a bypass for the village of Martins Creek, at a cost of approximately \$3-4 million to Daracon. Consideration has been given to mitigation measures that could be implemented within the constraints of which the quarry operations to improve social amenity and safety for local communities (refer to **Appendix 2**).

The ADA Traffic Impact Assessment (TIA) concludes that traffic associated with the Revised Project would have an acceptable impact upon the operation of the key intersections along the primary haul route and is not expected to have any adverse impacts on the safety of the road network. MCQAG raises strong objection to that assertion. The proposed hourly and daily scale of trucking from the Site will have completely unacceptable road safety outcomes and impacts along the proposed haulage route as detailed in this submission. The lived experiences confirm this with reports that include

- **Side-swiped parked cars in Paterson (numerous events)**
- **Cracked windshields on parked and moving vehicles from class 9 quarry traffic (numerous events)**
- **Lost loads when class 9 quarry truck tail gates have failed (on Gresford Road and within Paterson village)**
- **Convoying of trucks (numerous events)**
- **Illegal double parking on carriageways, in turning bays, on road shoulders, on private properties, across bus zones and private driveways**
- **Traversing of class 9 quarry trucks over double white lines through the activity centre of Paterson to provide clearance to pedestrians and open car doors**

MCQAG committee will be happy to provide sworn statements and photographic evidence of the above incidents if it would assist the DPIE. Furthermore the historical impacts of unlawful trucking are recorded in Attachment 3 – Complaint Records.

The TIA for the Revised Project has been undertaken in accordance with the SEARs for the Original Project (dated 4 August 2016), the Austroads Guide to Traffic Management, the Road Design Guide and Guide to Traffic Generating Developments published by the RMS/TfNSW. The assessment of key intersections along the primary haul route and safety of the road network is not a subjective assessment.

TfNSW have not identified any significant concerns with the TIA, including intersection or road network safety issues (refer to **Section 4.4**).

All incidents reported to Daracon are investigated, recorded and reported to the CCC, in accordance with the complaints management process previously outlined. Daracon will continue to investigate any traffic relates incidents reported as part of ongoing operations.

The ADA states that the proposed road haulage is not inconsistent with road haulage volumes from the Site for the past 8 years. MCQAG strongly objects to the validity of that assertion. With reference to Attachment 1 – Graph Overlay – Lawful and unlawful Operations, what the ADA and TIA fails to disclose in the report is that for the past 8 years and many years before that, the magnitude of road haulage from the Site (being product other than railway ballast extracted from unapproved areas) had been occurring unlawfully with significant unmitigated impacts to road safety and to road infrastructure.

We request the Minister require the Proponent to amend the ADA and TIA and explain the relevance of the justification of impacts and suitability of road carriageway noncompliance with Ausroad standards based on past unlawful operations.

The ADA Report indicates that with regards to historical rates of product extraction and tonnages transported from the quarry, the proposed road transportation limit of 500,000 tpa returns road haulage volumes to a level that is not inconsistent with road haulage volumes occurring prior to Daracon securing its licence in 2012. The ADA Report doesn't indicate that the production at that time was lawful. The ADA Report clearly provides the approved parameters which are reiterated in **Section 1.2.1** of this report. As outlined above, there is no limit on the number of trucks, provided that not greatly more than 30% of material per annum is transported by truck.

The ADA Report and TIA are required to assess the Revised Project based on current standards and conditions. The ADA Report is not intended to retrospectively assess impacts that are not subject of the development application.

The ADA and TIA focus on a Drivers Code of Conduct (DCC) to manage and mitigate impacts associated with 40 trucks per hour and 280 trucks per day of movements. From the ADA, TIA and SIA it is apparent the DCC is requiring a number of voluntary requirements for drivers to follow, the DCC is calling for drivers to drive below the stated speed limits. We note that NSW Road Rule 125 states that a driver must not drive abnormally slow on a carriage way. This correlates with past CCC meeting records which confirmed Daracon drivers have encountered "road rage and abuse and erratic overtaking and driving by passing vehicles" whilst driving through Bolwarra Heights and Paterson at the proposed "voluntarily reduced speed limit". We are of the understanding that compliance with the DCC would be a term of any new approval. We rhetorically ask: how can it be possible that in order to comply with the DCC and consent conditions a quarry truck driver must potentially break the law (Road Rule 125) and drive 20 to 30km/hr below the sign posted speed limit. It is not possible or appropriate for DPIE nor the Proponent as an extension of an approval condition to require an individual to break the law in order to comply with a DCC.

We request the Minister to require the Proponent to find alternate means to mitigate the impacts of trucking on the historic village of Paterson and Bolwarra Heights using other means beyond the DCC and voluntary speed limit reductions.

Whilst a number of the traffic controls are focused on the Drivers Code of Conduct to manage and mitigate impacts associated with the truck movements generated by the Revised Project, this is in addition to key changes including:

- peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:

- 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
- 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm
- no road haulage of quarry product on Saturday
- no road haulage between 24 December and 1 January, inclusive
- no trucks through Paterson village before 6.45 am
- increased quarry product transported by rail.

The commitment for all trucks entering and leaving the quarry to observe a reduced speed limit of 40 km/hour through the town of Paterson, with further reduction to 20 to 25 km/hr around the King and Duke Street intersection is not considered to be breaking the law. Road rule 125 states:

- (1) A driver must not unreasonably obstruct the path of another driver or a pedestrian.*
- (2) For this rule, a driver does not unreasonably obstruct the path of another driver or a pedestrian only because—*
 - (a) the driver is stopped in traffic, or*
 - (b) the driver is driving more slowly than other vehicles (unless the driver is driving abnormally slowly in the circumstances).*

The example provided for driving abnormally slowly is:

A driver driving at a speed of 20 kilometres per hour on a length of road to which a speed limit of 80 kilometres per hour applies when there is no reason for the driver to drive at that speed on the length of road.

The proposed reduction in speed is not considered to be abnormally slowly and is based on current data for Daracon trucks in Paterson village.

Daracon has also committed to a range of additional traffic management and mitigation measures. Specifically:

- Daracon will undertake regular audits of transport subcontractors to ensure compliance with the HVNL and CoR.
- Daracon will conduct regular monitoring, spot checks and observation of driver behaviour.
- Daracon will investigate all complaints and potential breaches of Daracon's Traffic and Transport policies and procedure to the fullest extent possible and initiate disciplinary action as required.
- Daracon will install a Camera Monitoring Station at the King and Duke Street Intersection to enable identification of trucks through Patterson to quickly resolve complaints associated with trucks.
- Daracon will continue planning to expand rail markets and gain access to rail unloading capacity, in order to enable greater transportation of product by rail.
- Explore additional opportunities to further monitor driver conduct and truck conveying, as suggested by the community, including fleet management technologies as they become available and GPS monitoring for non-Daracon vehicles.
- Daracon commit to plan quarry activities, and revise haulage as required, around days when there is extra traffic in Paterson due to a funeral.

MCQAG committee's position is that having regard to the hierarchy of controls, relying on a document (the DCC) to manage High and Very High risks as detailed in the ADA SIA and our own SIA Peer Review, is a highly abnormal practice, Australian Standards Risk Management Guidelines sets out that:

You must always aim to eliminate the risk, which is the most effective control. If this is not reasonably practicable, you must minimise the risk by working through the other alternatives (substitution, engineering, admin Etc). Administrative controls are the least effective at minimising risk because they do not control the hazard at the source and rely on human behaviour and supervision. These control measures should only be used:

- to supplement higher level control measures (as a back-up)
- as a short-term interim measure until a more effective way of controlling the risk can be used, or
- when there are no other practical control measures available (as a last resort). in the hierarchy.

MCQAG strongly objects to the proposed mitigation of trucking impacts (amenity, road safety, pedestrian safety, Paterson Activity centre function and safety, noise, vibration, heritage) relying solely on the doubtful administrative control of the DCC. We ask who will regulate compliance with this document, how often will compliance be conducted and how effective are the prescribed measures in even mitigating the risks posed? We refer to Attachment 4 – Statutory Declaration which details a sworn statement confirming that the founding director, controlling shareholder and former Managing Director of the Proponent advised residents that Daracon could not control 3rd party quarry trucks on the road network that access the Site. MCQAG submits that reliance on the DCC control measure alone to manage, monitor and control trucking impacts along the haulage route is completely unacceptable. Furthermore, we note that Daracon's founding director has confirmed to residents they have no way of controlling (and therefore enforcing the DCC) on third party trucks accessing the Site.

We request the Minister to require reassessment of mitigations and impacts related to traffic focusing on elimination, substitution and engineering controls over a single administrative control.

As noted above, Daracon has committed to a range of traffic management and control measures including reduced operational parameters for the Revised Project in terms of truck movements and hours of transportation to further reduce the traffic related impacts of the Revised Project. The Drivers Code of Conduct is just one of the management measures proposed.

Taking into account feedback received during the 2014 – 2106 CCC meetings, Daracon developed a Code of Conduct that has been successfully implemented since that time. This was evident during the period in which the IEMP applied from October 2018 to September 2019 in accordance with Court orders. In the 2019 proceedings seeking a continuance of the stay of the Court orders, the Land and Environment Court accepted that "the use pursuant to the IEMP 2019 can be managed with independently mandated limits with respect to traffic generation; truck noise; air quality and blasting".

Daracon have received complaints regarding truck driver behaviour allegedly contradicting the Code of Conduct. All complaints were investigated with a number of these resulting in preclusion of a truck driver /haulage company from site for breaching the Code of Conduct. Other investigations demonstrated compliance with the Code of Conduct.

We note that in the year 2000 a cyclist was killed on Tocal Rd near Tocal College after being hit by what we understand to be the dog- trailer of an early morning class 9 truck and dog. The fact that that has occurred, tragically, is a proven and specific example that increases in class 9 truck movements proposed by the ADA will most definitely increase the risk for such an occurrence to re- occur into the future.

The incident noted is beyond the review that was undertaken for the TIA given it was approximately 20 years ago.

As outlined in the ADA Report, accident data provided by the RMS (now TfNSW) (refer to Appendix C of the ADA Report) showed that the overall number of accidents are low with no reportable accidents identified to be associated with the operations of the quarry. In addition, Daracon have confirmed that since operating the quarry there have been no record of any reportable or significant accidents associated with the truck movements in and out of the quarry site along the haul route.

Overall, the current road network is assessed to be generally satisfactory for road safety issues. The TIA (refer to Appendix C of the ADA Report) does identify key road network issues, being:

- lack of space between the intersection of Station Street and the railway crossing and road alignment across railway crossing
- one-way bridge operation at Gostwyck Bridge on Dungog Road
- lack of sheltered right turn lane on Gresford Road for drivers turning right into Dungog Road
- tight road alignment on 90° bend at Gresford Road/Duke Street in Paterson
- lack of pavement width on Tocal Road at Bolwarra Heights, which was subsequently upgraded by MCC.

As outlined in the ADA Report, road improvement works or contributions towards road works are proposed as part of the Revised Project to ameliorate existing road safety concerns and improve traffic flow. These will be designed in consultation with the relevant road authorities and generally in accordance with Austroads Guidelines. The proposed road works (detailed in Section 2.8.2 of the ADA Report) will provide the following benefits to be experienced with the Revised Project:

- New main site access – a new access to the quarry on Dungog Road will remove all quarry related trucks from Station Street and Grace Street and the existing access will only be used by light vehicles in an emergency event. The new site access effectively bypasses Martins Creek village and removes trucks from a local road to a regional road.
- Gresford/Dungog Road intersection – will provide a sheltered right turn lane on Gresford Road to improve road safety, by reducing or eliminating the potential for rear end type accidents. The upgrade will direct all through traffic to steer to the left of any vehicle waiting to turn right at this location. This upgrade is in line with RMS/TfNSW policy (RMS Publication 17.336 version 2.0 dated 31/8/2017) which no longer permits Rural Type AUR intersection controls and requires a Rural CHR type intersection. The upgrade will further extend the acceleration lane improving road safety.
- King and Duke Street intersection - upgrade the 90-degree bend in Paterson with a refresh of the dividing line marking through the intersection to delineate and separate opposing traffic. The upgrade will allow for the relocation of the driveway on the north side of the intersection to improve space allocation for on street parking.

- Gostwyck Bridge approach u–grade - the upgrade will allow for the realignment of Dungog Road by incorporating a series of curves to raise driver awareness and associated new line marking, as well as Vehicle Activated Signage (VAS) alerting drivers approaching the bridge to reduce speed.

In addition to the physical works, Daracon have committed to reducing truck speed limits, including:

- 40 km/hr through Paterson, Bolwarra and Vacy (noting Vacy would only apply to local deliveries).
- 20-25 km/hr at the intersection of King and Duke Street Paterson
- 20 km/hr on Station St Martins Creek.

The ADA & RTS have previously dismissed MCQAG’s road safety issues raised in our 2016 submission. The RTS stated that they have only responded and focused on the safety concerns raised by the RMS as the road authority. MCQAG notes that the Proponent is required to respond and address all impacts and issues raised. It appears that the Proponent is choosing to “align” and make proposed changes to the road traffic network as it suites them.

Section 13.1 of the ADA Report addresses the earlier submission from MCQAG.

The ADA Report is not limited to addressing the safety concerns raised by TfNSW. As a key authority for road issues, consultation was undertaken with TfNSW in relation to traffic impacts associated with the Revised Project. Consultation has also been undertaken with DSC where they are the relevant road authority.

The TIA completed for the Revised Project has been undertaken in accordance with the relevant guidelines (refer to Appendix C of the ADA Report).

The Proponent has proposed to remove the car parking space from in front of the Post Office (at great disservice to the residents) because it is non-compliant with Ausroad standards; however numerous other non-compliances with Ausroad standards are being ignored by the Proponent as detailed below.

It is not possible to address all non-compliances with Austroads standards along the haul route. Attempts have been made to address potential issues where possible in consultation with TfNSW and DSC.

The removal of the car parking space in front of the Post Office, at the King Street and Duke Street, was subject to an extensive consultation process with DSC and the local community of Paterson and the surrounding area. The current design allows for the relocation of the existing driveway on the north side of the intersection slightly west, to improve the space allocation for parking on either side of the intersection and improve carparking capacity along the northern kerb line. While the carpark space will be relocated, there is no loss of on-street parking at this intersection.

We have grave concerns for the road safety outcomes (based on lived experiences) if the proposed parameters in the ADA are granted an approval. We now set out key issues and concerns below.

Attachment 11 – Traffic and Road Safety Impacts - Station Street. As can be seen in the photos and as would have been observed by DPIE staff on their attendance to the Site, Station Street is a cul-de-sac residential street. No assessment has been made to the structural adequacy of the pavement for the proposed 31,000 truck movements per year, and limited assessment has been made to the Social Impacts and Noise impacts due to transport that would occur on this road and to residents. Given this street is a residential street, one upon which children play and residents walk, it is completely unacceptable between year one and year four that the proposed scale of operations and proposed change of use (from rail ballast to other products) suggested in the ADA could transit this route. The interaction of 31,000 truck movements per year across the main Northern line at the Station St and Grace Ave intersection is also completely unacceptable, we note there are 10 local commuter train movements, 6 interstate XPT movements and numerous coal and freight train movements per day on the line.

Whilst the current layout of the Station Street/Grace Avenue intersection does not comply with current Austroads Guidelines, it has operated as a single vehicle access to the quarry for the majority of the life of the quarry and has allowed for safe and appropriate two-way traffic movements (with no recorded accidents at this location). Existing controls for the level crossing will continue to advise vehicle drivers of approaching trains which improves road safety.

Delays and queues associated with the level crossing at this location will create delays for the trucks associated with the quarry. These delays vary by the length and speed of the trains using this crossing.

In addition, Daracon has committed to implement a range of driver conduct and other traffic controls (as outlined in Section 6.3.5 of the ADA Report) to further mitigate any potential road safety impact to be associated with trucks from the Revised Project. Specific to Station Street, this has included a commitment to reducing truck speed limits on Station Street to 20 km/h.

While negotiations have not yet been completed, Daracon has offered to contribute to road maintenance of Station Street under the proposed VPA with DSC, including carrying out overlay works at the commencement of operations and ongoing maintenance of the road.

Attachment 11 – Traffic and Road Safety Impacts – Gostwyck Bridge. As can be seen in the photos and as would have been observed by DPIE staff on their attendance along the route, this timber bridge is single lane. This section of carriage way must be brought up to Ausroad standards. Gostwyck Bridge must be duplicated to avoid unacceptable road safety outcomes that would result (and have resulted in past unlawful operations) of multiple hundreds of by directional movements over the bridge structure. If it is reasonably acceptable for Ardmore Park Quarry to be required to upgrade 23km of Jerrara Roadway to bring it into line with Ausroad Standards, it must be reasonably acceptable that as a new development proposal the Proponent must be expected to bring this small section of carriage way up to Ausroad standards (in terms of lane widths and by directional traffic flow capability).

Daracon have consulted extensively with TfNSW and DSC on the options for upgrade works to Gostwyck Bridge (as outlined in Section 5.0 of the ADA Report).

The design of the bridge and width of the roadway has been discussed with TfNSW and it has been agreed that the bridge can continue to operate in a one-way manner. The width available is acceptable for one-way traffic movements. Traffic modelling has been completed to determine the delays and queues at this bridge associated with one-way movements to the satisfaction of TfNSW.

It is proposed that the Gostwyck bridge approach be upgraded as part of the Revised Project through the realignment of Dungog Road by implementing a series of curves, including new line marking and Vehicle Activated Signage alerting drivers approaching the bridge to reduce speed. These works are targeted to raise driver awareness and improve road safety along this section of the primary haul route.

In addition, as detailed in **Section 4.4.1**, TfNSW advised that the existing barriers are timber railings that are typical of heritage timber bridges and that upgrade of the barriers to meet current standards is not feasible with the existing deck configuration. To ensure safety of the bridge and road users, it will be necessary to keep traffic on the centre of the bridge by installing kerbs that maintain a 3.5m travel lane. The kerbs must be compatible with timber bridge heritage requirements. Daracon agree to fund the design and installation of a 200mm x 200mm timber kerb on Gostwyck Bridge maintaining a 3.5 m travel lane. The final design of the kerb will be subject to TfNSW approval.

Attachment 11 – Traffic and Road Safety Impacts – Gresford Road. As can be seen in the photos, the condition of Gresford Road is in a state of failure. The carriageway width does not meet Ausroad Standards. No assessment has been made on the structural adequacy of the roadway to carry the proposed magnitude of truck movements. Again, if it was reasonable and feasible for Multiquip Ardmore Quarry to upgrade 23km of Jerrara Road before their approval could be taken up, then it is reasonable to expect and request that the Proponent be required to remedy and upgrade this section of roadway.

As previously outlined, a pavement assessment was undertaken to assess the current condition of the haul route. As a result of the modelling, it was predicted that the addition of the extra truck traffic would result in additional road maintenance requirements for the haul routes over the next 25 years (SMEC 2021).

Daracon has committed to upgrade the Gresford/Dungog Road intersection as part of the Revised Project. These works would provide a sheltered right turn lane on Gresford Road to improve road safety, by reducing or eliminating the potential for rear end type accidents. The upgrade will direct all through traffic to steer to the left of any vehicle waiting to turn right at this location. This upgrade is in line with RMS policy (RMS 2017) which no longer permits Rural Type AUR intersection controls and requires a Rural CHR type intersection. The upgrade will further extend the acceleration lane improving road safety.

Should the Revised Project be approved, it is expected that Daracon will be required to make annual financial contributions to DSC and MCC in the form of a VPA. On the basis that Daracon will contribute towards road maintenance and pavement upgrades, any impacts on the road pavement resulting from the transport of product from the Revised Project would be mitigated, should the Revised Project be approved.

A draft VPA has been provided to DSC and at the time of preparation of this report is subject of ongoing negotiation with DSC and MCC.

Attachment 11 – Traffic and Road Safety Impacts – Church/King Street Intersection. This intersection requires a sheltered turning bay. This intersection has multiple hundreds of vehicles turns daily for parents accessing Paterson Primary School and Pre School. There are insufficient sight lines at this intersection. The Proponent has not adequately resolved this safety issue.

SECA has advised that the sight lines have been assessed at this location and are considered appropriate for the posted speed limit of 60 km/h. The speed limit at this location, when parents would be accessing the school is 40 km/h and at this speed the sight lines available allow a driver to modify their vehicle speed or stop if required if a vehicle is propped waiting to turn right here.

Whilst parents accessing the school will turn right here, this is only for the parents living to the north of this location. The balance of other trips would not need to turn right at this location. It is considered that the right turn demand at this location does not warrant the provision of a sheltered right turn lane.

The road corridor in this location does not allow for any widening to allow for a sheltered right turn lane on King Street.

Attachment 10 – Activity Centre Impacts – Paterson Activity Centre Impacts. These photos show (as was pointed out to Mr Sprott and Mr McDonough on 22 June 2021) unacceptable interactions between pedestrians and other road users within the activity centre of Paterson. Class 9 vehicles are required to traverse double white lines to avoid parked cars, opening car doors and pedestrians entering and exiting their vehicles. The proposed removal of the parking space in front of the post office completely unacceptable because it serves as a key parking spot to enable elderly and less mobile residents to carry packages in and out of the Post Office.

The proposed upgrade at the King Street and Duke Street intersection in Paterson takes account of relevant Austroad Guidelines. The upgrade allows for a refresh of the dividing line marking through the intersection to delineate and separate opposing traffic movements with no loss to any car parking spaces.

As illustrated on Figure 2.16 of the ADA Report, the updated design allows for the relocation of the existing driveway on the north side of the intersection slightly west, to improve the space allocation for parking on either side of the intersection and improve carparking capacity along the northern kerb line. Therefore, there is no longer any loss of on-street parking.

In addition, Daracon have also committed to speed limit of 20 to 25km/hr around the King and Duke Street intersection in Paterson to further improve safety and intersection performance without the need for additional intersection upgrade.

Previous consultation with TfNSW indicates that Paterson does not meet the criteria for a pedestrian crossing and no particular option (i.e. crosswalk vs no crosswalk) has been supported during consultation activities to date. Nevertheless, Daracon have proposed this as an option and would be supportive of contributing to the establishment of a pedestrian crossing in Paterson, or other works to upgrade pedestrian amenity, should DSC approve it as a part of the VPA considerations, and TfNSW approve these measures, as relevant. Further, Daracon have offered to contribute to upgrade of the footpaths in King and Duke Streets, Paterson, as part of VPA considerations.

Attachment 11 – Traffic and Road Safety Impacts– Duke/Prince Street Intersection - This intersection has safety issues, there are insufficient sight lines at this intersection. There is no sheltered turning bay, with multiple hundreds of turns of vehicles at this intersection by residents and patrons to the Paterson tavern. The Proponent has not adequately resolved this safety issue.

As outlined in **Section 4.12.2**, the sight distance issues at Prince Street and Duke Street are created by the wall constructed to the property boundary and vegetation fronting Duke Street and is the responsibility of the road authority. The wall on the property restricts the sight line for a driver looking right when exiting the side road. Whilst normal design practice requires a property boundary to be set back from the edge of the road the historic design here has the wall located close to the edge of the road carriageway.

The Code of Conduct will require trucks to travel at a 40kmh speed limit as part of the Code of Conduct for trucks travelling through the section of Duke Street at the Prince Street and Duke Street intersection. The review of TfNSW accident data has not highlighted any recorded accidents at this location in the past 5 years.

Attachment 11 – Traffic and Road Safety Impacts – Tocal Road Safety impacts – As can be seen in the photos the pavement surface is in a state of failure. No consideration has been given to pedestrian safety of vehicle access/egress into Tocal College.

SECA have confirmed that sight distances available for drivers entering and exiting Tocal College meet the requirements for the posted speed limit.

Traffic data along the primary haul route associated with the haulage of material has been collected at mid-block locations as well as at the key intersections impacted upon by the quarry. The data showed that the section of the haul route along Tocal Road, to be impacted upon by the Revised Project, would continue to carry traffic flows well within its capacity.

As previously identified the Revised Project proposes a reduction in peak trucks per hour to:

- 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
- 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm.

The road authority has not raised any concerns over the access point into Tocal College.

Attachment 11 – Traffic and Road Safety Impacts – Paterson Road Cumulative Impacts. The photo shows the urban issues with Paterson Road and the cumulative impacts that will result when Brandy Hill Quarry takes up its new consents and also starts utilizing this carriage way. No consideration has been given to Bolwarra School safety nor Tilly's Day-care safety issues.

The assessment of operational traffic impacts in the TIA included background traffic growth of 2% per year up to 2030 (10 year period), including existing and approved truck movements associated with the Brandy Hill Quarry. This background traffic growth is considered adequate to account for the cumulative impact of other projects in the region that have been approved but have not yet commenced. The assumed growth rate of 2% per year is considered conservative given that future traffic volume increases on the road network are likely to be lower than annual increases over the last decade.

The TIA allows for a maximum of 15 truck movements per hour from the extension of Brandy Hill Quarry along the Maitland route between Tocal Road and Flat Road (SECA, 2021). This is based on the following:

- Brandy Hill Expansion Project's consent allowing for up to 60 truck movements per hour (either arrival or dispatch) for the entire project

- up to 25% of the Brandy Hill Expansion Project's traffic to utilise a secondary haulage route via Clarence Town Road towards Maitland, as assessed in the Brandy Hill Expansion Project's TIA (Intersect Traffic, 2016) under the worst case scenario; this route coincides with a section of the Revised Project's primary haul route, along Paterson Road (between Tocal Road and Flat Road).

The TIA found that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the principal intersections along the primary haul route. Whilst the two signalised intersections are predicted to suffer from increasing delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

The main vehicle access to Bolwarra School is via Bolwarra Road. The intersection of Bolwarra Road and Paterson Road allows for shoulder widening to permit a southbound vehicle to pass a vehicle propped to turn right into the side road to access the school. This intersection is located on a straight section of road with forward sight distance of 200 metres or more. SECA has indicated that this will allow a driver southbound on Paterson Road to adjust their vehicle speed as required and pass a vehicle propped waiting to turn right into Bolwarra Road.

The access to the Tillys Childcare Centre has been designed in accordance with Austroads requirements (in 2016) and satisfied the required of the road authority. This access allows for left in and left out movements only to ensure safe entry and exit movements are provided. If there is a truck driver northbound on Paterson Road following a car wishing to turn right into Tillys Day Care, there will be advanced warning from the vehicle indicators and drivers can adjust their vehicle speed accordingly. For a driver exiting this site the sight distance to the right (south) exceeds 400 metres.

We request the Minister to require the Proponent to address all of these matters of public safety not just those raised by RMS during this process in a revised ADA. If the Proponent is unwilling or unable to resolve these issues then we respectfully submit to the Minister that this should be a ground for refusing consent to the application.

Responses have been provided to all concerns above.

It is noted that consultation with TfNSW was undertaken to confirm that the appropriate approach has been undertaken not to dismiss perceived concerns. Consultation has also been undertaken with DSC, as the relevant road authority.

The biodiversity assessment confirms the SSD6612 area embraces core Koala habitat. We can confirm this with sightings shown below in Attachment 9 – Biodiversity Impacts – Photos of Threatened Species Sightings. The picture taken and included in this application were by locals during 2021 off Vogels Road which adjoins MCRailwayBQ.

Data by the Threatened Species Scientific Committee shows koala numbers on the NSW North Coast will decline by a further 50% over the next ten years to around 4000. This proposal will have a significant impact. The SSD6612 application refers to a management plan yet in the same document states the rehabilitation of the site will be for grazing rather than proactive position of enhancing koala and native flora and fauna habitat.

MCQAG members are concerned for the threatened species impacts that will occur if the ADA is granted an approval. Specifically, there is no mention of any proposed wildlife corridor connections between the Western and Eastern lands of the site and we note historical records of Koalas being found within the quarry extraction pit itself.

A detailed BAR was prepared for the Revised Project which considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

The construction and operation of the Revised Project will result in a range of direct impacts on biodiversity values within the proposed disturbance footprint of the Revised Project.

At no point has the presence of a Koala population in the area been disputed. It is considered that the Revised Project is likely to have a significant impact on the Koala through the clearing of approximately 21 ha of suitable habitat. Impact avoidance, mitigation and management measures have been applied to the proposal and the impacts to this species will also be offset in accordance with the requirements of the FBA, as documented in the BOS (refer to Appendix J of the ADA Report).

In relation to corridors, the BAR indicates the proposed disturbance area does not contain any identified state or regional biodiversity linkages. A site based assessment was completed in accordance with the FBA. There are two connecting linkages through the proposed disturbance area which will be impacted. An assessment of the impacts to these connecting linkages is provided in the BAR (refer to Appendix J of the ADA Report).

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS, included in Appendix J of the ADA Report, has been prepared in accordance with the Stage 3 requirements of the FBA (NSW OEH 2014a), the Biobanking Assessment Methodology (BAM) (NSW OEH 2014b) and the NSW Biodiversity Offsets Policy for Major Projects (NSW OEH 2014c). The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

The area is also known by local residents as a good area for spotted quolls with a number of adjoining residents noting sightings in recent years. It is surprising they weren't found during the survey period. The Spotted-tailed Quoll's conservation status is listed as vulnerable in NSW and endangered under the Commonwealth legislation.

As noted above, a comprehensive BAR has been prepared that considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA, including potential impacts on Spotted Tailed Quoll.

The BAR did not indicate that there would be a residual significant impact on Spotted Quoll (refer to Appendix J of the ADA Report). Regardless, Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project.

MCQAG notes that lot 6 has never been the subject of an environmental impact assessment or development consent that authorised clearing of native vegetation and habitat. We note that His honour Justice Basten stated in *Hunter Industrial Rental Equipment Pty Ltd v Dungog Shire Council* [2019] NSWCA 147 at 121: *'The trial judge was correct to infer from this material that the proposed development was limited to a quarry on lot 5, with an ancillary haul road crossing the south-eastern portion of lot 6 and the eastern portion of the panhandle of lot 5, in order to allow passage to the eastern land where the bulk of the rock was to be processed. An expansion of the quarry onto lot 6 had not been the subject of environmental assessment in the EIS'*.

Past clearing of native vegetation is not required to be retrospectively assessed as part of a development application for proposed development that includes additional land clearing. Past clearing of native vegetation, whether lawful or unlawful, is relevant to determining the cumulative impact that might arise from additional land clearing on biodiversity values. The BAR considers the extent of ecological communities and habitat remaining in the locality in determining the potential significance of impacts associated with the Revised Project.

The BAR considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

The ADA is seeking authorization to clear and extract rock from Lot 6. MCQAG contends that no consideration has been given in the ADA or BIAS for the unlawfully cleared lands and threatened species removal that has occurred historically at the Site.

We request the Minister to require the Proponent to include retrospective assessment and offsetting allowance towards the Lot 6 lands already cleared at the site unlawfully.

As outlined above, past clearing of native vegetation is not required to be retrospectively assessed as part of a development application for proposed development that includes additional land clearing. Past clearing of native vegetation, whether lawful or unlawful, is relevant to determining the cumulative impact that might arise from additional land clearing on biodiversity values. The BAR considers the extent of ecological communities and habitat remaining in the locality in determining the potential significance of impacts associated with the Revised Project.

At the time of writing MCQAG is awaiting receipt of an expert peer review on biodiversity impacts. It is unlikely this report will be ready by the 31st of July 2021, and therefore MCQAG will forward this on as soon as it is available for the Minister's consideration.

At the time of finalisation of this Report, a biodiversity peer review had not been received.

It is noted that the BCD have not raised any significant concerns with the biodiversity assessment (refer to **Section 4.3.1**).

Surface waters-- There is no current monitoring or proposed monitoring of schedule 2 water parameters to fully understand the regional waters and the impact of discharged quarry waters. The receiving water ultimately being the Paterson River has numerous users with stock and domestic rights. The suggestion that the proponent will implement a management and mitigation measures should the project be approved is not consistent with having a full and proper understanding of impacts and being proactive in identifying and managing them.

It is unclear what schedule 2 water parameters are referred to in the submission, these do not reflect any assessment guidelines specified in the SEARs.

A comprehensive assessment of the potential surface water impacts of the Revised Project has been undertaken and is summarised in Section 6.9 of the ADA Report.

Daracon has previously undertaken analysis for a range of pollutants, including metals and hydrocarbons, considered to have a potential to be present in quarry discharges. The water quality monitoring was undertaken in the quarry dams as well as in the Allyn River upstream of the quarry and Paterson River downstream of the quarry. Further details regarding the additional monitoring is provided in **Section 4.1.3**.

We have reported from impacted residents that milky coloured water runs off MCQRailwayBQ during periods of discharge, MCQAG is concerned about the contents and pollutants contained in that run off. MCQAG has previously conducted testing of water runoff from the Site and it should be noted that the samples measured readings of chemicals, pesticides and hydrocarbons. MCQAG will pass the results of this sample on to the DPIE if requested. MCQAG request the Minister to require further comprehensive testing and sampling of the water storage dams at the Site to confirm actual chemical composition and water chemistry to properly ascertain downstream impacts of discharges.

The EPA have investigated reports of 'milky blue grey' water in 2017. The EPA concluded that the data suggests that all sampling undertaken relating to the discharge was in accordance with the requirements of the EPL, specifically that all water limits from condition L2.4 and water monitoring requirements in condition M2.2 were met during discharge.

In addition, Daracon completed an investigation in September 2021 following notification from the EPA that a complaint had been received from a downstream resident regarding adverse water quality. The complainant also made enquiries regarding the suitability of the water for consumption by livestock. The investigation indicated that the discharged water from the quarry complied with the requirements of the EPL and was also demonstrated to be safe for livestock. There has been no specific cause found to explain why the water appeared slightly 'cloudy' when observed downstream. The EPA have raised no concerns with the investigation undertaken.

No comment can be made on sampling conducted by MCQAG as it was not available at the time of preparing this report.

Daracon continue to monitor in accordance with their EPL. Detailed information on water monitoring is provided in the SWIA (refer to Appendix I of the ADA Report) and further details regarding additional monitoring is provided in **Section 4.1.3**.

Daracon has committed to ongoing water monitoring should the Revised Project be approved (refer to **Appendix 2**).

Based on lived experiences (as presented to Mr Sprott and Mr McDonough by video on the 22 June 2021), the proposed hourly and daily scale of trucking movements will have unacceptable impacts upon the heritage precinct of the historic Paterson village.

Mr Reed's request to Respond to Submissions Letter dated 2nd December 2016 specifically required the Proponent to assess impacts resulting from the number and frequency of trucks travelling through the Paterson heritage conservation area. Unfortunately, the author has focused their assessment on only two fronts, the first focus is on impact to heritage features in Paterson relating to changes in road and kerb and gutter design. The second approach of their assessment has focused only on a vibration impact assessment.

It is not clear in the report who the author is nor is it clear what the author's qualifications are in order to provide structural engineering opinions in relation to vibration impacts to heritage buildings nor is it apparent what the author's qualifications are in regard to heritage impact assessments.

We request the Minister to require the Proponent to update the study and confirm the structural engineering and heritage qualifications of the individual(s) who provided the opinions.

The report fails to address Mr Reed's letter. There has been no assessment on the impacts from the proposed number of hourly and daily truck movements through the Paterson HCA.

As part of the ADA process, a Heritage Impact Statement (HIS) was prepared to specifically address the request for additional assessment contained within the submissions received from DSC and DPIE. As outlined in Section 6.11 of the ADA Report, the scope of the HIS involved the assessment of:

- potential vibration impacts (if any) of the proposed number and frequency of trucks on the structural integrity of listed heritage items
- potential impacts to the significance of the conservation area as a result of the number and frequency of trucks travelling through a conservation area
- the impacts of proposed intersection and bridge approach upgrade works on the curtilage and significance of listed items and any conservation areas.

The HIS concluded that the implementation of mitigation measures outlined in Section 6.11.4 of the ADA Report is expected to prevent any impacts on heritage values (including minor cosmetic damage) associated with quarry truck movements.

The HIS was prepared in accordance with all relevant guidelines and standards that apply within NSW and assesses quantifiable and assessable direct and indirect impacts associated with the proposed works. It considers the applicable statutory context, all applicable heritage listings, and the specifics of the applicable LEPs. The HIS meets all assessment requirements that apply to the preparation of heritage impact statements in NSW. The report was prepared by a Senior Consultant with over 10 years' experience in preparing heritage and archaeological assessments.

Concerns regarding the impacts of increased traffic flow on amenity and use of the 'town square' are not heritage issues and cannot be meaningfully assessed within the context of a heritage report. The report assesses the physical impacts of increased traffic in the form of vibration impacts (as is standard practice within this assessment type) but cannot meaningfully assess impacts to the future use, amenity or social values of Paterson, as these are not directly related to heritage as it is assessed under the current guidelines.

We draw attention to NSW Government Heritage Guidelines. A key aspect of that guideline inherent in the NSW Heritage Act and the Burra Charter are principles that are fundamental to planning the care of heritage items and places.

The principles are that:

- **there are places worth keeping because they enrich our lives by helping us to understand the past, by contributing to the richness of the present environment and because we expect them to be of value to future generations**
- **the cultural significance of a place is embodied in its fabric, its setting and its contents; in the associated documents; and in people's memory and association with the place**
- **the cultural significance of a place, and other issues affecting its future, are best understood by a methodical process of collecting and analysing information before making decisions**
- **keeping accurate records about decisions and changes to a place helps in its care, management and interpretation.**

No regard has been given to the above principles in making the heritage impact assessment.

As noted above, the HIS has been prepared in accordance with all the relevant guidelines and standards that apply within NSW and assesses quantifiable and assessable direct and indirect impacts associated with the Revised Project. This includes the NSW Heritage Act and the Burra Charter, although these are not specifically referenced in the HIS.

What impact will 40 trucks per hour and 280 trucks per day have on the cultural significance of the place embodied in its fabric and setting? In order to properly assess the possible impacts, the author must first properly describe the place and the present environment, the author has failed to do this. It then follows, What impact will the number and frequency of trucks have on the HCA? Will the use of the HCA be impacted or changed? will the HCA be effectively divided in two by the proposed number and frequency of hourly and daily truck movements? What affect will that have on the significance and the fabric and richness of that place?

The established significance of Paterson HCA has been outlined in Section 4 of the HIS (refer to Appendix K of the ADA Report).

As discussed earlier, the scope for the HIS was tailored to specifically address the request for additional assessment contained within the submissions received from DSC, DPIE, Heritage NSW and the Paterson Progress Association (PPA).

The HIS concluded that the implementation of mitigation measures outlined in Section 6.11.4 of the ADA Report is expected to prevent any impacts on heritage values (including minor cosmetic damage) associated with quarry truck movements.

An expert report in Attachment 14 – Heritage Impacts details just some of the impacts likely to the HCA. It should also be seen from a starting point in this report that the HIA has failed to even properly or correctly described the HRA let alone the likely impacts that will occur from the proposal.

We request the Minister to require the Proponent to update the HIA and include comprehensive and genuine assessment of the impacts (based on lived experiences detailed in this submission) having regard to the Burra Charter and content of the information supplied by Paterson Historical Society. We respectfully submit that proposed scale of operations will have an unacceptable impact on the Paterson HCA and is therefore another ground to refuse consent to the application.

Attachment 14 in the MCQAG submission included the Paterson Historical Society submission, which is responded to in **Section 5.6** of this report.

As outlined in Section 6.11.1 of the ADA Report, the HIS was prepared based on current listing information that is publicly available via the State Heritage Inventory as well as the Dungog LEP and Maitland LEP.

Once again, we have attached publicly available records of complaints in relation to the MCQ facility in Attachment 3 – Complaint Records. 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 and within residents' submissions from 2016, blasting impacts include shaking of crockery, cracking of walls and brick work, the noise of mortar falling down brick cavities immediately after each blasting event. Disturbance to horses and other pets and even the reported shaking off of a toilet cistern from a bathroom wall, have occurred.

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.

Relevantly we bring to the attention of the Minister lay witness evidence referenced in in *Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2) [2018] (671)* that: Ms [redacted] has been a resident of Martins Creek since before the 1990 development application was lodged by SRA. Ms [redacted] lodged an objection to the SSDA. (Evidence Book Vol 3 at pp. 1888-1889).

She moved to the area some thirty years ago in pursuit of an 'idyllic country lifestyle'. She also noted that '...while the quarry was operational and run by RailCorp, the workload had minimum impact on our lives.' Ms [redacted] observed a marked change in the operations after 'Daracon' (i.e. the respondents) took over. She complains that 'previously the blasting resembled a faraway explosion it has now become so intense that the ferocity of the blast led me to believe an earthquake was rumbling up the road, shaking the house and rattling the windows. This is not something you quietly adapt to, it delivers the same instinctive fear every time.' She also complains about dust which she attributes to the quarry."

The experiences of residents do not correlate to the published blast monitoring data that indicates compliance with relevant criteria.

Blasting impacts, in particular potential damage to private property, was identified by the community as an issue of concern during the stakeholder engagement undertaken for the ADA process. This was consistent with community feedback received during the exhibition of the 2016 EIS. As highlighted in the ADA Report, Daracon has continued to take the community's feedback on board and sought to address it through project design changes such as reducing the blasting window, and operational changes by committing to independent blast monitoring.

During 2019, Daracon commissioned an independent inspection, monitoring and reporting relating to blast vibrations from the quarry at a residence in Vacy. The peak particle velocity of the measured blast was measured at a magnitude of 10 to 20 times lower than the levels likely to cause damage to residential properties. The investigation indicated that the residence had not been damaged due to blasting operations at the quarry.

Furthermore, a comprehensive Blasting Impact Assessment (BIA) (Bellairs, 2021) was undertaken for the Revised Project as part of the ADA process. This assessment found that:

- blasting activities at the quarry have demonstrated compliance, with the implementation of existing blast management protocols and risk mitigation measures, with the ANZECC 1990 guidelines and licence criteria.

- the three current licenced monitor locations have been assessed as appropriate as they are representative of the vast majority of residences, including those closest to the quarry.
- the use of the existing blasting measures and the ability to manage blast induced vibration and air overpressure will enable the Revised Project to meet the guidelines and relevant licence criteria.

As highlighted in Section 8.1.8 of the ADA Report, Daracon has committed to the implementation of a range of appropriate blast management controls necessary to meet the relevant criteria for private residential receivers, heritage items and infrastructure. Daracon will also continue to consult with residents via letter box drops to inform them of the blast time the following day as well as an SMS or email on the day of the blast notifying neighbours of the time of day the blast is to occur.

We note the Proponent claims to have completed a dilapidation survey on one impacted residence. If the ADA gains consent, we request that an independent structural engineer be required to complete dilapidation surveys on all dwellings in Vacy and Martins Creek that are impacted by blast events at the Site. We note that historically blast monitoring equipment has been located non compliantly (in the shadow of structures) with sensor spikes incorrectly installed.

We continue to query the validity of blast monitoring data collected at the Site.

We understand the current blasting guidelines do not assess or provide criteria for harmonic/resonant vibration in building structures during blasting events. MCQAG committee is aware of data, research and papers relating to this effect occurring in impacted receptors around quarries in Queensland. We believe this could be a plausible explanation for the difference between ground measured readings and residents' observations of impacts. If consent is to be granted to the ADA we request that the proponent install fixed sensors on dwelling structures to monitor and evaluate resonant vibration of dwellings to MCRailwayBQ blasting events, and that the results be available for public inspection.

As outlined in Section 6.7.3 of the ADA Report, independent monitoring of blast induced vibration and air overpressure has also been undertaken on two separate occasions without the knowledge of Daracon about the time of the monitoring, and involved:

- Daracon commissioned a specialist blast monitoring company to undertake an independent blast monitoring audit. The results confirmed the quarry blast monitoring data for the blast monitored.
- The second and far more extensive monitoring audit was conducted by the EPA, which included monitoring of 13 separate blasts from the quarry during 29 March 2018 to 27 August 2018 at a location in View Street, Vacy. The EPA found that the vibration and overpressure monitoring undertaken during the EPA's review period was appropriate for complying with the conditions of the EPL, with no breaches of the EPL limits or conditions.

In addition, Lindsay Dynan Consulting Engineers were engaged to undertake inspections, monitoring and reporting relating to blast vibrations from the quarry. A representative structure (residential dwelling) was selected for the blast monitoring assessment, being 24 View Street, Vacy due to its proximity to the quarry and for its typical residential construction style. The assessment indicated that the peak particle velocity of the measured blast was of a magnitude 10 to 20 times lower than the levels likely to cause damage to residential properties. The assessment found that the dwelling at 24 View Street, Vacy has not been damaged by the blasting operations at the quarry. Similarly, due to the representative selection of the property, and its proximity to the quarry, it is considered unlikely that any other residential buildings, located in View Street, Vacy, have been damaged due to the blasting operations at the quarry (Lindsay Dynan, 2019).

As part of the Revised Project, Daracon has committed to the implementation of a range of blasting controls and management measures, should the project be approved. This will include the development of a Blast Management Plan (BMP) in consultation with the EPA. The BMP would be implemented for the Revised Project, together with further measures detailed in Section 8.1.8 of the ADA Report.

Daracon has further committed to independent blast monitoring to be undertaken for three blasts within the first year of the Revised Project by an independent qualified person, and in consultation with the EPA. Daracon will consult with the Martins Creek CCC and/or representative of DSC in relation the monitoring times and locations.

As outlined in **Section 4.12**, Daracon has also committed to structural assessment of any privately-owned land within 500 metres of the approved quarry pit to establish the baseline condition of any buildings and structures on their land, if a written request is received from the owner.

At the time of writing MCQAG is awaiting the finalization of an expert peer review of the ADA Cost Benefit Analysis. MCQAG shall forward this document on in due course when received, for consideration by the Minister.

A peer review of the Cost Benefit Analysis had not been received at the time of preparation of this report.

As detailed in MCQAG's meeting with DPIE's Mr Sprott and Mr McDonough, it is apparent that the Proponent has not yet addressed nor assessed multiple other reasonable and feasible mitigation measures (other than by making statements in the ADA that they are not commercially acceptable) that could be implemented to mitigate impacts to residents as part of the Proposal.

MCQAG has attached the results of a study conducted on the modern quarrying facilities in the Southern Highlands, the findings highlighted numerous reasonable and feasible measures that have not been scoped or evaluated in any detail within the ADA, these include a 2.7km private road and \$34million interchange on to the Hume Highway at Holcim's Lynwood Quarry (current scale 2.2Mtpa) to ameliorate trucking impacts on the village of Marulan, Gunlake Quarry (formerly scale 0.7Mtpa now 2.0Mtpa) utilizes a 3.6km by pass along Red Hills Rd to ameliorate impacts of trucking on the village of Marulan, Multiquip's Ardmore Park Quarry (current scale 0.4Mtpa) was required to construct a 6km private bypass road around the village of Bungonia to ameliorate the community of trucking impacts, Boral Peppertree Quarry (current scale 3.5Mtpa) transports 100% of its product to market by rail and Holcim Lynwood Quarry transport a significantly greater proportion of product to market by rail than road. Multiquip's Ardmore Park Quarry was required to upgrade 23km of regional road network to bring the entire route up to Ausroad Standards.

Closer to home in the local area of MCRailwayBQ, the neighbouring Brandy Hill Quarry was required under condition 12 of its 1981 consent to construct Brandy Hill Drive as a heavy vehicle bypass road to ameliorate the impacts of quarry trucks through the village of Seaham. See Attachment 13 – Brandy Hill Quarry 1983 Consent Conditions (exert) for details.

Having regard for the 2016 EIS and now the ADA, both have failed to properly and comprehensively assess other reasonable and feasible measures;

We ask what other bypass alternatives exist around Paterson other than the one ruled out by council in 2014? Has a scoping and feasibility study been completed on an alternate route via private property around the Western side of Paterson village? Have any landowners been approached? What is the likely capital cost of a bypass based on a concept design and how does that capital cost impact the NPV and CBA of the project?

Reasonable and feasible mitigations measures for a project are dependent on a number of factors. It cannot be assumed that what is reasonable and feasible for one project will be for another. This approach has little to no regard for the individual circumstances of a project.

Despite MCQAG's assertions, Daracon has assessed potential alternatives and other mitigation measures, as outlined in the ADA Report. It is understood that MCQAG does not accept Daracon's position and does not acknowledge the attempts made by Daracon to ameliorate impacts from the Revised Project, compared to the Original Project.

As discussed in the ADA Report and in this report, there is no obvious or viable alternate bypass option for Paterson. To that end, no consultation with landholders has taken place nor can a CBA be undertaken.

As highlighted in the ADA Report, the Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Revised Project.

- **What alternate road routes to market exist? Why has the use of Dungog Rd via Clarence Town Rd not been assessed as a shared or alternate transport route to ameliorate impacts on residents along Haul Route 1. This has been previously raised with the Proponent as a reasonable and feasible route which would add only 20 minutes travel time between MCQRB and the Hexham interchange. What is the likely capital cost of a splitting haulage along an alternate Route 2, based on a concept design and how does that capital cost impact the NPV and CBA of the project?**

Daracon initially proposed an additional haul route, to the east via Paterson Road/Butterwick Road/Clarencetown Road/Brandy Hill Drive/Seaham Road to connect with the Pacific Highway at Raymond Terrace. This option further proposed a daily peak of 215 laden trucks (430 movements) and 40 laden trucks per hour (80 movements). Due to ongoing concern from the community and local stakeholders in relation to traffic and transport, alternative road haulage options and volumes were investigated.

A further option considered by Daracon was using Martins Creek Road for empty trucks and the Paterson route for loaded trucks. This was initially investigated and determined that Martins Creek Road was not feasible due to physical and engineering constraints.

The use of Dungog Road via Clarence Town Road was ruled out based on potential increased cumulative impacts with the Brandy Hill Quarry, including for Seaham and Clarencetown, and increased travel distances.

- **Why has 100% by rail been disregarded within the ADA? In contradiction the Rail Logistic Report in section 5.7 confirms that a throughput of 1.1million tonnes would be required for a 100% rail option transporting aggregates into Newcastle's Port Waratah. The author states that that fixed costs would have to be spread across a throughput of 1.1million tpa in order to compete with other quarries in the market transporting by rail.**

Section 5.7 of the Rail Logistic Report (Plateway, 2021) states:

There are currently no suitable and existing operating rail receival terminals for aggregate in the Hunter Region.

The section then goes on to discuss the indicative costs for the development of a new rail receival location. The Rail Logistic Report indicates that the most likely locations in the lower Hunter area which could support rail receival of aggregates are in the vicinity of the Port Waratah complex in Carrington and around the Sulphide Junction / Teralba area which connect with existing or former industrial rail lines.

The Rail Logistic Report (Plateway, 2021) also states that on average, these two locations combined would have the capacity to take around 300,000 tonnes per annum of product from quarry.

The opportunity to avoid any road haulage of quarry product, and transporting all quarry product by rail, has often been raised during the community engagement process. Whilst Daracon now propose to significantly reduce the proportion of quarry product delivered by road, it is not feasible to continue quarry operations with no road haulage, and have all the quarry product transported by rail.

As part of the ADA process, Daracon have identified a rail receival facility in Western Sydney, which is feasible to use for delivery of quarry product to supply major construction industry demands for the Greater Sydney Metropolitan Area. On this basis, approximately 600,000 tpa (54.5%) of the proposed total quarry production of 1.1 Mtpa, may be transported by rail. Subject to market demands, Daracon may increase the amount transported by rail, on a campaign basis, within the 1.1 Mtpa of total quarry product.

Whilst Daracon are committed to continuing to investigate opportunities to minimise the need for road haulage to supply regional markets, it is not currently feasible. The ability of the quarry to increase rail distribution of aggregates within its current distribution area is limited by the lack of suitable rail unloading facilities, large number of product destinations and types, short haulage distances and the fact that a number of competing quarries use the road system as a more commercially viable and flexible supply to service the same markets.

Despite extensive investigation (refer to Section 6.3.4.3 of the ADA Report), there is no current feasible option to use rail logistics to supply the local and regional market for the Revised Project.

These suggested mitigations have been raised with the Proponent on numerous occasions. We request the Minister to require the Proponent to make a meaningful assessment of other reasonable and feasible measures as detailed above (and elsewhere in this document) to ameliorate lived experiences and the clear unacceptable social impacts that will occur if approved by the 40 hourly and 280 daily peak trucking movements proposed.

As outlined above, despite MCQAG's assertions, Daracon has assessed potential alternatives and other mitigation measures, as outlined in the ADA Report. It is understood that MCQAG does not accept Daracon's position and does not acknowledge the attempts made by Daracon to ameliorate impacts from the Revised Project, compared to the Original Project.

Daracon have considered the feasibility of a range of alternatives to key project design features. Key alternatives included the following project aspects, which are described in further detail in Section 2.12 of the ADA Report:

- alternative quarry pit designs and quarry operational parameters
- alternative road haulage configurations and volumes
- alternative rail loading and rail spur considerations.

5.2 Hunter Environment Lobby

HEL's primary concerns are about the impacts its operations has on habitat of endangered animals. We believe that 21 HA of endangered Spotted Tailed Quoll habitat will be destroyed, we also believe that there have been koala sightings and scat findings in the vicinity.

We believe that it is these issues alone that should weigh in the balance of permission to destroy habitat or not, as both these species are a beacon to showing whether our environment is sustainable or not.

A comprehensive BAR has been prepared that considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA, including potential impacts on koalas and Spotted Tailed Quoll.

The construction and operation of the Revised Project will result in a range of direct impacts on biodiversity values within the proposed disturbance footprint of the Revised Project.

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS, included in Appendix J of the ADA Report, has been prepared in accordance with the Stage 3 requirements of the FBA (NSW OEH 2014a), the Biobanking Assessment Methodology (BAM) (NSW OEH 2014b) and the NSW Biodiversity Offsets Policy for Major Projects (NSW OEH 2014c). The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

The other issues surrounding this quarry are increased air quality degradation and noise as well as traffic issues which will also weigh heavily into the debate, we believe that the precautionary principle should apply when weighing the benefits or not of development applications.

HEL has not objected to the moving of needed rail ballast by rail, but we object to this over development and destruction of habitat needlessly which endangers the health of local populations at the same time.

A detailed assessment of potential air quality, noise, and traffic and transport issues have been undertaken in accordance with the relevant guidelines (refer to the ADA Report).

The EP&A Regulation defines the precautionary principle as:

‘if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

- i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
- ii. an assessment of the risk-weighted consequences of various options.*

In order to achieve a level of scientific certainty in relation to the potential impacts associated with the Revised Project, the ADA Report has undertaken an extensive evaluation of all the key components of the Revised Project. Detailed assessment of all key issues and necessary management procedures has been conducted and is comprehensively documented in the ADA Report.

The assessment process has involved a detailed study of the existing environment (refer to Section 6.0 of the ADA Report), and the use of engineering and scientific modelling to assess and determine potential impacts as a result of the Revised Project. These models have been calibrated using data gathered from the previous quarrying operation (e.g. noise, air, water and blast monitoring data) to ensure the models are robust and appropriately characterise the Revised Project, allowing the impacts to be predicted and evaluated. To this end, there has been careful evaluation to avoid, where possible, irreversible damage to the environment.

The decision-making process for the design, impact assessment and development of management processes has been transparent in the following respects:

1. Government authorities, landholders potentially affected by the Revised Project, the local community, the Aboriginal community and other stakeholders were extensively consulted during the preparation of the updated environmental assessment (refer to Section 6.0 of the ADA Report). This enabled comment and discussion regarding potential environmental impacts and proposed environmental management procedures.
2. The community has been comprehensively engaged throughout the design and assessment of the Revised Project through a range of mechanisms including face to face meetings, presentations, collaborative assessment forums and community newsletters to inform the Revised Project design and proposed management of key issues (refer to Section 6.0 of the ADA Report), which provided stakeholders with both information and the opportunity to influence the Revised Project outcomes.
3. Daracon will update and implement a comprehensive Environmental Management Plan (EMP) for the Revised Project. Through implementation of the EMP, Daracon will seek to implement best practice management. The Revised Project will incorporate the practices implemented and demonstrated to be effective at the recent approved operations. The EMP will also incorporate the additional controls committed to in **Appendix 2** of this report.
4. The updated environmental assessment has been undertaken on the basis of the best available scientific information about the Project Area and has been informed by site specific survey, monitoring, modelling and environmental and social assessment. Where uncertainty in the data used for the assessment has been identified, a conservative worst-case analysis has been undertaken and/or sensitivity analysis undertaken to assess a range of potential impact scenarios. Contingency measures have also been identified to manage areas of identified uncertainty. Extensive management and mitigation measures will be implemented, including monitoring programs to measure predicted against actual impacts of the Revised Project (refer to **Appendix 2**), so that contingency measures, if required, can be implemented in a timely and pro-active manner. As noted earlier the recent operations and the management practices implemented provide a high degree of confidence in both impact predictions and the need for, and the likely success of, proposed management and mitigation measures.

The Revised Project has been assessed against the principles of ESD as required by the EP&A Act. This assessment has indicated that the Revised Project is consistent with the principles of ESD.

The SIA has identified that the key negative social impacts predicted include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts. Positive impacts of relevance include potential economic benefits to the region and State through employment, procurement and business opportunities.

The Revised Project will also lead to a secured availability of construction materials for markets across NSW.

the environmental and social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

On this basis, it would be reasonable to consider that with the implementation of the management, mitigation and offset measures proposed by Daracon, the Revised Project will result in a net benefit to the NSW community.

Previously Daracon were seeking to expand the facility from what was a 300,000 tonne per annum railway ballast production to one which is seeking to increase the scale to 1.1 million tonnes per annum. The main problem is that the increase will be trucked not railed to its destination.

At that point, we understand the plan is for all trucks to go via Bolwarra to the Highway at Melbourne St East Maitland, so Butterwick Rd/ Brandy Hill Dr would only be used for local destinations on those roads.

However, if you travel to Paterson or Maitland, you will have experienced how much, when that quarry was operating illegally, that the quarry truck traffic adversely impacted on the residents, businesses and other road users on that route.

The Martins Creek quarry truck volumes under this plan will be similar to then. The growth of Maitland since, means traffic queues and congestion in Maitland and East Maitland in particular are now much much worse, without any Martins Creek quarry trucks. With the planned Brandy Hill quarry expansion sending 25% of trucks also via Maitland, the future traffic noise, congestion and impacts in the future will be amplified.

Quarry operator Daracon wants to triple its annual output, increasing the number of freight vehicles and trains moving through the region.

The assessment of operational traffic impacts undertaken in the Traffic Impact Assessment (TIA) included background traffic growth of 2% per year up to 2030 (10 year period), including existing and approved truck movements associated with the Brandy Hill Quarry. This background traffic growth is considered adequate to account for the cumulative impact of other projects in the region that have been approved but have not yet commenced. The assumed growth rate of 2% per year is considered conservative given that future traffic volume increases on the road network are likely to be lower than annual increases over the last decade.

The TIA for the Revised Project shows that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the signalised intersections of Pitnacree Road/Melbourne Street/Lawes Street and Melbourne Street/New England Highway. Whilst these intersections are predicted to suffer delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

5.3 Paterson Progress Association

Employment

Paterson is a lively community serviced by a number of local businesses which cater to locals and tourists alike. Even if the ADA quarry expansion were to be approved local businesses employ many more than the quarry does and is ever likely to. These businesses also employ real 'locals' living in or close to the town. Not what Daracon defines as 'local' - up to 40km away from the quarry. That is not local. If approved, the businesses in town will suffer. This in turn will ripple down to employment. Jobs will be lost.

Consultation with businesses for the SIA, particularly those within Paterson, centred on concerns regarding the impact of the Revised Project on their business operations and livelihoods. Consulted community members felt that the Revised Project and associated trucks were causing decline of business in Paterson due to noise, increased safety issues, decreased ability to walk around village and issues with parking. These impacts were seen to cause a reduction in the amenity of the village and deterring people from shopping in Paterson.

During SIA consultation activities, the impacts to Paterson village businesses were also discussed in relation to proposed intersection upgrades for King and Duke Street, Paterson and concerns with regarding to the loss of car parking and flow on effects to their business. A number of specific concerns were expressed at this session including:

- Reduced access to the Paterson service station and difficulties in being able to turn right into and out of this business.
- Queries regarding how alterations to the footpath outside the post-office would impact on the post-office if it is listed as a heritage building.
- Loss of on-street car parking and how this may impact businesses, tourism and community amenity. It was noted that the car space outside the Post Office is frequently used by the elderly, delivery trucks and customers for parcel pick up and drop off and that the removal of this space could prevent people from stopping altogether.
- A proposed carpark to be located on land purchased by Daracon in Paterson needed adequate parking spaces and visibility and that the community will not use this as they prefer to park on the street.
- A view that the intersection designs do not benefit the community or align with promoting the area as a tourist location.
- Cyclists take into account the condition and risk of routes prior to riding.
- Concerns for safety of pedestrians using the pedestrian refuge.

As a result there was no alignment in the Traffic CAF feedback on:

- the locations of pedestrian crossings or even the utility of inclusion of pedestrian crossings as part of road enhancements that may assist with public safety issues and minimising impacts on local businesses
- Daracon's offer to establish off-street parking.

Daracon committed to developing an additional intersection design option and further targeted engagement with Paterson businesses was subsequently undertaken to understand their feedback on this revised intersection design and further specific concerns relating to the Revised Project and how proposed changes may affect and how these could be minimised.

The proposed King Street and Duke Street intersection that was presented at these subsequent meetings included the following elements:

- relocation of the existing driveway on the north side of the intersection slightly west to improve the space allocation for parking on either side of the driveway and improve carparking capacity along this northern kerb line
- relocation of the existing direction and hazard signage on northern side of intersection
- refreshing dividing line markings through the intersection
- modifications to the footpath, kerb ramp and kerb and gutter on the south-western corner of the intersection to accommodate the design vehicle turn path
- relocation of the existing 'No Stopping' sign in front of Telstra phone box to power pole adjacent to Post Office driveway and removal of the existing single carparking space to accommodate design vehicle turn path.

Further detail on this proposed intersection design is included at Section 2.0 of the ADA Report.

As outlined in the SIA (refer to Appendix O of the ADA Report), the livelihood impact to local businesses and the tourism economy is considered of high stakeholder significance.

Community identified mitigation and management measures regarding management of potential impacts have been summarised at **Table 4.10** along with Daracon proposed onsite management strategies for the Revised Project.

Social Licence

The spin that Umwelt/Daracon have infused into the ADA via technical reports is palpable. We refute the majority of what is contained within the reports that indicate noise, dust, water pollution and social impact issues are within acceptable government parameters. We understand that government agencies require a bench-mark to base their recommendation on but the results of the ADA listed amendments (21) do not tally with the lived experience. The PPA finds the process of examining and assessing the technical reports submitted by Umwelt/Daracon an unfair process as by its very nature it favours the proponent. They have the money, expected to be in the millions, to engage experts in their field whereas individuals and small community associations and organisations have nowhere near the financial might to contest the results of each report.

It should be noted that the technical reports in the ADA use recent quarry history to base their claims. What these reports neglect to acknowledge is that during this time, particularly when Daracon were in control of the quarry, is that the quarry was operating illegally. Much of what is contained within the technical reports should be considered inadmissible. The baseline extraction amount is the 1991 consent. As determined by Justice Molsworth in the NSW Land and Environment Court. [Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2) [2018] NSWLEC 153]

The ADA Report and accompanying specialist reports have been completed by independent experts and in accordance with relevant government guidelines and policies.

As noted in **Section 5.1**, the ADA Report, and relevant assessments contained within, have assumed the baseline is either the parameters of the 1991 consent (as set out in **Section 1.2.1**) or no quarry operations, which is a conservative approach.

For the purposes of detailing the ADA, the ADA Report compared the Revised Project against the Original Project. The ADA Report and assessments do not assume that the baseline for the Revised Project is the Original Project.

Daracon are not doing the community a favour, as they spin it, by reducing the proposed extraction amount from 1.5 mtpa to 1.1 mtpa but are actually increasing extraction from 300,000 tpa to 1.1 mtpa. The extraction of up to 300,000 tpa of rail ballast, 70% by rail and 30% by road, is accepted by the community. If this amount is not financially viable it's not up to the community to make that decision or the NSW Department of Planning and Environment nor the IPC. That decision lies solely with Daracon.

As highlighted in the ADA Report, the Revised Project represents the culmination of a thorough process of reviewing project alternatives to address issues raised in agency and public submissions and further reduce environmental and social amenity impacts associated with the Revised Project. The proposed parameters of the Revised Project are provided in **Section 1.1**.

The proposed extension of the quarry is intended for the supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

If Daracon wishes to reinstate lost community social licence they must put in place infrastructure that will enable the quarry and the residents to coexist equitably. All quarry processing to be enclosed in noise attenuating buildings. Light screen placement at the quarry to mitigate light spill to neighbouring properties. A bypass road around Paterson. Rail facility upgrade. Many other quarries within New South Wales have constructed such infrastructure and have a positive social licence within nearby communities.

Daracon have committed to mitigation measures to manage the potential impacts of the Revised Project, as outlined in the ADA Report and **Appendix 2**.

As outlined in **Section 5.1**, the potential to bypass Paterson has been raised during stakeholder engagement and was investigated in the ADA process, as outlined in Section 2.12 of the ADA Report. Whilst there was previously a road corridor for a bypass allocated in DSC's local planning provisions, Daracon was advised in 2014 that DSC no longer supported that proposal. The land previously allocated as a bypass through the outskirts of Paterson have been developed for other purposes. The proposed new access road provides a bypass for the village of Martins Creek, at a cost of approximately \$3-4 million to Daracon.

There is no economically viable or feasible route for traffic associated with the quarry to bypass the village of Paterson. Detailed consideration has been given to mitigation measures that could be implemented within the constraints of which the quarry operations to improve social amenity and safety for local communities (refer to **Appendix 2**).

At a recent community meeting held on June 24 2021, convened by the Martins Creek Quarry Action Group, approximately 200 community members voiced their concern and anger with the ADA. The DoP may have viewed the meeting on facebook, as they were unable to attend. It can be viewed at www.facebook.com/mcqag/videos/958156865037200/

The PPA believes the presentation was clear, factual and without emotion. What did come across, when summarising questions from the floor, is the complete lack of trust in Daracon. Many said that they are a company that cannot be believed no matter what is stated in the ADA to mitigate the impact to residents of an expanded quarry.

Daracon acknowledge that relationships within the communities around the quarry have been impacted by the previous quarry operations. Daracon is committed to investing time and resources to rebuild trust within the local community. Daracon will continue to consider the local community as part of their decision making processes at the quarry now and in the future. This is demonstrated by the changes made to the project design as a result of the ongoing consultation with the community.

Daracon is committed to open, respectful and effective communication with local communities in all regions in which we operate. This can be clearly demonstrated through numerous examples across the business, including other active quarry operations.

The Revised Project is a key element in building strong relationships moving forward. The complexity of legacy consents under which the quarry was operating for many decades before Daracon took control has led to confusion and frustration for all parties. Daracon acknowledge that in this complex environment, some of their operations were characterised by poor decisions and practices that negatively impacted the local communities, resulting in residual low levels of trust.

The Revised Project seeks to modernise the consent for the quarry operations. Should the Revised Project be approved, the conditions of consent will clearly specify project requirements and obligations for the quarry and its associated operations. As part of the approval conditions, Independent Environmental Audits will be required to evaluate compliance with the consent conditions and assess the environmental management and impact of the development. These audits will be publicly available on the Martins Creek Quarry website.

To improve the relationship with the community and other key stakeholders Daracon has already committed to the implementation of a number of strategies.

In 2020, the company engaged a an experienced Community Liaison Representative with the objective of re-establishing relationships with local landholders and other key stakeholders. It is Daracon's intent that this role will continue should the Revised Project be approved with the Community Liaison Representative to be responsible for the ongoing delivery of a Community Engagement Program that includes mechanisms allowing for the sharing and exchange of information between Daracon and its stakeholders on a regular basis.

Further, Daracon is committed to the development and implementation of a SIMP which will include appropriate monitoring, reporting and review mechanisms and a process for making information regarding ongoing company activities, monitoring results and associated information publicly available in an open and transparent way. While such information has been available in the past, both the SIMP and supporting Community Engagement Program will provide a structure for this to take place.

As a component of the ongoing Community Engagement Program, Daracon has also committed to re-establishing and operating a CCC in accordance with the DPIE's Community Consultative Committee Guidelines: State Significant Projects (2019). Daracon will work with the Independent Chairperson establish the necessary framework to ensure the transparent operation of the CCC to meet its intended objectives.

Daracon is also committed to the implementation of a targeted Community Contributions and Wellbeing Fund. While investment in the community has been undertaken in the past, activities moving forward will be more strategically directed to investment and sponsorship activities that have a focus on:

- mitigating the direct and indirect impacts of the quarry on the local community
- working collaboratively with key stakeholders to focus on sponsorships and in-kind contributions that target impact areas and enhance local values with a focus on the villages of Martins Creek and village of Paterson, and other localities as relevant
- enhancing positive impacts associated with the presence of the operation in the community, e.g. local employment and procurement
- developing projects and programs that are consistent with community needs, values and aspirations
- contributing to local communities and better targeting investment spend locally.

The existing donations and sponsorship program would see a shift towards assessing applications and distribution of donations to community-led initiatives, with a clear set of criteria for assessment of applications with funding criteria aligning with the areas of focus arising from the SIA and identified community needs. This is to be achieved through the development of a Community Contributions and Sponsorship policy that includes funding criteria and a process to determine priorities. Community investment and sponsorships will only be in strict accordance with this policy.

The establishment of funding criteria will involve key stakeholders therefore it is intended that the development of criteria for this investment will be determined in collaboration with the CCC once formed. Having an experienced community relations officer to manage the program will ensure local level insight and an understanding of community needs is combined with the company's existing donations management and administration.

Investments made via the Community Contributions and Sponsorship policy will not replace the responsibilities of government and associated spending under the yet to be negotiated VPA.

Trucks and Road Safety

The most prominent concern of residents is that of trucks traversing the small rural roads through and near Paterson. The quarry was constructed to only ever transport rail ballast by rail. This was a time long before a 'truck and dog' bulk transport mode was dreamed of. The roads of Paterson were never designed to accommodate up to 280 large trucks per day.

Daracon have gone some way to mitigate the impact of trucks through the town but a cynical tweak here and there to 'get this over the line' will not appease the community. Up to 280 trucks per day will create dust, diesel fumes (containing harmful nitric oxide (NO) and nitrogen dioxide (NO₂), noise - both motor and chassis and considerable damage to roads and heritage buildings due to vibration. Safety is also a huge issue, particularly truck interaction with school children and school buses. Also, there have been many recorded and anecdotal incidents of rock and stone falling from trucks which has caused damage to vehicles and great concern to the community.

The PPA's past experience with quarry trucks travelling to and from the quarry has evoked a reason to be concerned about what is to come if the ADA is granted. Behaviour of the drivers is poor at best and often dangerous. This relates particularly to contract truck drivers that Daracon have little control over. Speeding, cutting corners, tailgating are just a few examples of what residents have witnessed and endured. Do Daracon really think drivers signing a Code of Conduct will control driver performance? If so, they are delusional.

We read in the Traffic Impact Assessment that route 2 has been deleted from two of the primary haulage routes. Does that mean that quarry trucks returning to the quarry will use route 1 only? Or will they go where they like - typically a faster route therefore increasing daily haulage trips. This needs to be clarified. Also, only local deliveries will use the previously named haulage route 2. What does that mean? Is there a tpa limit for route 2? How will Daracon control contractors if they wish to use route 2 as their preferred haulage route which to them may be a shortcut that is not considerate of those that live on that route.

As addressed in earlier sections, Daracon recognise that traffic and transport issues are of key concern to the community, in particular with regards to the volume of truck movements, transportation hours, and road capacity. Consequently, Daracon have undertaken a thorough review of the Original Project to redesign key operational parameters in order to reduce environmental and social amenity impacts, in particular in relation to traffic and transport.

In response to community concern, Daracon have committed to the following revised operational parameters as part of the redesign of the conceptual quarry plan for the Revised Project:

- reduction in tonnes transported by road to 500,000 tpa
- reduction in peak trucks per hour to:
 - 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
 - 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm
- road haulage of quarry product to occur 7.00 am to 6.00 pm Monday to Friday, with no haulage of quarry product on Saturday, Sunday, public holidays or between 24 December and 1 January
- no trucks through Paterson prior to 6.45 am Monday to Friday
- removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required).

Apart from local deliveries, all road haulage (laden and unladen) will be on the primary haul route (Haul Route 1).

An updated TIA was completed for the Revised Project (refer to Section C of the ADA Report). The TIA indicates that while there will be an overall increase in traffic along the primary haul route due to the Revised Project, the proposed annual output of the quarry for which approval is being sought will have an acceptable impact upon the road network that forms the haul route between the New England Highway and the site. The assessment shows that the road has adequate capacity and is currently operating within acceptable guidelines provided by the RTA Guide to Traffic Generating Developments.

Additionally, the TIA found that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the principal intersections along the primary haul route. Whilst the two signalised intersections are predicted to suffer from increasing delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

An assessment of air quality impacts associated with road haulage for the Revised Project has also been undertaken (refer to Appendix E of the ADA Report). Regarding diesel emissions, the AQIA modelling results showed that the diesel exhaust emission concentrations (including CO and NO₂) associated with road transport of quarry product would comply with the relevant criteria at all sensitive receivers.

As outlined in Section 6.4 of the ADA Report, the updated NIA for the Revised Project has indicated that baseline/existing road traffic noise levels exceed the RNP criteria for some receivers due to existing traffic rates without the quarry trucks present. The addition of quarry trucks does not result in an exceedance of the RNP criteria where it was not already calculated to exceed with baseline traffic levels. Where the RNP criteria are already exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB(A) are considered barely perceptible to the average person.

The addition of quarry trucks will increase the road traffic noise levels at all the sensitive receivers assessed, however the maximum traffic generation scenario modelled will not increase the road traffic noise levels at any sensitive receiver by more than 2 dB and therefore meet the relevant RNP criteria for new developments.

As outlined in the ADA Report, Daracon has removed Haul Route 2 as a primary haul route from the Revised Project to further reduce traffic and transport impacts. As it is unknown at this stage which local projects would be sourcing quarry products from the quarry, it is not possible to identify which local roads would be used and how often deliveries would be made.

It is expected that through its development application, each of the local projects would identify where resources would be sourced from and would gain approval for the increased truck movements on the local road network as part of that development consent, should it be required.

If Daracon is called upon to assist in providing quarry material in response to an emergency event it will; advise the community, the relevant council and the EPA, at the soonest possible opportunity, in accordance with any emergency response plan enacted by the relevant State or National authority.

Daracon will monitor truck routes to ensure that Haul Route 1 is used as the primary haul route.

The fact that the quarriable resource is in the location of Martins Creek does not mean that the resource there must be exploited, regardless of the adverse impacts of doing so. A development that seeks to take advantage of a natural resource must, of course, be located where the natural resource is located. But not every natural resource needs to be exploited.

The proposed continued operation and extension of the quarry is intended for the ongoing supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

As highlighted in the ADA Report, the quarry is unique in that it is the only hard rock quarry in the Hunter offering washed manufactured sand to meet the requirements of high strength concrete specifications and coarse drainage sand for biofiltration and filter sand. The quarry can produce two unique hard rock products to satisfy specific TfNSW/RMS road building specifications. These materials are considered especially important for the construction of heavily trafficked roads and supply of these would assist in the objectives of the NSW and Federal governments to improved regional infrastructure and transport networks.

5.4 Greens NSW

The Biodiversity Assessment Report prepared by Conacher Consulting Pty Ltd in May 2021 indicates that a number of threatened species will be ‘significantly impacted’, including koalas, Regent Honeyeaters, Swift Parrots and Spotted-tailed Quolls. The site area is within the Barrington Area of Regional Koala Significance and koalas have been detected within the project area by several different environmental consultants’ assessments since 2007. The report states: “the site is also likely to contain Core Koala Habitat as a resident population of the Koala is considered to be present, as evidenced by recent sightings and historical records of a Koala population”.

Last year, a NSW Upper House Inquiry found that, without urgent government intervention, koalas would be extinct by 2050 and “fragmentation and loss of habitat poses the most serious threat to koala populations in New South Wales”. The Martin’s Creek Quarry expansion proposes unacceptable loss and degradation of core koala habitat and further harm to populations that have already suffered the devastating effects of drought, bushfires and land clearing.

A detailed BAR was prepared for the Revised Project which considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

It is considered that the Revised Project is likely to have a significant impact on the Koala through the clearing of approximately 21 ha of suitable habitat. Impact avoidance, mitigation and management measures have been applied to the proposal and the impacts to this species will also be offset in accordance with the requirements of the FBA, as documented in the BOS (refer to Appendix J of the ADA Report).

The BAR did not determine that there would be a residual significant impact on Regent Honeyeaters, Swift Parrot or Spotted Quoll (refer to Appendix J of the ADA Report).

In 2019, the NSW Land and Environment Court found that Daracon had been conducting unlawful operations on the site since 2012. This decision does not imbue confidence that Daracon has the either the willingness or capacity to successfully undertake the delicate task of conserving koala habitat within their project area. Regardless, the edge effects of blasting, extraction, processing and freight are likely to negate any efforts to retain a healthy koala population in the area should the application succeed.

As discussed above, a detailed BAR has been completed which assessed impacts to koala habitat and populations.

Daracon acknowledge that relationships within the communities around the quarry have been impacted by the previous quarry operations. Daracon are committed to operating the quarry in accordance with relevant regulatory approvals. Daracon notes that, since 2019, operations have been conducted at the quarry within the parameters of the existing consent as determined by the Court.

The Greens NSW object to this proposal on the basis of strong community opposition and the unacceptable impacts further loss of core koala habitat will have on the remaining local populations.

Noted.

5.5 Dungog Regional Tourism

The proposed expansion to Martins Creek Quarry is of great concern to Dungog Regional Tourism.

The Village of Paterson is a gateway to the Dungog Region, and the impact of 280 truck movements per day on tourist traffic and local businesses is enormous.

We are working very hard to increase and diversify the visitor economy of the region, and a sustainable tourism industry is a cornerstone of this goal. To this end, a Destination Management Plan was prepared by DRT with the support of Council and the industry. It is now being implemented in a staged process.

Our tourism industry is not just weekend visitation. Many people visit the area during the week for week-long breaks and events such as the weddings at Tocal Homestead. Many are now held on week days.

The haul route from Martins Creek to Maitland has three major function centres adjacent to it, and at least six accommodation venues, all of which will be severely impacted by truck movements and noise.

If the quarry is to expand it ought to be only operated to extract material that is moved by rail.

The narrow country roads, which were not designed to carry such traffic volumes, and the lower Paterson Valley, which attracts many tourists, must not be destroyed by quarry trucks.

It is understood that tourism is a key industry sector for Dungog LGA. A response to DSC concerns relating to tourism is provided in **Section 4.12.12**.

An updated TIA was completed for the Revised Project (refer to Section C of the ADA Report). The TIA indicates that while there will be an overall increase in traffic along the primary haul route due to the Revised Project, the proposed annual output of the quarry for which approval is being sought will have an acceptable impact upon the road network that forms the haul route between the New England Highway and the site. The assessment shows that the road has adequate capacity and is currently operating within acceptable guidelines provided by the RTA Guide to Traffic Generating Developments.

Additionally, the TIA found that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the principal intersections along the primary haul route. Whilst the two signalised intersections are predicted to suffer from increasing delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

As outlined in Section 6.3 of the ADA Report, a pavement assessment was undertaken to assess the current condition of the haul route. The Pavement Condition Analysis found that the Maitland roads tend to be in better condition and have stronger pavements as compared to the Dungog LGA. As a result of the modelling, it was predicted that the addition of the extra truck traffic would result in additional road maintenance requirements for the haul routes over the next 25 years (SMEC, 2021).

As outlined above, Daracon have committed to reducing traffic movements associated with the Revised Project in response to community concerns. This has included:

- reduced peak daily laden trucks of 140 per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements). The hourly peak consists of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm
- no road haulage of quarry product on Saturday
- no road haulage between 24 December and 1 January, inclusive
- no trucks through Paterson Village before 6.45 am
- increased quarry product transported by rail
- removal of Haul Route 2 as primary haul route (now proposed only to service local jobs as required).

Daracon have also committed to a number mitigation measures to reduce potential impacts from the Revised Project, including contributing to road maintenance costs associated with truck haulage to enable DSC and MCC to ensure road conditions are appropriately maintained.

5.6 Paterson Historical Society

Shortcomings of the Heritage Impact Statement

The Historical Heritage Impact Assessment Statement (Appendix K) is inadequate and superficial.

It fails to include the intrinsic values of the village's heritage and the value that heritage brings to the local businesses and community. It seems to be a cut and paste from very limited number of sources without seriously engaging with the heritage and history of the village and district.

The Society has an extensive archive of reports and publications on its website

<https://www.patersonhistory.org.au/>. There is no record that any of these readily available sources were used to prepare the report. List is in Appendix 3.

The Society website <https://patersonmuseum.square.site/> has 50 publications listed for sale.

Included in these publications is the Glovebox Guide to the Paterson Valley published in 2014 which demonstrates the value placed upon the heritage of the Village and district. Neither this or any other of the publications from the Society were referenced in the report.

The Society has a dedicated library room with all available references about the Village and district. There is no indication that the authors of this report visited the Museum and library. The Museum is open every Sunday and also by appointment.

The Society was never consulted by the consultants who prepared this report. This is in comparison to other local projects where consultants engage with the Society to assist them to gather all available and relevant information. Paterson Historical Society has worked with two software companies to create app/website-based walking tours of the Village

<https://inspireme.cyaontheroad.com/post/636626774776840192/paterson-town-walk> Promotional bookmark with QR code is in appendix 2

<https://www.goddrivin.com.au/#/trip/au-nsw-hunter-region-paterson---total>

There is no mention of these in the report.

There are errors and omissions in the report such as the listing of Hua Tsa, a historic house in Clarence Town which is 30 kms to the east of the route. Whereas, Sunnyside which is the oldest recorded dwelling in Paterson and just 20 metres from the haulage route is omitted.

The report is padded out with unnecessary information to give the impression of thoroughness. This is demonstrated by the listing of buildings in Maitland well away from the haulage route.

The HIS was prepared in accordance with all relevant guidelines and standards that apply within NSW and assesses quantifiable and assessable direct and indirect impacts associated with the proposed works. It considers the applicable statutory context, all applicable heritage listings, and the specifics of the applicable LEPs. It meets all assessment requirements that apply to the preparation of heritage impact statements in NSW.

Consultation with the Paterson Historical Society, whilst beneficial, is not a requirement under the relevant standards and guidelines for the preparation of heritage impact statements.

Concerns regarding the impacts of increased traffic flow on amenity and use of the 'town square' are not heritage issues and cannot be meaningfully assessed within the context of a heritage report. The SIA has considered amenity impacts associated with the Revised Project.

Sunnyside, while potentially significant to the local community, is not listed by DSC as a heritage item nor is it on State heritage registers.

As outlined in **Section 5.1**, Daracon has committed to contribute \$40,000 per year to a Community Benefits and Wellbeing Fund should the Revised Project be approved. As part of the fund, the Paterson Historical Society and others, may apply for grants to assist in preserving Paterson village's historical value. This may include, but is not limited to, assistance with historical recording, enhancement projects, signage, interpretation studies and research.

Impact of 280 trucks per day on Paterson Historical Society

In 1973 the Paterson community established the Paterson Preservation Society which was renamed as the Paterson Historical Society in 1982.

The Paterson Court House Museum opened in 1974 and has operated continuously since then.

In 1981, the Society held its first historic walk. A small booklet on the walk was published in 1986. Later a colour brochure was produced in collaboration with Paterson Rotary Club. This project included installation of village wayfinding signs in both parks. A copy of the brochure is in appendix1.

The Village has always attracted day trippers who have come to the parks and streetscapes for their beauty and ambience. This is not just on weekends but through the week.

In May/June 2021 the Society hosted four mid-weekday trip groups who visited the Museum and also made use of the parks and/or the various hospitality venues.

The Society works with Vintage Rail Journeys and hosts mid-week visits to the Museum.

In February the Society hosted a group travelling with Australians Studying Abroad, a high-end company. Another midweek tour is planned for 2022.

All these people visit Paterson for its heritage, its ambience and amenity which will be destroyed by these trucks.

The former Rectory is on one side of the narrow street which enters the central part of the Village and Sunnyside – believed to be oldest house in Paterson is on the other side. The impact of the trucks on this narrow curving street and important heritage precinct is not addressed in the report. The impact of the trucks on this narrow curving street and important heritage precinct is not addressed in the report.

Paterson Town Square in front of PO which is an informal meeting place for the community. The impact of past truck movements is evident by the condition of the kerb. The proposed expansion of the quarry will mean part of this public land is alienated and the square will no longer be a pleasant space for people to meet.

As noted above, concerns regarding the impacts of increased traffic flow on amenity and use of the 'town square' are not heritage issues and cannot be meaningfully assessed within the context of a heritage report. The SIA has considered amenity impacts associated with the Revised Project.

As noted above, the report assesses the physical impacts of increased traffic in the form of vibration impacts (as is standard practice within this assessment type) but cannot meaningfully assess impacts to the future use, amenity or social values of Paterson, as these are not directly related to heritage as it is assessed under the current guidelines. Social amenity issues have been discussed in the SIA for the Revised Project (refer to Appendix O of the ADA Report).

In addition, Daracon have committed to planning quarry activities, and revise haulage as required, around days when there is expected to be extra traffic within Paterson, i.e. due to a funeral or pre-arranged significant community events, e.g. Tocal Field days, car show events. Subject to consultation, this may include events focussed on historical theme within Paterson subject.

This purpose designed layby in front of the lagoon as you enter Paterson from Maitland is a popular spot for travellers because of the picnic facilities and local environment. A group of dedicated community members rehabilitated the lagoon as a bicentennial project. When the quarry was operating this location was frequently occupied by trucks. Daracon will say they would ban trucks from stopping in this location. No one apart from concerned locals will police it. The community has no confidence in Daracon's competence in managing the behaviour of trucks hauling from the quarry.

The Code of Conduct will be reviewed regularly with the CCC to ensure any areas of concern are addressed.

Fatigue laws introduced several years ago has led to more frequent stopping along the haul route by all trucks, not just quarry trucks. Daracon will investigate potential options for two (2) stopping bays on the haul route in consultation with DSC, MCC and the CCC. Subject to relevant approvals from DSC or MCC, Daracon will contribute to the establishment of the two (2) additional stopping bays on the haul route.

The other impact of trucks is that they can bank up along King Street and around into Duke Street when the railway gates close. This totally dislocates the Village for lengthy periods.

As discussed in the ADA Report, the Revised Project proposes a peak of 280 trucks per day for 50 days per year only. Road haulage would only occur between 7.00 am and 6.00 pm Monday to Friday with further limits on truck movements between 3.00 and 6.00pm. The addition of quarry trucks is not expected to greatly increase delays at the Paterson level crossing.

Impact of 280 trucks per day through Paterson on business

If this happens it will destroy the amenity of the Village. The consequences will be that businesses which rely upon visitation for hospitality and amenity will be impacted.

These businesses occupy and carefully maintain heritage buildings. They will no longer be able to afford the maintenance of the buildings.

Heritage dwellings impacted by the trucks will drastically fall in value and ultimately become low value housing with occupants who cannot afford to maintain them.

What was a much cared for village and loved neighbourhood will lose its value and the heritage will ultimately be lost.

The Revised Project proposes a peak of 280 trucks per day for 50 days per year only. Road haulage would only occur between 7.00 am and 6.00 pm Monday to Friday.

The quarry has been in operation since 1914 and the heritage value of the area has been intact throughout that period. The HIS concluded that it is unlikely that the Revised Project will result in any adverse visual or physical impacts to the heritage significance of the Paterson HCA or individually listed heritage items.

The implementation of mitigation measures to address traffic impacts are expected to prevent any impacts on heritage values associated with quarry truck movements.

There are a wide range of factors which affect property values including broader regional market trends. In regard to impacts associated with the Revised Project, the assessments have found that in most surrounding areas there will be minimal changes to impacts.

Given the long history of quarrying in the area and predicted impacts, adverse effects on property values are considered unlikely.

The proposed modification to the corner of Duke and King Streets will unnecessarily change an important layout element of the village dating from 1833. This is part of the village's town square where people meet and chat while going about their business. This amenity will be destroyed.

The road safety review along the length of the major haulage route undertaken as part of the TIA identified safety concerns with the existing layout of the King Street and Duke Street intersection. In addition, during community engagement several concerns were raised around the safety of this intersection. Whilst this is an existing road safety issue due to non-compliance with current Austroads Guidelines design standards, Daracon has committed to upgrade this intersection as part of the Revised Project to alleviate the existing road safety issues.

Extensive consultation has been undertaken since the exhibition of the EIS for the Original Project in relation to the King and Duke Street intersection in Paterson. Potential viable options for the intersection have been discussed with DSC, in addition to extensive community engagement via the CAFs to assist with identifying a preferred design option for this intersection.

Daracon considered alternative design options for the proposed upgrade of King and Duke Street intersection in Paterson. This included Daracon's initially preferred option with the following:

- Physical separation by means of raised median to provide physical guidance for vehicles to reinforce traffic manoeuvre around the bend and traffic island on King Street.
- Pedestrian crossing on King Street, providing pedestrian linkage at the intersection.
- Off street parking lot with ten additional parking spaces, on Lot 3 DP 758830.

Based on community feedback, the proposed intersection upgrades include:

- relocation of the existing driveway on the north side of the intersection slightly west to improve the space allocation for parking on either side of the driveway and improve carparking capacity along this northern kerb line

- relocate existing direction and hazard signage on northern side of intersection
- refresh the dividing line marking through the intersection
- minor realignment of the footpath, kerb ramp and kerb & gutter on the south-western corner of the intersection to accommodate the design vehicle turn path
- relocate existing 'No Stopping' sign in front of Telstra phone box to power pole adjacent to Post Office driveway, remove existing single carparking space to accommodate design vehicle turn path.

The proposed upgrade at the King Street and Duke Street intersection in Paterson will ensure that all vehicles drive on the correct side of the road and do not cross over the centre line. The upgrade allows for a refresh of the dividing line marking through the intersection to delineate and separate opposing traffic movements with no loss to any car parking spaces.

The minor realignment of the footpath, kerb ramp and kerb & gutter on the south-western corner of the intersection will not destroy the amenity or use of Paterson village.

Death by a thousand cuts

The Society is very fearful that if these trucks are approved to travel through the Village, even with conditions, there will be incremental amendments to the approval meaning that hours will be extended, and weekend haulage will become regular.

It will be death by a thousand cuts.

Governments are spending millions to bypass country towns, create expressways and tunnels in cities. It seems illogical to contemplate putting all these trucks onto the road through Paterson when the quarry is on a railway line.

Daracon have no current plans for future modifications.

Following detailed analysis of Agency and community feedback on the EIS and subsequent stakeholder engagement, Daracon committed to a number of key project design changes and additional mitigation and management measures to minimise the project's environmental and social amenity impacts. This included reductions in proposed extraction limits, changes to quarry operating hours, reduced road transportation volumes, increased rail transportation and a reduced disturbance area. Daracon maintain those commitments and propose to operate the quarry in accordance with those commitments, should approval be granted.

Daracon has committed to exploring opportunities to increase rail transportation from the quarry in the future. This will be subject to market demand and access to the Main Northern railway line.

Any potential future modifications would be subject to the relevant NSW approval processes which would include opportunities for community involvement.

5.7 BirdLife Australia

The Biodiversity Assessment Report prepared by Conacher Consulting very clearly states in Appendix 4 page 41:

It has been identified through the EPBC Act referral process that the proposed development is likely to significantly impact the following EPBC Act (1999) listed threatened fauna species:

- Koala (*Phascolarctos cinereus*) combined populations of Qld, NSW and the ACT – Vulnerable;
- Regent Honeyeater (*Anthochaera phrygia*) – Critically Endangered;
- Swift Parrot (*Lathamus discolor*) – Critically Endangered; and
- Spot-tailed Quoll (*Dasyurus maculatus maculatus*) SE mainland population – Endangered

The surveys carried out to prepare this report may not have identified Regent Honeyeaters and Swift Parrots on the particular days the surveys occurred, however there is little doubt that both birds utilise these woodlands. Sightings of Swift Parrots in Martins Creek have been registered on Birddata and as recently as 2020 on ebird just 20kms away. Regent Honeyeaters have been sighted by a number of observers on different occasions in 2018, just 15 kms away. It is simply because the number of these birds has declined alarmingly that usage will only be sporadic. Both species are nomadic, moving widely through the landscape in search of food. Their status as Critically Endangered under the EPBC Act means that no action should be approved which is likely to cause any further decline. If Swift Parrot and Regent Honeyeater numbers can be increased these woodlands will likely continue to be utilised for the survival of these birds in the future, and on a more regular basis.

Great efforts continue to be made by a number of organisations to expand the population of Regent Honeyeaters into the lower Hunter region. Taking away almost 30 hectares of suitable habitat will in the long term hamper the effort to increase the population of these birds – this makes no sense.

There are also a number of other threatened and vulnerable woodland birds that utilise the area in question, as identified by the Biodiversity Assessment Report prepared by Conacher Consulting. We should not wait until they become endangered or critically endangered before we start thinking about them and taking their plight into consideration. We should be protecting their habitat now, so they are not moved from vulnerable and threatened status to endangered, critically endangered or extinct status.

In addition, these woodlands provide a vital ‘stepping stone’ to allow the movement of woodland birds within the Hunter Valley, and to and from those areas to the north and south. Woodlands, such as those in and adjacent to the MCQP, provide a ‘stepping stone’ between the Barrington Tops Key Biodiversity Area and the Lower Hunter Valley and Hunter Estuary Key Biodiversity Areas. Key Biodiversity Area (KBA) status is an international designation for the most important environmental areas which need to be conserved. This status is not awarded lightly and reflects the importance of the region for birdlife. Without these ‘stepping stone’ and refuge areas, birds will become isolated and bird numbers will continue to fall.

Genetic diversity will also suffer, reducing bird numbers even further. Although this submission, and the HBOC submission, is focused on the plight of birdlife, the whole woodland ecosystem is important and a number of other flora and fauna species are at risk of becoming extinct, as has been identified.

In 2020 the NSW parliamentary inquiry found that the Koala will become extinct in NSW before 2050 unless there is urgent government intervention to prevent habitat loss, which the inquiry found is the biggest threat to the survival of the species. The EPBC Referral document prepared by Conacher Consulting, which identifies that the project will require removal of more than 20 hectares of Koala habitat, predates the increased concern about Koala survival since the 2019-20 bushfires. This is an additional compelling reason for objection to the proposal.

The BAR has been completed for the Revised Project in accordance with the FBA.

With regard to Daracon's approach to the design and planning of the Revised Project potential biodiversity impacts have been recognised and thoroughly considered throughout the project planning process considering the principles of avoid, mitigate and offset.

Daracon has redesigned the quarry plan for the Revised Project by committing to no quarrying in the previously proposed East Pit, resulting in a reduction of the quarry disturbance footprint of 16.8 ha, which includes avoiding the clearance of 15.3 ha of native vegetation within Lot 21 DP 773220.

Whilst Daracon has strived to minimise impacts on biodiversity through the design process, not all impact could be avoided by the proposed design and a detailed assessment of the impacts was undertaken of the Revised Project. The Revised Project will require the disturbance of approximately 21 ha of native vegetation from within the 127 ha of the Project Area.

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project.

Furthermore, rehabilitation will focus on promoting the rural landscape by establishing native grassland or exotic pastures in low lying areas whilst focusing on the re-introduction of pockets of woodland species across the benches consistent with endemic vegetation types. The objectives of this rehabilitation are to return a stable, natural looking landform and sustainable vegetation communities that are consistent with and enhance the surrounding landscape.

5.8 Hunters Bird Observers Club

Land clearing and ensuing habitat destruction has been identified as the main driver for animal extinction in Australia. Land clearing in NSW continues unabated despite evidence-based reports of species being added to the threatened species lists:

In the Hunter Region alone, 90 species of birds are classified as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* and/or the *NSW Biodiversity Conservation Act 2016* (Roderick and Stuart 2016). Of these 44 species are woodland birds.

HBOC thinks that:

the surveys for avifauna were carried out in 2014 and 2015 and were inadequate to detect already rare threatened species in such a fragmented landscape. Long-term surveys are required to establish presence or absence of threatened species especially in woodlands.

The dates and times of all fauna surveys completed are listed in Appendix J of the ADA Report. The targeted surveys completed for candidate 'species credit' threatened fauna were undertaken in accordance with the following survey guidelines:

- Field Survey methods – Field survey methods for environmental consultants and surveyors when assessing proposed development or their activities on site containing threatened species (NSW DEC 2004a)
- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (NSW DEC 2004b)
- Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (NSW DECC 2009).

While surveys for the Original Project were primarily completed in 2014 to 2015, additional targeted surveys were undertaken during the period of 2019 to 2021 which included opportunistic surveys.

The Assessment of Significance stated for 21 woodland species:

“It is considered that suitable habitat for this species is present on the subject site, however this species was not observed within the subject site during surveys. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction”.

- **the fact that suitable habitat for threatened species is present should be sufficient to retain the habitat, not clear it. Clearing this land will further fragment remaining forest leading to detrimental effects e.g. increased edges providing avenues for weeds and pest species e.g. Noisy Miner.**
- **the proposed development site sits in a landscape already largely cleared makes this forested area even more significant in terms of providing refuge for extant species and the opportunity for further recruitment.**
- **hollow-bearing trees are crucial in the life cycle of nocturnal species. Clearing them is to clear out those dependent species.**
- **offsetting strategies such as the system of trading credits may not protect threatened species.**
- **land clearance and deforestation are activities exacerbating climate change.**

The BAR has been completed for the Revised Project in accordance with the FBA.

With regard to Daracon’s approach to the design and planning of the Revised Project potential biodiversity impacts have been recognised and thoroughly considered throughout the project planning process considering the principles of avoid, mitigate and offset.

Daracon has redesigned the quarry plan for the Revised Project by committing to no quarrying in the previously proposed East Pit, resulting in a reduction of the quarry disturbance footprint of 16.8 ha, which includes avoiding the clearance of 15.3 ha of native vegetation within Lot 21 DP 773220.

Whilst Daracon has strived to minimise impacts on biodiversity through the design process, not all impact could be avoided by the proposed design and a detailed assessment of the impacts was undertaken of the Revised Project. The Revised Project will require the disturbance of approximately 21 ha of native vegetation from within the 127 ha of the Project Area.

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project.

Furthermore, rehabilitation will focus on promoting the rural landscape by establishing native grassland or exotic pastures in low lying areas whilst focusing on the re-introduction of pockets of woodland species across the benches consistent with endemic vegetation types. The objectives of this rehabilitation are to return a stable, natural looking landform and sustainable vegetation communities that are consistent with and enhance the surrounding landscape.

5.9 Birding NSW

Birding NSW thinks that:

- the surveys for avifauna were carried out in 2014 and 2015 and were inadequate to detect already rare threatened species in such a fragmented landscape. Long-term surveys are required to establish presence or absence of threatened species especially in woodlands.
- the fact that suitable habitat for threatened species is present should be sufficient to retain the habitat; not clear it. Clearing this land will further fragment remaining forest leading to detrimental effects.
- the proposed development site sits in a landscape already largely cleared making this forested area even more significant in terms of providing refuge for extant species and the opportunity for further recruitment.
- hollow-bearing trees are crucial in the life cycle of nocturnal species. Clearing them is to clear out those dependent species.
- offsetting strategies such as the system of trading credits may not protect threatened species. The idea of offsets does not and cannot work. Bush that has taken millions of years to develop cannot be replaced.
- land clearance and deforestation are activities exacerbating climate change.

The submission received from Birding NSW is largely the same as the Hunter Bird Observers Club.

Refer to the responses in **Section 5.8**.

5.10 Koala Koalition EcoNetwork Port Stephens

All members are very aware of the decline of koala populations and threats to those remaining across Port Stephens. This extremely high risk of extinction was made abundantly clear in the NSW Parliamentary Enquiry into Koala Populations and their Habitat released in June 2020 after a year-long Inquiry. "It must be a gamechanger for the government to protect more koala habitat if they don't want to see the koala become extinct before 2050, said Committee Chair and Greens MP Cate Faehrmann." PC7 - Koala populations and habitat - Report 3 - 30 June 2020.pdf (nsw.gov.au).

Furthermore, we object on the basis that continuing destruction of habitat currently occupied by koalas. We have only just completed a submission to the Federal Government to uplist koalas in NSW from merely Vulnerable to Endangered. The koala is under much more threat since so many thousands died in the Black Summer Fires. Every small breeding population is now vital to be conserved if they are to survive in the wild.

A detailed BAR was prepared for the Revised Project which considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

It is considered that the Revised Project is likely to have a significant impact on the Koala through the clearing of approximately 21 ha of suitable habitat. Impact avoidance, mitigation and management measures have been applied to the proposal and the impacts to this species will also be offset in accordance with the requirements of the FBA, as documented in the BOS (refer to Appendix J of the ADA Report).

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS, included in Appendix J of the ADA Report, has been prepared in accordance with the Stage 3 requirements of the FBA (NSW OEH 2014a), the Biobanking Assessment Methodology (BAM) (NSW OEH 2014b) and the NSW Biodiversity Offsets Policy for Major Projects (NSW OEH 2014c). The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

The EIS by Monteath and Powys clearly shows that wildlife corridors will be removed by the quarry expansion on figures 36 and 37 (pp 155-6) and that 51 hectares of habitat will be cleared.

The Biodiversity report by Conacher Consulting Pty Ltd records that koalas have been consistently found on the site and recorded from 2007 – 2020 (p99). It also records that suitable koala habitat containing koala preferred food trees “The Project Area is located within the Central Coast Koala Management Area (KMA) and the Barrington Area of Regional Koala Significance, identified in the Koala Habitat Information Base (NSW DPIE 2019).” (p. 100). “..the site is also likely to contain Core Koala Habitat as a resident population of the Koala is considered to be present, as evidenced by recent sightings and historical records of a Koala population (refer to Figure 4.8). While the requirements of this SEPP do not apply, as the proposal is a State Significant Development Application, should the project be approved, it is recommended that a Management Plan be prepared to provide measures for the management of Koalas on site, in keeping with the intent of the SEPP”.

Daracon commits to the preparation of a Koala Plan of Management, or equivalent, for the quarry in accordance with the *State Environmental Planning Policy (Koala Habitat Protection) 2020*. An updated statement of commitments is provided in **Appendix 2**.

It seems that the koala polygon overlaps the phascogale polygon and that these species are also present and will be impacted:

Little Lorikeet (*Glossopsitta pusilla*); • Speckled Warbler (*Pyrrholaemus sagittatus*); • Varied Sittella (*Daphoenositta chrysoptera*); • Powerful Owl (*Ninox strenua*); • Squirrel Glider (*Petaurus norfolkensis*); • Grey-headed Flying-fox (*Pteropus poliocephalus*); • Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*); • Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*); • Little Bent-winged Bat (*Miniopterus australis*); • Large Bent-winged Bat (*Miniopterus orianae oceanensis*); • Greater Broad-nosed Bat (*Scoteanax rueppellii*); and • Southern Myotis (*Myotis macropus*).

The koala occupancy polygon of 21.1 hectares should be conserved and not included in the extension of the quarry plans. A management plan must be prepared and threats mitigated for the entire site.

Daracon's approach to the design and planning of the Revised Project has considered potential biodiversity impacts. Whilst Daracon has strived to minimise impacts on biodiversity through the design process, not all impact could be avoided by the proposed design and a detailed assessment of the impacts was undertaken of the Revised Project.

A comprehensive BAR was completed for the Revised Project in accordance with the SEARs, the FBA and to provide additional information requested in the government agency submissions and to provide an updated assessment of the revised project parameters. A summary of the key findings of the BAR is provided in Section 6.10 of the ADA Report.

Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act.

Daracon has committed to the preparation of a Biodiversity and Rehabilitation Management Plan (BRMP) as part of the implementation of the Revised Project, in accordance with the requirements of BAM (NSW OEH 2016). The BRMP will include management actions and activities proposed for the biodiversity offset sites as identified in the BOS.

The Biodiversity Report relies on Steve Phillips Site Assessment Technique (SAT) to conclude that koala activity is low (p.100) but Witt_2020 "Real-time drone derived thermal imagery outperforms traditional survey methods for an arboreal forest mammal" argues that Drones are much more efficient and reliable than spotlighting and SAT. In fact, SAT rated the least reliable method. The most reliable method is scat sniffing dogs and DNA investigations to scientifically conclude how many koalas are there. [https://www.wwf.org.au/ArticleDocuments/353/pub-study-port-stephens koala-population-18Jan21.pdf.aspx](https://www.wwf.org.au/ArticleDocuments/353/pub-study-port-stephens%20koala-population-18Jan21.pdf.aspx) This report identifies and there is a limited gene flow of koalas in Port Stephens due to living in isolated patches of habitat. In order to preserve allelic richness, corridors are essential.

Koala and other threatened species' sightings by local residents seem to have been ignored by the expert that is used by the proponent. We find it very concerning that Steve Phillips (Biolink) seems to be the only expert used by every developer, government and council. His reports always conclude that while koalas have been passing through the "low activity" site, that they are not breeding there and that it won't hurt to destroy that piece of habitat where koalas are clearly living (and feeding and breeding as they pass through) as it will be yet another insignificant impact. These continued impacts though do have a significant cumulative effect on the local koala populations that are understandably smaller in lower quality habitat suffering the effects of drought.

This is exactly happened with Sussan Ley's consideration of his "independent" report on Brandy Hill even though there was photographic proof of hundreds of sightings from local residents, they were ignored. So was the truly independent report compiled by Ryan Witt et al from the University of Newcastle. It is extremely rare to spot koalas in the wild actually breeding, especially considering the investigations by researchers are done so spasmodically. There is no evidence left behind of the act, apart from the clear evidence that there is a continuing population and sightings/photos of juveniles and mothers with back young.

The Port Stephens community is very passionate and outspoken about the environment. With another mine being proposed in Limeburners Creek to the east of Clarence Town, it is imperative that these mine extensions are not looked at in isolation, but in consideration of what else is happening around them in the local area. The NSW State Government must realise that destruction of koala habitat is inconsistent with saving koalas in the wild.

Under the NSW State Government's (weakened) biodiversity and conservation laws that were implemented in late 2017, it has been estimated that land clearing has jumped by a staggering 1,300 per cent, according to the Natural Resources Commission (NRC) report released in April 2020. If this continues Koalas and many other species WILL be extinct as a direct result.

Every development/expansion decision like this is part of a cumulative effect - either a nail in the coffin or an opportunity to ensure the survival of our wildlife.

As stated above, the BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

It is considered that the Revised Project is likely to have a significant impact on the Koala through the clearing of approximately 21 ha of suitable habitat. Impact avoidance, mitigation and management measures have been applied to the proposal and the impacts to this species will also be offset in accordance with the requirements of the FBA, as documented in the BOS (refer to Appendix J of the ADA Report).

We stand by local residents represented by MCQAG (<http://www.mcqag.org>) who will be impacted:

“if approved the hourly and daily scale of trucking operations proposed from the site will see a return of the trucking madness residents experienced between 2007 and 2019. Daracon and Umwelt are continuing to flagrantly ignore the amenity and social impacts that (if approved) will be imposed on residents who live adjacent to the site (from blasting, dust and industrial noise) and on residents whose villages and residential streets will be turned in to Daracon mining haul roads.”

The SIA predicted that key potential negative social impacts associated with the Revised Project include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts.

The detailed impact assessment undertaken for the Revised Project concludes that with the implementation of feasible and reasonable mitigation measures, the Revised Project can proceed within acceptable environmental standards. This is largely driven by the project design changes outlined in Section 1.6 of the ADA Report, in particular the reduced extraction limits and the revised operational hours and truck movements.

Given Daracon’s approach of reviewing the Revised Project design to minimise impacts, the potential social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

We are concerned that Daracon has been found to be acting illegally on that site already by extracting far more than their licence permits: <https://www.newcastleherald.com.au/story/6402560/daracon-shuts-martins-creek-quarry-amid-consent-stoush-after-court>.

This imbues little confidence that they will abide by any restrictions imposed on them, including the tonnage, hours of operation, or having wildlife spotters on site during clearing. Daracon’s clearly bad performance and the Land and Environment Court’s decision and Dungog Council’s stance should be taken into account as part of this decision process.

Daracon will be required to comply with the terms of any development consent granted for the Revised Project, including any commitments relating to tonnage, hours of operation, or having wildlife spotters on site during clearing.

All activities subject to the development consent, or associated documentation, will be independently audited.

Daracon will also be required to complete an Annual Review each year which will review the environmental performance of the development. Among other things, the Annual Review will include:

- a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year
- identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.

All reporting required by the development consent will be made publicly available on the quarry website.

5.11 Save Port Stephens Koalas

Of great concern are the impacts to native wildlife, particularly the resident koala populations on site. Residents have documented evidence of an active local population of koalas and other threatened species.

The Biodiversity Assessment Report prepared by Conacher Consulting Pty Ltd in May 2021 indicates that a number of threatened species will be ‘significantly impacted’, including koalas, Regent Honeyeaters, Swift Parrots and Spotted tailed Quolls. The site area is within the Barrington Area of Regional Koala Significance and koalas have been detected within the project area by several different environmental consultants’ assessments since 2007. The report states: “the site is also likely to contain Core Koala Habitat as a resident population of the Koala is considered to be present, as evidenced by recent sightings and historical records of a Koala population”.

Last year, an NSW Upper House Inquiry found that, without urgent government intervention, koalas would be extinct by 2050 and “fragmentation and loss of habitat poses the most serious threat to koala populations in New South Wales”.

The core koala habitat at Brandy Hill Quarry has already been flagged for destruction. The Martin’s Creek Quarry expansion proposes a further unacceptable loss and degradation of core koala habitat. These are koala populations that have already suffered the devastating effects of drought, bushfires and land clearing. Enough is enough.

In 2019, the NSW Land and Environment Court found that Daracon had been conducting unlawful operations on the site since 2012. This decision does not imbue confidence that Daracon has the capacity to successfully undertake the delicate task of conserving koala habitat within their project area. Regardless, the edge effects of blasting, extraction, processing and freight are likely to negate any efforts to retain a healthy koala population in the area should the application succeed.

“Save Port Stephens Koalas” object to this proposal based on strong community opposition and the unacceptable impacts that further loss of core koala habitat will have on the remaining local populations. Our local koala population simply cannot sustain any further habitat destruction.

A detailed BAR was prepared for the Revised Project which considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA.

It is considered that the Revised Project is likely to have a significant impact on the Koala through the clearing of approximately 21 ha of suitable habitat. Impact avoidance, mitigation and management measures have been applied to the proposal and the impacts to this species will also be offset in accordance with the requirements of the FBA, as documented in the BOS (refer to Appendix J of the ADA Report).

The BAR did not indicate that there would be a residual significant impact on Regent Honeyeaters, Swift Parrot or Spotted Quoll (refer to Appendix J of the ADA Report).

Daracon will be required to comply with the terms of any development consent granted for the Revised Project, including any commitments relating to biodiversity management and mitigation.

5.12 Bolwarra Uniting Church

I'm writing this submission on behalf of the Bolwarra Uniting Church and the congregation as a whole, some of who live on Paterson Road and can remember the last time that these trucks and dogs travelled these roads.

This project doesn't impact on the Church use during the weekend but will severely do so if we have anything on at the church such as a funeral or with other groups using these facilities. It is hard enough now trying to turn in to side streets along Paterson Road or coming out of private residential driveways.

If this project goes ahead it will make it near an impossibility to safely get across any of these road intersections, particularly now with new areas popping up such as Hunter Glen at Bolwarra Heights these poor residents sit there now waiting for a safe gap to move, it will be near impossible to move if this project as it stands gets up and running.

We also have some congregation that have families that have school aged children who travel by buses which constantly stop along this already busy road with them getting on and off and trying to cross this busy road. This is a recipe for disaster for not only the children but the constantly stopping of buses and this main road is not that wide for any heavy truck and dog to safely pass whichever direction they heading, without impacting on the vehicles travelling the opposite direction. Add to the mix that the Maitland Council wish to build a safety island around the intersection of Paterson Road and Victoria Street Bolwarra, this will make that area more dangerous for normal vehicles let alone having to put up with 40+ heavy trucks and dogs every hour. Add to this the constant noise, vibrations to peoples homes close to this main road as well as the dust and rocks coming off these trucks, whether they are loaded or not and these trucks will not be doing just 60kph either truck and dogs now are regularly travelling way above the speed limit and harassing drivers, which has happened to me when I have been driving along the Paterson road to Tocal and Paterson. Then there is the chaos that will happen when they intersect Flat Road with Melbourne Street and then onto New England Highway.

A key objective of the Revised Project has been to reduce traffic and transport related impacts associated with the operation of the quarry to further address concerns from the community and government agencies. This has included:

- reduction in tonnes transported by road to 500,000 tpa
- reduction in peak trucks per hour to:
 - 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
 - 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm
- road haulage of quarry product to occur 7.00 am to 6.00 pm Monday to Friday, with no haulage of product on Saturday, Sunday or public holidays
- no trucks through Paterson prior to 6.45 am Monday to Friday.

As acknowledged by Bolwarra Uniting Church, there will be no haulage on weekends which will limit impacts to weekend church activities. Daracon has also committed to a range of traffic controls to be implemented including the planning of quarry activities, and revise haulage as required, around days when there is extra traffic in the Paterson area such as that resulting from a funeral. Bolwarra Uniting Church can consult with Daracon in the event of such activities to attempt to minimise interactions in the event of funerals or with other significant groups using the facilities.

In addition, Daracon committed to a range of traffic controls to be implemented specifically in the village of Paterson, including reinforcing the truck speed limit of 40km/hr through Paterson and include a requirement in the Driver Code of Conduct for a speed limit of 20 to 25 km/hr at the King and Duke Street intersection in Paterson.

6.0 Response to Community Submissions

As outlined in **Section 2.0**, a total of 639 individual community submissions were received relating to the Revised Project. A response to the issues raised in these submissions is included in the following sections grouped by theme.

Several of the community submissions received were similar or had consistent themes. Where this is the case, the theme of the concern has been provided in bold in the text boxes below with some examples of specific quotes from the submissions provided in normal type to assist the reader. Specific issues, that is, where an issue was raised only once have also been addressed.

6.1 Economic, Environment and Social Impacts of the Revised Project

6.1.1 Traffic and Transport

Issues relating to traffic and transport were raised in 576 community submissions. Comments relating to the number of truck movements are addressed as part of the project design for the Revised Project (refer to **Section 6.2**).

Adequacy of road network

The local roads are not built to handle the increase in heavy vehicle traffic that this proposal will result in. S-21527552

The road-network on the proposed route is barely sufficient for the traffic using it now, and the proposed number of truck movements into this mix will exacerbate traffic bottlenecks and delays that are currently experienced, and compromise road safety along that route, including major wear and tear on the road pavement. S-23136376

We do not have the roads or infrastructure to carry that sort of tonnage. S-25047181

200 to 280 extra truck movements per day, on our already congested roads CANNOT HAPPEN. S-23448456

I strongly object to the intrusion onto our road network which will impede the comfort and quite nature of our community. It is a recently developed heavily populated area and increased volumes of traffic create a serious hazard with these large vehicles. The road infrastructure will not support. S-22721984

What the quarry is proposing is essentially commandeering community roads for a major commercial use in order to meet the economic targets of a private business. S-23190021

It will adversely affect many residents along the route, especially in the narrow, winding streets of Paterson, Bolwarra Heights, Lorn and East Maitland. S-23195579

Daracon recognise that traffic and transport issues are of key concern to the community, in particular with regards to the volume of truck movements, transportation hours, and road capacity. Consequently, Daracon have undertaken a thorough review of the Original Project to redesign key operational parameters in order to reduce environmental and social amenity impacts, in particular in relation to traffic and transport.

In response to community concern, Daracon have committed to the following revised operational parameters as part of the redesign of the conceptual quarry plan for the Revised Project:

- reduction in tonnes transported by road to 500,000 tpa
- reduction in peak trucks per hour to:
 - o 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
 - o 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm
- road haulage of quarry product to occur 7.00 am to 6.00 pm Monday to Friday, with no haulage of quarry product on Saturday, Sunday, public holidays or between 24 December and 1 January
- no trucks through Paterson prior to 6.45 am Monday to Friday
- removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required).

An updated TIA was completed for the Revised Project (refer to Section C of the ADA Report). The TIA indicates that while there will be an overall increase in traffic along the primary haul route due to the Revised Project, the proposed annual output of the quarry for which approval is being sought will have an acceptable impact upon the road network that forms the haul route between the New England Highway and the site. The assessment shows that the road has adequate capacity and is currently operating within acceptable guidelines provided by the RTA Guide to Traffic Generating Developments.

Additionally, the TIA found that the traffic movements associated with the Revised Project will have an acceptable impact upon the overall operation of the principal intersections along the primary haul route. Whilst the two signalised intersections are predicted to suffer from increasing delays, this would be due to the continual traffic growth along the New England Highway in this location rather than a direct impact of the Revised Project.

Quarry traffic causing road damage

Our roads are in disrepair due to a lack of funding by our local government, and these heavy loads only make it worse and cause further potholes and destruction of our roads. S-23716713

Past operations out of the Martins creek quarry demonstrated the local roads could not handle the quantity of heavy vehicle traffic causing large potholes and diverts in the roads. S-23408221

There are already potholes everywhere the road network cannot sustain what they are proposing. S-21330708

Submissions indicate that existing pavement condition surrounding the quarry, including haul routes, is of concern to the local community and that the proposed road haulage is likely to deteriorate the road surface further.

As outlined in Section 6.3 of the ADA Report, a pavement assessment was undertaken to assess the current condition of the haul route. The Pavement Condition Analysis found that the Maitland roads tend to be in better condition and have stronger pavements as compared to the Dungog LGA. As a result of the modelling, it was predicted that the addition of the extra truck traffic would result in additional road maintenance requirements for the haul routes over the next 25 years (SMEC, 2021).

As outlined above, Daracon have committed to reducing traffic movements associated with the Revised Project in response to community concerns. Daracon have also committed to a number mitigation measures to reduce potential impacts from the Revised Project, including contributing to road maintenance costs associated with truck haulage to enable DSC and MCC to ensure road conditions are appropriately maintained.

Quarry traffic causing damage to residences and/or vehicles

During peak periods of the quarry operation, truck movements along Paterson Road caused damage to our vehicles from speeding trucks through new resurfaced roads. S-23028508

I myself have had so many broken windscreens that I have given up having them repaired because I know there will be another repair within a few months. This constant expenditure on the part of residents and visitors to Paterson are never borne by Daracon, and the company seems to have no interest in addressing the problems of uncovered loads due to expense. S-23053000.

Trucks coming from the Quarry would not have covers on their load and would break windscreens with debris and stones flying off the loads. S-23716713

An assessment of truck movements on heritage buildings was undertaken in the Paterson HCA (refer to Section 6.11.3.3 of the ADA Report). The assessment indicated that vibration impacts generally only arise when a heavy vehicle hits a pothole, speed bump or other irregularity at speed and the energy from the impact is then transferred through the ground to adjoining buildings.

The NSW Department of Environment and Conservation 2006 Guideline “Assessing Vibration: a technical guideline” (Vibration Guidelines) includes guidance for the assessment of vibration impacts. It includes the following observation:

The most severe vibrations associated with road traffic result from heavy vehicles with stiff suspensions moving rapidly along roads with irregular surfaces.

The proposed haulage route is already host to heavy vehicle traffic associated with the existing quarry operations, as well as general non-quarry related heavy vehicle traffic.

In response to community and government concerns, Daracon has committed to project changes to reduce the predicted impacts associated with product transportation from the Revised Project, including the reduction of road transportation (refer to **Section 1.1**). Revised product transport arrangements for the Revised Project, include:

- reduced peak daily laden trucks of 140 per day (280 movements) for 50 days per year, otherwise 100 per day (200 movements) with a peak of:
 - o 20 loaded vehicles per hour (40 movements) between 7.00 am and 3.00 pm
 - o 15 loaded vehicles per hour (30 movements) between 3.00 pm and 6.00 pm
- no trucks through Paterson Village before 6.45 am
- increased quarry product transported by rail
- removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required).

Daracon have committed to a number mitigation measures to reduce potential impacts from the Revised Project, including contributing to road maintenance costs associated with truck haulage to enable DSC and MCC to ensure road conditions are appropriately maintained.

Daracon has also committed to:

- insertion of a requirement in the Driver Code of Conduct to report any substantial road pavement irregularities in Paterson, with these reports being passed on the DSC for attention
- directions to be given to drivers alerting them of any identified road irregularities to enable them to minimise speeds where these occur when driving through Paterson.

In addition, all trucks entering and leaving the quarry that are carrying loads will be covered at all times, except during loading and unloading. Daracon will install a camera at the weighbridge to ensure that loads are covered.

6.1.2 Public Health and Safety

Issues relating to public health and safety were raised in 456 community submissions.

Public safety associated with product transportation

Increased truck movements will increase the danger and risk of accidents. S-24907184

The increased volume of trucks poses a risk to every school child catching a bus, every day! S-24401462

It will be only a matter of time before there is a fatality if this amount of trucks are allowed to travel our country roads. S-25008273

This community has many children walking or riding bicycles to school, the increased number of trucks that this expansion will bring poses a major risk of accident to children in our community... it is already difficult for residents of streets off Paterson Rd to turn onto Paterson Road, near misses occur frequently. With the increase in number of trucks per hour taking the proposed route will exacerbate the traffic congestion issues ultimately resulting in accidents, injury and potentially fatalities. S-21236148

The danger to the residence trying to access their properties and the school students attending Bolwarra Public School, is blatantly obvious. Try getting out of your driveway with an eighteen wheel truck passing every 90 seconds. S-23079959

I have real fears for the safety of myself, my family, my friends and any human being in the area. Elderly or infirm people, of which we have many, trying to cross the road during a break in traffic are at serious risk, as are children, and , in reality, all others. S-25047544

Concerns with regards to public safety and the ability to move safely around the community was a key issue of concern. These concerns stemmed from the movement of trucks through the rural community, Paterson village or other urban areas and the potential for interactions with pedestrians, cyclists and drivers due to the number of trucks, the speed of trucks and unsuitability of the haul route roads for truck traffic. It was also linked to the narrowness of the roads and limited pedestrian pathways within Paterson that were close to roads and were used by both residents and visitors the village. Concerns were also raised for public safety along the haul route roads, particularly leading into and out of Bolwarra.

As outlined in the TIA for the Revised Project (refer to Appendix C of the ADA Report), the Revised Project is not expected to have any adverse impacts on the safety of the road network or other road users. The key intersections are predicted to continue to operate at current capacity with the implementation of the Revised Project.

A component of the comprehensive TIA was a review of accident data provided by TfNSW for the full length of the haul route over the 5 year period between July 2013 and June 2018, which provides details on the accident types as well as the type of vehicles involved. The review determined that since Daracon commenced operating the quarry in December 2012, there have been no serious incidents recorded and/or reported to Daracon along this route nor the other historical main haulage route historically associated with trucks working for the quarry suggesting that the incidence of heavy vehicle traffic accidents is not high.

In light of noted concerns regarding the safety of existing school bus routes and possible interactions between buses and heavy vehicles, a review of local school bus services and routes has also been undertaken (refer to Appendix O of the ADA Report). There are a number of primary schools in the local area including Paterson Public School, Martins Creek Primary School, Vacy Public School and Bolwarra Public School which all use local bus services with secondary aged school students typically travelling further afield to high schools within the Maitland LGA and even as far as Newcastle.

There are three main school bus service operators with routes that include the proposed quarry haulage route with Hunter Valley Buses, Linq Bus Lines and Grace Coaches all having a number of pickup and drop-off points for their school buses that are along the Revised Project's haulage route. There are a high number of informal school bus stops along the haulage route which are generally agreed between bus operators and parents, and are not sign posted or developed as formal bus stops.

Discussions with the above local bus companies undertaken during to support the preparation of the SIA have revealed that to date there have not been any incidents with trucks or near misses reported. However, a number of suggestions were made during these discussions with regards to possible improvements in the ways in which buses and trucks current share the roads including:

- the intersection where buses turn onto Tocal road from Wesley Road is narrow, and buses require a lot of road space to make the turn
- sections of Tocal Road are narrow, with limited space for buses to pull over onto the side of the road
- occasionally, due to limited space for parents and bus drivers to pull over, children need to cross Tocal road from where their parents stop to get to the bus
- buses that meet trucks at the Gostwyck Bridge have had to give way.

The TIA indicates that the Revised Project is not expected to adversely impact on public transport, or the safety of pedestrians and cyclists using the primary haul route and is not anticipated to have any adverse impact on the structure of the Gostwyck Bridge due to the proposed number of truck movements over the bridge.

Road improvement works or contributions to road works are proposed as part of the Revised Project to alleviate existing road safety concerns and improve traffic flow. These will be designed in consultation with the relevant road authorities and in accordance with Austroads Guidelines. The proposed road works (detailed in Section 2.8.2 of the ADA Report) will provide the following benefits to be experienced with the Revised Project:

- New main site access – a new access to the quarry on Dungog Road will remove all quarry related trucks from Station Street and Grace Street and the existing access will only be used by light vehicles in an emergency event.
- Gresford/Dungog Road intersection – will provide a sheltered right turn lane on Gresford Road to improve road safety, by reducing or eliminating the potential for rear end type accidents. The upgrade will direct all through traffic to steer to the left of any vehicle waiting to turn right at this location. This upgrade is in line with RMS/TfNSW policy (RMS Publication 17.336 version 2.0 dated 31/8/2017) which no longer permits Rural Type AUR intersection controls and requires a Rural CHR type intersection. The upgrade will further extend the acceleration lane improving road safety.
- King and Duke Street intersection - upgrade the 90-degree bend in Paterson with a refresh of the diving line marking through the intersection to delineate and separate opposing traffic. The upgrade will allow for the relocation of the driveway on the north side of the intersection to improve space allocation for on street parking.
- Gostwyck Bridge approach upgrade - the upgrade will allow for the realignment of Dungog Road by incorporating a series of curves to raise driver awareness and associated new line marking, as well as Vehicle Activated Signage (VAS) alerting drivers approaching the bridge to reduce speed.

Daracon has considered input from the Traffic and Transport forums along with outcomes of broader engagement activities with community and other stakeholders and identified a number of additional mitigation measures to assist in the reduction of potential traffic impacts. These are in addition to measures that had already been implemented by the company. The key strategies to support the management of truck movement and associated traffic related impacts are to be contained within:

- Driver Code of Conduct
- Traffic Management Plan.

While a Driver Code of Conduct had previously been in existence for the quarry, following the Traffic and Transport CAF, Daracon published a revised Driver Code of Conduct on the Martins Creek Quarry page of the Daracon company website and has agreed to the continued consideration of any comments or feedback received from the community on this document. The Code of Conduct applies to all trucks travelling to and from the quarry and outlines actions to minimise the impact of Daracon's operations on the community and environment including, but not limited to:

- limitations on hours with which trucks may travel through Paterson and Martins Creek (6.45am and 7am respectively)
- enforcement of truck speed limits:
 - o 40 km/hr through Paterson, Bolwarra and Vacy
 - o 20 km/hr on Station St Martins Creek
- no access to the quarry via Martins Creek Rd and Cory St
- trucks not to travel in convoy
- restricted use of compression breaking within East Maitland, Brandy Hill, Bolwarra, Paterson and Martins Creek or any other residential areas unless necessary for safety reasons

- covering of truck loads and ensuring that all loose debris is removed prior to leaving the quarry site and again after unloading
- conducting regular monitoring, spot checks and observation of driver behaviour.

The Code of Conduct also reinforces the need for drivers to demonstrate increased vigilance in areas of high pedestrian and vehicle activity and in particular at school bus drop off and collection points along the haul route and through the townships.

Daracon is committed to regular reviews of this Code of Conduct and the inclusion of new traffic and transport mitigation measures identified as appropriate and to regularly communicate these measures to all drivers via driver toolbox talks and induction activities and to regularly monitor compliance of the Code of Conduct's implementation.

Additional proposed inclusions to the currently existing Code of Conduct include:

- Truck speed limits of 20-25 km/hr when travelling through the intersection of King and Duke Streets in Paterson.
- Requiring the reporting of any identified substantial road pavement irregularities within Paterson with these reports being passed onto both the DSC and MCC for attention.
- Regular and ongoing engagement with bus companies to allow for the identification and implementation of reasonable and feasible measures to manage interactions between buses and quarry trucks such as the identification of bus stops along the haul route and education of truck drivers as to the location of these to further increase awareness and enhance safe driving practices in their vicinity. This is particularly important given the regular changing nature of these due to families moving, changing schools etc. Related to this, Daracon will also investigate implementation of a system to identify rural bus stop pick up points i.e. stencil or paint markers as physical reminder to drivers that there is potential for children and parents to be close/adjacent to the road at school bus times.
- Reminder to drivers of the legal requirement to slow to 40km/hr when approaching a bus with flashing lights whether the bus is stationary or moving (Transport for NSW 2017).
- Should the Revised Project be approved, Daracon is also committed to:
 - continued exploration of additional opportunities to further monitor driver conduct and truck conveying including fleet management technologies as they become available and GPS monitoring for non-Daracon vehicles
 - investigating options for the establishment of truck parking bays and consultation with the community on potential locations for these
 - seeking to establish road maintenance contributions via VPAs with DSC and MCC to further mitigate any impacts on the road pavement, and therefore road safety, resulting from the transport of product associated with the Revised Project
 - providing advance community and key stakeholder (e.g. DSC and the EPA) advice in accordance with any emergency response plan enacted by the relevant State or National authority in the event that Daracon is called upon to assist in providing quarry material in response to an emergency event

- planning quarry activities, and revise haulage as required, around days when there is expected to be extra traffic within Paterson, i.e. due to a funeral or pre-arranged significant community events, e.g. Tocal Field days, car show events. Daracon's Community Liaison Representative will maintain links to key community groups and local service providers to identify such events and their timing. It is also anticipated that given the quarry will no longer operate on Saturdays that interactions with other Paterson based community events is to be limited
- further reductions of truck movements between 3-6pm every week day to 15 laden / 30 truck movements in acknowledgement that there is extra traffic within built up areas and along the haulage route during these hours due largely to school pick up times, after school and community based activities and people leaving their workplace
- investigation of relocation of the existing Paterson bus stop near the CBC Bed and Breakfast Café in collaboration with DSC
- maintaining regular communications with Hanson via its Daracon Community Liaison Representative with the equivalent role within Hanson to identify ongoing issues of community concern, possible cumulative issues and joint responses to these.

In addition to the above measures, while previous consultation with TfNSW indicates that Paterson does not meet the criteria for a pedestrian crossing and no particular option (i.e. crosswalk vs no crosswalk) has been supported during consultation activities to date, Daracon have proposed this as an option and would be supportive of contributing to the establishment of a pedestrian crossing in Paterson, or other works to upgrade pedestrian amenity, should DSC approve it as a part of the VPA considerations, and TfNSW approve these measures, as relevant. Further, Daracon have offered to contribute to upgrade of the footpaths in King and Duke Streets, Paterson, as part of VPA considerations.

Mental health impacts associated with quarry operations, including product transportation

Unless you live on the main Haul Route to a gravel quarry it is hard to understand the impacts of so many truck movements can have on your health. Both physically and mentally. It consumes you. You become so focused and aware of every truck movement. Interrupted sleep, the stress of hoping my children leave and enter our driveway safely. S-25008273

Mental health and anxiety - the thought of having to try and battle the roads with hundreds of additional trucks daily is enough to make anyone want to stay home. I will not let me children ride a bike or walk to a friend's home in fear of them being collected by one of 280 trucks a day whilst crossing the road! S-24903687

My mental health will be impacted if the proposal goes ahead. S-22992566

This proposal will destroy people's lifestyles and will cause health and mental health issues. S-23119529

Mental Impacts - Quarry extractions at this capacity produce continued excessive noise and vibration levels continuously. S-23190024

Finally, to build relations with the local community - Daracon should provide funding to local community groups and Mental Health providers to help with the impacts to Mental Wellbeing. S-23366982

It is surely more important for the rights of thousands of people to be put above a company that wants to devastate their living space, endanger their families and exacerbate mental health issues for the next 25 years. S-24627875.

Mental health impacts were identified by stakeholders with some stating that they experienced stress and anxiety relating to previous operations. Community members identified stress and anxiety relating to driving on the roads, the inability to enjoy the amenity of the area and their homes and fears relating to ongoing impacts to their way of life. Sleep disruption, as a result of noise from the Revised Project was also raised when discussing mental health effects.

As outlined in the SIA (refer to Appendix O of the ADA Report), whilst stress and frustration alone do not constitute mental illness, they affect quality of life, and for individuals with an existing vulnerability to mental health issues, are added stressors. Regular sleep disturbance is also known to affect health.

The mental health of one person also has flow on effects to their partners and family, with some stakeholders reporting their concern for their partners. This in turn has flow on effects to the community and the way it functions through a project's physical presence, as well as its mental presence.

Research confirms that the impacts of major projects for people who oppose them can also include increased stress levels, a sense of things happening beyond one's control and distress induced by change (Albrecht 2007, cited in University of Melbourne 2017).

Research reported in the Community Health and Safety Handbook developed by a Working Group of experts, industry, and government and non-government representatives, reports that one explanation for the association between environmental disruption and stress is an individual's sense of 'place attachment' or 'place identity' whereby the environment becomes part of their personal identity and they develop a strong attachment to the place (Connor et al. 2004). This view supports Albrecht's (2005) concept of 'solastalgia', which describes a feeling of 'homesickness at home' that might be experienced when the home environment is significantly changed.

In relation to the cumulative impacts associated with mining (or extractive) projects specifically, feelings of solastalgia are related to a number of factors, underpinned by a general feeling that one's home environment is 'under assault'. These factors include the loss of community, as well as changes in the local environment for those living nearby, such as property damage from blasting and traffic (Higginbotham, Connor, Albrecht, Freeman, & Agho, 2006). These factors have been linked to heightened levels of sadness, worry, fear and distress (see McNamara & Westoby, 2011), and lower levels of perceived health and wellbeing among impacted persons (Connor, Albrecht, Higginbotham, Freeman, & Smith, 2004), underpinned by feelings of powerlessness.

Consequently, it is likely that the Revised Project is contributing to mental health issues for some residents and landholders in the locality.

It is anticipated that the Revised Project design changes and associated proposed mitigation measures that have been discussed in the ADA Report with respect to continued ongoing engagement and targeted information provision should the Revised Project be approved, may result in some relief from that stress being felt; however it is also acknowledged that it will take some time for community confidence in the management of project impacts to be demonstrated and a sense of trust in Daracon's ability to manage and monitor these effectively and that community concerns may persist regardless of the Revised Project's compliance and how impacts are experienced.

To assist in the reduction of stress and associated potential impacts on the mental health of the community, Daracon has committed to implementing the following strategies:

- Establishing regular ongoing community engagement (open door policy) in relation to impact monitoring and management activities and maintaining this throughout the life of the Revised Project to ensure impacts are being feasibility and reasonably managed.
- Ongoing and transparent provision of environmental monitoring results to the community.

In addition and as outlined in **Section 5.1**, if the Revised Project is approved, for the first 12 months following project approval, Daracon propose to commit part of the community funds to provide access for the local community to the Daracon EAP service. Effectively, this would provide those who identify as a community member proximate to the quarry or proposed haul route, with confidential access to up to 3 sessions with a qualified psychologist.

In recognition of the existing strained relationship with elements of the local community and of the view that historic engagement activities have been considered inadequate, Daracon proposes to develop a more structured Community Engagement Strategy that affords further development of company-community relationships through regular and effective engagement and communication.

This strategy will assist in guiding the quarry's future community engagement and social investment activities.

The key objectives of the Community Engagement Strategy will be to assist Daracon to:

- focus current engagement activities within the community on those issues of key concern to the community (as identified through the SIA consultation program)
- ensure that the quarry's community contributions and sponsorships are focused on identified community preferences and areas of need
- track and monitor community issues and perceptions of the quarry over time and evaluation of the success of management to manage social impacts.

The strategy will therefore target:

- information provision and engagement:
 - o ongoing targeted provision of information that addresses the quarry's day to day operations in general and future development and expansion plans more specifically
 - o engagement mechanisms that will assist in further identifying and predicting any additional consequences and impacts associated with the Revised Project, should it be approved
- monitoring and management:
 - o addressing the continued management and monitoring of community concerns identified via the stakeholder engagement program
- social investment/community contribution projects:
 - o a more strategic and structured approach to community investment and sponsorships that targets sponsorship of local community projects, through the restructuring of existing community group sponsorship guidelines to:
 - include criteria with a focus on specific project preferences that are aligned to Daracon's and community preferences
 - increase existing recognition and awareness of Daracon's role in the community.

Consultation with residents as part of the SIA at Round 1, revealed that emails, newsletters and the local paper were the most preferred method of information provision on the Revised Project. In addition, based on feedback from consultation participants, other suggestions to improve engagement and communication efforts have included:

- a genuine engagement and collaborative approach
- regular (quarterly) provision of monitoring outcomes – although the environmental monitoring report format was not a preferred mechanism
- improvements in blasting notifications system
- regular information provision and community engagement and accessibility of information.

Daracon will also make the following information and documents publicly available on its website:

- all current statutory approvals
- all approved strategies, plans and programs required under conditions of a development consent
- minutes of CCC meetings
- regular reporting on the environmental performance and comprehensive summaries of the monitoring results
- contact details to enquire about the development or to make a complaint
- a complaints register, updated monthly
- copies of Annual Reviews and audit reports prepared as part of any Independent Environmental Audit of the Revised Project and Daracon's response to the recommendations in any audit report.

It is acknowledged that while much of the above is already available to the public in various forms – particularly on the Daracon website - it has been made apparent that accessibility and the ease of locating and reviewing this information has been limited in the past.

Daracon will continue to employ an experienced Community Liaison Representative to manage the ongoing engagement associated with the Revised Project and monitoring and management commitments relating to social and environmental impacts as detailed in the SIMP and other environmental management plans.

Specific activities to facilitate monitoring to ensure that community concerns, with respect to the quarry's existing and future operations are well managed include:

- preparation of a SIMP that addresses the Revised Project
- ongoing monitoring via engagement.

Daracon is also committed to trialling a Community Monitoring or Social Impact Diary whereby representative residents along the transport route and proximal to the quarry are asked to record for example, traffic issues in a diary format for feedback to the CCC or to the Daracon Community Representative as appropriate. Such a program will allow for integration of community collected data with operational data from site, e.g. comparison of perceived and actual blasting times or noise exceedance, etc. and encourages community participation in monitoring and management. This could also be used in conjunction with other community monitoring mechanisms, e.g. personal dashcam recordings.

Wellbeing impacts associated with noise

I have PTSD and my mental health was severely and adversely affected by the constant noises, rumbling and banging sounds. S-25047181

It would be impossible to open windows, work in the garden or do any outdoor activity when 40 trucks drive in front of the house per hour in addition to all the regular daily traffic. This has had extremely negative impact on our quality of life and wellbeing. S-23068206

As outlined in **Section 1.1** and throughout this document, Daracon have made substantial changes in response to community feedback in relation to noise impacts associated with the Original Project, both in terms of on-site operations and for product transportation.

As outlined in Section 6.4 of the ADA Report, the modelling results indicate that baseline/existing road traffic noise levels without the quarry trucks present exceed the NSW RNP (DECCW, 2011) criteria for some receivers due to existing traffic rates and proximity to the road.

The addition of quarry trucks at the capped maximum of 140 laden trucks per day (280 movements) and the capped maximum of 20 laden trucks per hour only results in an exceedance of the RNP Criteria at one receiver where it was not already calculated to exceed the criteria with the baseline traffic levels. Where the RNP criteria are already exceeded, or is predicted to be exceeded, the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.

The modelled scenarios with the addition of quarry trucks at the capped maximum of 140 laden trucks per day (plus the return trip) and the capped maximum of 20 laden trucks per hour represent worst-case traffic conditions. During usual operating conditions, road noise impacts would be lower than the levels predicted for the maximum operating scenarios.

Noise sources that could lead to sleep disturbance are typically transient noises and often have tonal characteristics. No rock excavation or processing activities will occur during the evening or night-time period. Activities that could lead to sleep disturbance include:

- train by-pass event on the spur line opposite the receivers in Station Street
- loading of rail wagons using front end loaders
- reversing beepers on the front-end loaders used to load the rail wagons.

The NIA results show that night time noise levels will not exceed sleep disturbance noise goals at any residential receivers (Umwelt, 2021b).

Daracon will continue to manage operations to achieve the approved operations noise limits throughout the life of the Revised Project through the continued implementation of an adaptive management approach, focused on implementing appropriate operational controls and management strategies to minimise noise impacts. The approach will vary during different quarry stages and weather conditions and will also consider evolving technology and associated equipment noise levels. Daracon has committed to the implementation of controls as outlined in **Appendix 2** over the life of the Revised Project as will be detailed as part of a revised NMP.

The VLAMP provides guidance on the approach to managing noise impacts in excess of the target PNTLs. Daracon will continue to consult with potentially impacted residents regarding management of noise associated with the Revised Project in accordance with the requirements of the VLAMP.

Health impacts associated with air quality

My grandson and daughter both experienced varied levels of breathing difficulties from the continued bombardment of our atmosphere of dust and diesel fumes all of which contain carcinogenic qualities. S-23190024

Our eldest son suffers from bad asthma and we do all the prescribed solutions from our specialists and actively use natural ways of helping him overcome this but the amount of dust and dirt from the hauling trucks is something we can not control. S-24878261

Air quality and dust fragments causing allergies and heightened asthma conditions. S-24903687

ALL trucks use DIESEL - more health problems for us S-23282908

As discussed in the AQIA (refer to Section 6.5 of the ADA Report), PM₁₀ and PM_{2.5} are the components of air borne particulate matter which are relevant to human health impacts. The NSW Government has set criteria for PM₁₀ and PM_{2.5} that are intended to protect human health. The assessment findings against these criteria are outlined below and in Section 6.5 of the ADA Report.

Based on the air modelling results, it is predicted that the contribution as a result of the Revised Project to the cumulative maximum 24 hour average and annual average PM₁₀ concentrations would be negligible with compliance with the EPA cumulative air quality criteria of 50µg/m³ and 25µg/m³, respectively, at all surrounding private residences (refer to Section 6.5.5 of the ADA Report). The annual average PM₁₀ concentrations with the Revised Project are expected to be similar than the annual average PM₁₀ concentrations under the recent quarry operations, which was in the order of 13µg/m³, as measured by the high volume air sampler located off Station Street, at Martins Creek.

Regarding diesel emissions, the AQIA modelling results showed that the diesel exhaust emission concentrations (including CO and NO₂) associated with the operational activities as well as road transport of quarry product would comply with the relevant criteria at all sensitive receivers. Exhaust emissions from operational activities and road transport are therefore unlikely to lead to adverse air quality impacts.

Daracon is aware that air quality is an important issue for the community and has committed to a range of emission controls to be incorporated into the design of the Revised Project to further minimise air quality impacts:

- watering of unsealed access roads
- water sprays for drilling activities
- cladding and water sprays on the primary and secondary plant
- cladding of the tertiary crusher and hopper
- cladding of the screening plant
- water sprays on product stockpiles.

Additional air quality monitoring, management and mitigation measures proposed as part of the Revised Project are outlined in **Appendix 2**.

Health impacts associated with silica dust

My main concern is for the health of the individuals living in the vicinity of the quarry and along the haul route. The particular rock that is being mined, andesite, contains about 52-63 weight percent silica (<https://volcanoes.usgs.gov/vsc/glossary/andesite.html>). Silica dust is a by-product created by the crushing of these rocks, and can have chronic and potentially lethal consequences when breathed in. S-25075254

...it does not appear that the Risk from Silica Dust has been addressed anywhere S-25072206

I also have very serious concerns about the release of dust – the proposal will lead to a release in carcinogenic silica dust throughout several communities, their businesses and schools. Wetting down loads will not be sufficient on hot days, and empty loads release more dust than full ones. S-23143206

I have been told these trucks are also carting a load with a high silica content (a known carcinogen) If this is the case, is wetting them down and covering the load sufficient to guarantee it won't escape? S-23212452

The Silica levels in the quarry material make the transport of this product through a built up area unsafe. The dust borne particles will settle in the houses and properties along the haul route. The health of many could be at risk through lung disease. S-23213842

It is highly likely that silicon dust will pollute the air at Paterson. This is potentially carcinogenic. S-25885456.

Silica is one of the most abundant minerals found in the earth's crust and is used in many products across a variety of industries. Crystalline silica is most dangerous to health when dust is generated, becomes airborne and is then inhaled by a worker (SWA, 2021). Respirable crystalline silica (RCS) is the term used when fine dust particles, such as those referred to as PM_{2.5} comprise crystalline silica (EnRisks, 2020).

Health effects are known to occur for workers who are frequently exposed to high concentrations of RCS when undertaking a range of activities with stone or man-made materials that comprise silica (EnRisks, 2020). Safe Work Australia (2021) indicates that examples of work activities that can generate a high risk for exposure to respirable silica dust particles include:

- during fabrication and installation of composite (engineered or manufactured) stone countertops
- excavation, earth moving and drilling plant operations
- clay and stone processing machine operations
- paving and surfacing
- mining, quarrying and mineral ore treating processes
- tunnelling
- construction labouring activities
- brick, concrete or stone cutting; especially using dry methods
- abrasive blasting (blasting agent must not contain greater than 1 per cent of crystalline silica)
- foundry casting

- angle grinding, jack hammering and chiselling of concrete or masonry
- hydraulic fracturing of gas and oil wells
- pottery making.

Further, Safe Work NSW indicates a health hazard is created when the very fine particles of RCS can be inhaled which is generally associated with uncontrolled cutting, grinding or drilling of products or materials containing crystalline silica (Safe Work NSW, 2021).

An assessment of potential impacts of crystalline silica from the Revised Project was undertaken (refer to Section 6.5 of the ADA Report). Typically, the Andesite rock source at the quarry has a crystalline silica content of between 8 to 15% based on petrographic analysis. Dust from quarrying activities such as crushing may therefore contain free silica. The free silica content is estimated to be only approximately 5% (Qualtest 2015).

In response to community concerns, Daracon conducted ambient monitoring of RCS at the quarry on 14 June 2019 in order to inform further assessment of potential impacts from the Revised Project. This monitoring involved the installation of a monitor located on the site boundary and positioned downwind of the quarry activities on a day representative of normal operations. As outlined in **Section 5.1**, Daracon will undertake additional RCS monitoring to validate the sampling completed for the AQIA (refer to **Appendix 2**).

As outlined in Section 6.5 of the ADA Report, the assessment found that the estimated maximum annual average RCS concentration at the site boundary is $2 \mu\text{g}/\text{m}^3$, a result which is below the $3 \mu\text{g}/\text{m}^3$ criterion noted by the Victorian EPA. Concentrations further from the site boundary, including at sensitive receptors, will be lower than $2 \mu\text{g}/\text{m}^3$. There is no current NSW EPA assessment criteria for RCS.

In relation to potential exposure and health risks associated with RCS from product transportation, there is limited data to support a finding that health effects, such as silicosis, may occur within the community, where exposures are significantly lower than within occupational environments (EnRisks, 2020). Trucks entering and leaving the quarry that are carrying loads will be covered at all times, except during loading and unloading.

Based on the assessment, there are no health risk issues of concern in relation to long-term community exposures to RCS in air within the community surrounding the quarry.

6.1.3 Noise

Issues relating to noise were raised in 340 community submissions.

Increased noise levels from quarrying operations

The increased hours of operation of the quarry will have a noise impact on neighbouring residents. S-24587708

My property is located uphill from the proposed development and the noise for loading/crushing machinery is frequently heard from as early as 6.20am - despite current operating hours, in fact is so noisy that it can sometimes wake us up. S-24724501

Furthermore there will be the additional burden of noise pollution from the site. Many measures have been proposed to suppress/diminish noise however with prevailing winds in the summer it is likely that we will be exposed to unacceptable levels of intrusive and unrelenting noise. S-23305787.

In response to community and government concerns, Daracon committed to project changes to reduce the predicted noise impacts associated with quarrying activities from the Revised Project, including the refinement of operational hours (refer to **Section 1.1**).

Under the Revised Project, the following changes have been committed to:

- Quarry operations from 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday.
- As an additional mitigation measure, blasting of quarry material will only occur between 11.00 am and 3.00 pm on Monday to Friday, with no blasting on Saturdays.
- No evening or night operation and no operation on Sundays or public holidays, apart from the following activities which may occur 24 hours seven days per week:
 - o rail loading and transportation
 - o necessary maintenance activities and/or environmental management controls, including vehicles/trucks moving in and out of the site for maintenance purposes as required.

As outlined in the ADA Report, the updated NIA (Umwelt, 2021b) for the Revised Project has indicated that there will be predicted exceedances.

In response to the EPA submission, Daracon have further considered reasonable and feasible mitigation measure that could be implemented during the period prior to the new access road being constructed. As discussed in **Section 3.1**, the installation of a noise barrier, along with other operational measures, could further mitigate noise impacts during the first 4 years of the Revised Project until both the new access road and rail loading facility are constructed.

Daracon will continue to manage operations to achieve the approved operations noise limits throughout the life of the Revised Project through the continued implementation of an adaptive management approach, focused on implementing appropriate operational controls and management strategies to minimise noise impacts. The approach will vary during different quarry stages and weather conditions and will also consider evolving technology and associated equipment noise levels. Daracon has committed to the implementation of controls as outlined in Section 6.4.6 of the ADA Report over the life of the Revised Project as will be detailed as part of a revised NMP.

The VLAMP provides guidance on the approach to managing noise impacts in excess of the target PNTLs. Daracon will continue to consult with potentially impacted residents regarding management of noise associated with the Revised Project in accordance with the requirements of the VLAMP.

Noise impacts from road transportation

Road – Influence noise levels not addressed S-24638304

The increase of trucks will without a doubt bring noise disturbance which impacts all residents in the vicinity, their wellbeing, their home values, their livelihood. S-21236148

The noise of the trucks - they are considerably louder than normal traffic patterns for the area - again impacting the quality of life in this area. S-21462457

Noise pollution will be increased by the approx. 280 truck movements per day. S-22672300

The constant road noise, the vibration of my home each time a truck passes by severely detracts from

In response to community and government concerns, Daracon committed to project changes to reduce the predicted noise impacts associated with product transportation from the Revised Project, including the reduction of road transportation (refer to **Section 1.1**).

Revised product transport arrangements for the Revised Project, include:

- reduced peak daily laden trucks of 140 per day (280 movements) for 50 days per year, otherwise 100 per day (200 movements) with a peak of:
 - o 20 laden trucks per hour (40 movements) between 7.00 am to 3.00 pm, Monday to Friday
 - o 15 laden trucks per hour (30 movements) between 3.00 pm and 6.00 pm, Monday to Friday
- no trucks through Paterson Village before 6.45 am
- increased quarry product transported by rail
- removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required).

As outlined in Section 6.4 of the ADA Report, the updated NIA for the Revised Project has indicated that baseline/existing road traffic noise levels exceed the RNP criteria for some receivers due to existing traffic rates without the quarry trucks present. The addition of quarry trucks does not result in an exceedance of the RNP criteria where it was not already calculated to exceed with baseline traffic levels. Where the RNP criteria are already exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2 dB. The RNP states that noise level increases of up to 2 dB(A) are considered barely perceptible to the average person.

The addition of quarry trucks will increase the road traffic noise levels at all the sensitive receivers assessed, however the maximum traffic generation scenario modelled will not increase the road traffic noise levels at any sensitive receiver by more than 2 dB and therefore meet the relevant RNP criteria for new developments.

Noise impacts from rail transportation

When the quarry trains are being loaded, the trains remain with engine running and stay for hours, this is very noisy. S-23023126

...the use of additional trains for transport has a detrimental impact on the living amenity at my property as well as decreased amenity for those living all along train routes both rural and in neighbouring suburbs. The use of trains over trucks only pushes the negative impacts of transport onto a different group of people. S-24724501

In response to community and government concerns, Daracon committed to project changes to reduce the impacts associated with product transportation from the Revised Project, including the increase of rail transportation (refer to **Section 1.1**). The Revised Project seeks to transport up to 500,000 tpa via road with the remaining product transported via rail. If the market permits, Daracon is committed to increasing the quantity of quarry product by rail, up to a maximum of 1.1 Mtpa. Quarry products will be transported via rail in response to market demands.

The NIA for the Revised Project assessed the potential noise impacts associated with rail noise in accordance with the relevant guidelines. As discussed in Section 6.4.5.2 of the ADA Report, during the daytime period, more than twenty pass-by events could occur without exceeding the Recommended Acceptable LAeq noise level at the closest receivers on Station Street.

Over the four-hour evening period, only one pass-by event is possible before the Recommended Acceptable LAeq noise level at the receivers on Station Street is exceeded. During the evening period more three pass-by events could occur without exceeding the recommended maximum LAeq noise level at the closest receivers on Station Street.

During the night-time period, a single pass-by event would result in the Recommended Acceptable LAeq noise level at the receivers on Station Street being exceeded, but two pass-by events could occur before the Recommended Maximum LAeq noise level is exceeded.

Network constraints limit the number and timing of train movements that can service the quarry. These constraints currently limit the existing approved operations in terms of daily train movements and the time of train movements. As a result of these constraints, there would be no increase in the period based LAeq,Day-time or LAeq,Night-time noise levels due to train movements from quarry on network rail lines.

As outlined in **Section 4.1.1**, the installation of a noise barrier, along with other operational measures, could further mitigate noise impacts during the first 4 years of the Revised Project until both the new access road and rail loading facility are constructed, should agreements with significantly affected landholders not be secured.

Noise monitoring

The revised Noise Impact Assessment states that noise impacts currently exist from the operations and that marginal to moderate exceedances are expected from the revised proposal. At the same time there is no commitment to install real time noise monitoring as a management tool for the operation. S-23222081

Real-time monitoring is used as an on-site monitoring tool to assist with the investigation of complaints or noise-related issues and to inform sites that noise levels are elevated and are nearing compliance limits. Real-time noise monitoring units are designed to send alerts advising operational personnel that noise at the monitor is approaching performance criteria. Action can then be taken to modify operations where appropriate. The NIA for the Revised Project proposed real-time noise monitors are set up at the two (2) locations to the west of the quarry (Umwelt, 2021b).

As outlined in Section 6.4.6 of the ADA Report, Daracon has committed to review and update the existing Noise Management Plan (NMP) and then implement the updated plan for the Revised Project. The NMP will detail the monitoring and management controls to be implemented to manage noise impacts associated with the Revised Project including ongoing implementation of the proactive and reactive management protocols in response to noise trigger levels defined in the plan.

The commitment for real time monitoring is included in the summary of management and mitigation measures in **Appendix 2**.

6.1.4 Blasting and Vibration

Issues relating to blasting and vibration were raised in 100 community submissions.

Vibration impacts associated with blasting activities

During which time we felt the earth move and windows rattle with blasting at various hours. S-23260257

... the blasting shakes my house... S-21478207

During the time when the quarry was operating, prior to its closure, we had experienced our house shaking on several occasions. On phoning the quarry, it was confirmed that blasting had just occurred on each occasion. We are of the opinion that the proposed closer blasting positions can only make the situation worse. Our property has several areas of exposed rock plus rock had to be excavated when our pool was built. We read in a report on complaints from residents of View Street that this was not the same rock strata as the quarry and therefore the blast would not travel through the rock. Could this be geologically confirmed? We also have cracks in our bricks and cornices. S-23267806

Due to the severity of the blasting, many cracks have occurred in the walls of our house as the entire house shakes each time blasting occurs. S-23023126

I have experienced the blasting vibrations and noises from Paterson, which could only increase with the size of the quarry's operations. S-23143206

Excessive noise and vibration caused by blasting levels required to operate at this illegal rate. S-23190024

A comprehensive assessment of potential blasting and vibration impacts of the Revised Project has been undertaken and summarised in Section 6.7 of the ADA Report.

The results of the BIA (Bellairs, 2021) indicate that ground vibration and blast overpressure levels can be managed to meet relevant blast emission criteria at all sensitive receiver locations through appropriate blast design and the implementation of appropriate control measures. Each blast will be designed to comply with the relevant criteria and the design practice at Daracon incorporates a factor of safety to provide for unexpected conditions (that is, blasts are designed to result in impacts below the limit, not on the limit).

As outlined in Section 6.7 of the ADA Report, Daracon has a demonstrated track record of managing blasting impacts from its quarrying operations with no exceedances of the relevant ground vibration criteria at the private residences, and one result above 115 dBL (but less than 120 dBL) at the Gully Monitor (located at 336 Dungog Road) over a 6.5 year period, extending from 1 March 2013 to 19 August 2019 (consisting of 158 blasts). In addition, the EPA undertook an independent monitoring audit involving 13 separate blasts from the quarry during 29 March to 27 August 2018 at a location in View Street, Vacy. Based on the data collected during the audit, the EPA considered that Daracon's vibration and overpressure monitoring undertaken was appropriate for complying with the conditions of the EPL with no breaches of the EPL limits or conditions.

Additionally, in response to community concerns in relation to property damage resulting from blasting activities, Daracon commissioned an independent inspection, monitoring and reporting relating to blast vibrations from the quarry at a residence in Vacy during 2019. The peak particle velocity of the measured blast was measured at a magnitude of 10 to 20 times lower than the levels likely to cause damage to residential properties. The assessment indicated that the residence had not been damaged due to blasting operations at the quarry.

Daracon has also committed to independent blast monitoring to be undertaken for three blasts within the first year of the Revised Project by an independent qualified person, and in consultation with the EPA. Daracon will consult with the Martins Creek CCC and/or representative of DSC in relation the monitoring times and locations. Independent monitoring would be conducted 3 times per year, every 5 years thereafter.

6.1.5 Social Amenity

Issues relating to social impacts were raised in 381 community submissions.

Impacts on social amenity

Any increase in the extraction or modes of transport will destroy the rural amenity of the area and have extremally negative social impact. Blasting, relentless industrial noise, vibration, fumes, dust and hundreds of heavy vehicles on country roads that were never built to sustain such traffic cannot be reconciled with historical character of Paterson, Bolwarra, East Maitland, their scenic drives, heritage sites and lifestyle we all moved here for. S-23068206

The proposal for the expansion of Martins Creek Quarry will destroy the amenity of Paterson township as well as making road travel very dangerous. The noise, dust and vibration caused by truck movements through Paterson township would be unacceptable as we have experienced this during Daracon's period of unlawful activity during 2017-2019. S-23109019

This upscaling of Martins Creek Quarry is totally inappropriate for this quiet rural community - it will ruin the entitlement of residents in the surrounding communities and villages, to "quiet enjoyment" of their environment, due to increased noise, dust and air pollution. S-23340393

My family recently moved to Paterson at the end of 2020. We moved here to enjoy the rural lifestyle, native wildlife and the serenity. After hearing about the quarry expansion proposal, I believe that my quality of life will be impacted. S-23028972

Reduction in social and community amenity. S-23062871

There is a blatant environmental disregard for the residents, buildings and businesses of Paterson and surrounding areas. To allow a beautiful historic village to be ruined like this is beyond comprehension. S-22993494

The overall impact on the amenity of people within or visiting Paterson will be intolerable. S-23413495.

As discussed in **Section 5.1**, amenity impacts have been assessed for the Revised Project. Further, the Revised Project has been specifically redesigned to minimise social amenity and environmental impacts where possible.

The 2017 NSW SIA Guideline includes amenity and changes to this under the broader social impact category of “surroundings” which includes access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity. It also notes that when considering perceptions of adverse impacts on amenity, an evaluation must be made of the reasonableness of those perceptions. This evaluation involves ‘the identification of evidence that can be objectively assessed to ascertain whether it supports a factual finding of an adverse effect on amenity...’: *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 133.

Section 7.4 of the SIA notes that whilst the relevant technical assessments were conducted in accordance with relevant government guidelines, and have identified that the Revised Project is not anticipated to have a significant impact on the amenity of Paterson village with respect for example to road traffic noise, air quality and vibration from truck haulage, it is nevertheless clear that for those residing along the haul route within Paterson village, there remains potential for social amenity to be impacted and disruptions will be felt amongst within community. Related impacts related to a changing sense of place/sense of community as a result of the Revised Project have also been addressed in the SIA.

The SIA has identified that the key negative social impacts predicted include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts. Positive impacts of relevance include potential economic benefits to the region and State through employment, procurement and business opportunities. The Revised Project will also lead to a secured availability of construction materials for markets across NSW.

As has been highlighted in the SIA, project development brings benefits and costs that are not always evenly distributed across individuals and stakeholder groups and as a result, where social impacts are predicted it is the role of a SIA to outline how such impacts can or cannot be managed.

Given Daracon’s approach of reviewing the Revised Project design to minimise impacts, the social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

Sense of Community

Community degradation- the township of Paterson is a small rural community. The roads are not designed to handle large truck movements and the noise makes talking and listening difficult at the roadside, churches and shops. A peaceful coffee is interrupted constantly by gear changes, accelerating and compression braking. It was miserable when trying to eat at the CBC when the trucks were 8n action previously. The change in the village since the cessation of activities at the quarry has been lovely with a notable increase in tourist visits. An increase in truck traffic will reduce the ability of the town to attract tourists. S-25049962

The close knit village depending, as it does, for its existence on the cooperation of the inhabitants, is going to be destroyed by a constant stream of heavy trucks, diesel fumes and damped down dust from the quarry in quantities that are guaranteed to destroy the enjoyment of this historic village and the ambience that makes it so special. S-23379962

As a long term member of the community, I believe approving such an application will be the demise of the historic Martins Creek and Paterson communities and have severe consequences to others living along the haulage route through to East Maitland. S-25828357

As noted in the SIA, it is important to note impacts associated with sense of community are intricately linked to those identified under social amenity, and transport and traffic impacts on social amenity more specifically with trucks and traffic movements thought to have diminished the ambience of rural villages along the haul route, and for those living in Paterson and Bolwarra Heights in particular.

In general terms, sense of community also relates to ‘the extent to which individuals in a particular location have a notion of being part of a community, and of helping out in the community by participating in community activities, and being a good neighbour (i.e. having neighbourliness)’ (Vanclay, Esteves, Aucamp, & Franks 2015, 77). Key elements of sense of community therefore can include membership (belonging, emotional safety, personal investment, social conventions); influence; integration and fulfillment of needs; and a shared emotional connection.

In evaluating thousands of public spaces around the world the Project for Public Spaces has found that in considering what makes a great space or place, to be successful they generally share the following four qualities:

- they are accessible
- people are engaged in activities there
- the space is comfortable and has a good image
- it is a sociable place: one where people meet each other and take people when they come to visit.

Coakes (1995) discusses many different elements of sense of community including the need for shared value, social interaction, and connection to a common structure (e.g. geography, gender, culture). The IAIA SIA Guidance also states that sense of belonging to a social group, is an important human emotional need with the consequence of many projects being a reduction in the sense of belongingness, either because of the physical and social changes that take place, the presence of newcomers, but also because of alienation-inducing processes, that may occur (Vanclay, Esteves, Aucamp & Franks 2015, 74).

During discussions, consultation participants noted the high value attached to rural amenity (peace, tranquillity) and the lifestyle the area provides and were concerned that the operational impacts (dust, noise) and the number of trucks traveling the haul route would fundamentally change the nature and character of the area, in particular within Paterson and Bolwarra and how they enjoyed their space. The operation of the quarry of the scale proposed was seen to be at odds with these values.

The presence and discussion of the Revised Project in the community, was also seen to be influencing community cohesion and raising fears around potential impacts on sense of place. While some participants noted that the shared objection to the Revised Project and feelings towards Daracon had brought certain members of the community closer together, others commented that the Revised Project has polarised and segregated the community.

The sense of community sentiment was further reflected during engagement for the SIA with residents describing their communities as 'tight-knit' with a strong sense of communal spirit and mutual support. When asked to describe what they value about living in the area SIA participants noted 'rural village amenity', 'sense of community', 'character' and 'connectedness' as important.

The potential impacts on sense of place / community as a result of the Revised Project were seen to have included:

- disruption in daily living and movement patterns – largely related to the traffic movements associated with the Revised Project (refer to Section 7.3.1 of the SIA)
- disruption in social and community networks
- diminishing of existing community values
- potential movement of people out of the area (population outflux).

When considering sense of community and place related impacts, it is important to acknowledge that quarrying has a long history in the locality (albeit at a lower scale), the significance of which has also been acknowledged by MCQAG and participants during consultation activities. However, some members of the community anticipate that the rural amenity and sense of community associated with a quiet rural lifestyle will continue to be impacted to varying degrees due to changing nature of the quarry and its activities, depending upon value that individuals attach to the local rural ambience.

While the revisions to the project design that have been identified with respect to the proposed changes in operation scale and operating hours have been identified with the intent of minimising impacts on existing community values, it is acknowledged that the proposed reductions in operations were considered by many consulted as not going far enough and that this was particularly the case since the quarry had been placed on limited operations in September 2019 and there had been virtually no activities associated with the quarry since that time.

In addition to changes to the Revised Project parameters, to address the issues raised by the community relating to impacts on sense of community, Daracon proposes to target its existing community investment and sponsorship program to focus on those projects most closely aligned to identified community impacts, needs and aspirations. While the existing sponsorship program is limited given the size of the operation compared to that of larger-scale mining operations, a key objective of the program moving forward would be to maintain sense of community and rural amenity, through for example, promoting Paterson and Martins Creek and its key community and historical assets and values supporting local businesses.

Allocation of funds under this community investment program will be determined in collaboration with the CCC with further detail of the proposed sponsorship program.

To enable the ongoing monitoring of the success of the Revised Project, revisions and other proposed mitigation measures to address the identified issues of concern, Daracon has also engaged a Community Liaison Representative who will be responsible for maintenance of a program of regular meetings with sensitive and interested stakeholder representatives.

Community identified mitigation and management measures have been summarised at **Table 6.1**, along with Daracon proposed onsite management strategies for the Revised Project.

Table 6.1 Summary of Mitigation and Enhancement Strategies – Sense of Place and Community

Impact Theme (s)	Community Identified Mitigation Measures	Proposed Mitigation and Enhancement Strategies
Sense of Community	<ul style="list-style-type: none"> • Cap hourly truck movements • Limit hours of truck movements • Transport product by rail • No trucks through Paterson 	<ul style="list-style-type: none"> • Reductions in truck movements – volumes and time frames <ul style="list-style-type: none"> ○ No road haulage on Saturdays ○ Reduced road haulage 3-6pm weekdays • Reduced quarry operating hours • Increased use of rail • Community sponsorship program to focus on amenity projects • Monitoring and evaluating the success of mitigation measures via a SIMP • Community Engagement Strategy

6.1.6 Air Quality

Issues relating to air quality were raised in 269 community submissions.

Air emissions from quarry operations

Dust emissions from the quarry as it exists are of concern to our health. The tangible evidence in our rain gauge shows the fallout from the quarry's production. Obviously the air that we breathe contains this same substance. The dust cloud pall which is visible above the quarry and its surrounds is an issue that needs to be addressed. A system of dust monitoring should be established for the protection of the residents of Paterson and surrounds. S-24901243

I have had a number of significant health issues over the past couple of years, that could possibly have been caused from dust and pollution from loading and blasting. This factor would most definitely increase for me and many of the surrounding population of Martins Creek, with additional dust and pollution. S-23349795

Dust deposits in our house have noticeably decreased since the quarry closure. S-23267806

Silica and other Dust in the air S-23328535

A comprehensive assessment of potential air quality impacts of the Revised Project has been prepared with a summary provided in Section 6.5 of the ADA Report. The Revised Project will result in emissions to air from a variety of activities, as identified and discussed in Section 6.5.1 of the ADA Report. These emissions will mainly comprise particulate matter (PM) in the form of deposited dust, total suspended particles (TSP) which includes particulate matter with equivalent aerodynamic diameter of 10 microns or less (PM₁₀) and 2.5 microns or less (PM_{2.5}) from general quarrying activities, fume (oxides of Nitrogen (NO_x)) from blasting and minor emissions from machinery exhausts (PM, NO_x and CO).

The design and planning of the Revised Project has closely considered air quality impacts and incorporated air quality mitigation and management measures into the Revised Project design. Key measures included in the Revised Project design that have minimised air quality emissions include:

- reduction of the overall disturbance footprint by approximately 16.8 ha through optimisation of the proposed extraction within the West Pit and therefore reducing the area of operations that could generate dust
- reduced operational hours which would imply that the running of processing equipment, stockpiling and transportation of material will be reduced and thereby reduce the amount of dust generated by the operation of the Revised Project
- limiting the number of haulage routes (where feasible), thus minimising transport routes and associated dust generation and diesel emissions
- progressive rehabilitation of disturbed areas to reduce wind generated dust where feasible
- ongoing implementation of the air quality management practices of the previous operations at the quarry (e.g. through a high level of active dust control).

Daracon is aware that air quality is an important issue for the community and has committed to a range of emission controls to be incorporated into the design of the Revised Project to further minimise air quality impacts:

- watering of unsealed access roads
- water sprays for drilling activities
- enclosure and water sprays on the primary and secondary plant
- enclosure of the tertiary crusher and hopper
- enclosure of the screening plant
- water sprays on product stockpiles.

Additional air quality monitoring, management and mitigation measures proposed as part of the Revised Project are outlined in **Appendix 2**.

The AQIA predicted that there would be very little change in contribution for all particulate matter classifications (PM₁₀, PM_{2.5}, TSP and dust deposition) beyond the Project Area boundary as a result of the Revised Project, with no exceedances of the EPA criteria at any of the sensitive receiver locations. The assessment further showed that emissions from blasting and associated fume are not expected to result in any adverse air quality impacts, based on model predictions which show compliance with EPA criteria.

Based on the results of the AQIA, with the implementation of the proposed management measures nominated in **Appendix 2**, it is concluded that the Revised Project would not cause adverse air quality impacts on surrounding receivers or the local air shed.

Dust impacts from product transportation

Secondly I am extremely worried about the impacts on the air quality with the sediment leaving the trucks, they are only briefly watered down and on a hot summers day in Paterson that won't be good enough to stop the dust. S-23028972

The trucks that come from the quarry are not required to have covers on their loads, and are constantly dropping stones. S-23053000

They may say they (Daracon) wet down to reduce dust emissions into the air we breath. What about those hot summer days when the product dries out, what about the emissions to the air along the haulage routes. Covering loads does not stop emissions or particles into the air. S-23119529

the air quality - I moved to the country for clean air and this amount of traffic movements only increases the air pollution in an otherwise clean environment. S-21462457

The AQIA for the Revised Project considered potential air quality impacts associated with the road transportation (refer to Section 6.5 of the ADA Report). The AQIA quantified the potential particulate matter (PM₁₀ and PM_{2.5}), NO₂ and carbon monoxide (CO) emissions using the RMS's Tool for Roadside Air Quality (TRAQ) air quality screening tool. TRAQ adopts emission factors from the EPA's Motor Vehicle Emissions Inventory and uses the CALINE air dispersion model to predict the maximum near roadside air pollutant concentrations.

As outlined in Section 6.5.5.4 of the ADA Report, emissions are predicted to remain well below the nominated EPA criteria and are therefore unlikely to lead to any adverse air quality impacts. All trucks entering and leaving the quarry that are carrying loads will be covered at all times, except during loading and unloading.

Diesel Emissions

Also the extra diesel fumes will be another on going long term effect. S-23119529

Exhaust fumes from diesel trucks will increase pollution in the atmosphere, and cover residences in greasy soot, to a much greater extent than now. S-22672300

The diesel fumes are offensive. S-25008273

Emissions from diesel exhausts associated with off-road vehicles and quarry plant and equipment have been assessed as part of the AQIA (refer to Section 6.5 of the ADA Report). The Revised Project proposes to largely use the existing equipment fleet that is already in place at the quarry. The most significant emissions from diesel exhausts are products of combustion including CO, NO₂ and particulate matter (PM₁₀ including PM_{2.5}). The NO₂ and PM₁₀ (including PM_{2.5}) have been considered as part of the AQIA.

As outlined in Section 6.5.5.3 of the ADA Report, modelling of the potential NO₂ concentrations associated with diesel use as part of the Revised Project indicates a maximum 1-hour average concentration at the nearest sensitive receiver (R1) of approximately 20 µg/m³ or less. With the addition of maximum background levels of 66 µg/m³, the predicted levels readily comply with the criteria of 246 µg/m³.

Predicted annual average NO₂ concentrations at the nearest sensitive receiver (R1) are approximately 10 µg/m³ or less. With the addition of background levels of 16 µg/m³, the predicted levels comply with the EPA criteria of 62 µg/m³. All other surrounding private receivers are more distant and are predicted to have lower levels than those predicted at the nearest residence.

Diesel exhaust emissions associated with operational activities (quarry plant and equipment) and off site road transportation (truck movements for quarry sales) are predicted to remain well below the nominated criteria and are therefore unlikely to lead to any adverse air quality impacts.

Dust contaminating rain tank drinking water

If the fine dust finds its way into my house, it seems obvious it will also be on my roof and will get washed into my rainwater tanks the only water source available to me and contaminate my drinking water. S-23119631

Drinking water pollution- we are on tank water at Duns Creek which is the suburb which backs onto the mountains of Martin's Creek. S-25049962

The AQIA predicted that there would be very little change in contribution for all particulate matter classifications (PM₁₀, PM_{2.5}, TSP and dust deposition) beyond the Project Area boundary as a result of the Revised Project, with no exceedances of the EPA criteria at any of the sensitive receiver locations. The Revised Project presents a low risk of potential drinking water contamination.

Regardless, to address any residual concern about potential dust deposition impacts on drinking water tanks, Daracon will commit to provide for the inspection and, as necessary, cleaning of drinking water tanks for private residences within 500 metres of the quarry, upon request from the landholder.

6.1.7 Biodiversity

Issues relating to biodiversity were raised in 220 community submissions.

Impacts on biodiversity

It appears that many Threatened and Endangered Species have been ignored including Spotted Quoll and Koalas. S-25072206

The additional clearing of any amount of bushland should not be approved. Offsetting the destruction of bushland will not help local species and ecological communities. S-24724501

Clearing more trees and other vegetation has proven detrimental impacts on the land including subsidence, decreasing biodiversity and substantial impacts on wildlife. S-23301600

The impact on koala habitat is also extremely short sighted. These creatures are being pushed out of regions like ours where they should be treasured for their iconicism and biodiversity in the local ecosystem. Daracon has shown previously that it can't be trusted to fulfil its environmental obligations no matter what they commit to in the environmental management strategy of this project. S-24834713

The expansion of this quarry is as horrifying as it is stupefying. I am shocked that less than two years after the most catastrophic habitat loss the nation has ever seen in the bushfires of 2019-20, the government is even considering the destruction of more critical habitat for our endangered koalas, swift parrots, spotted quolls and other precious Australian natives. There is so little bushland left in the Hunter, we need to protect the fragile and limited biodiversity still unaffected by mining and farming. S-25047534

A comprehensive BAR has been prepared for the Revised Project in accordance with the SEARs (dated 4 August 2016) and in response to government agency and community submissions during the exhibition of the Original Project EIS (refer to Appendix J of the ADA Report). Furthermore, the BAR has been prepared to address the Guidelines for preparing Assessment Documentation relevant to the EPBC Act provided by DPIE and to assess the potential ecological impacts of the Revised Project following the NSW Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects (FBA).

Biodiversity impacts were identified by the community and other key stakeholders as one of the key issues of concern. In response to address this concern, Daracon has redesigned the quarry plan for the Revised Project by committing to no quarrying in the previously proposed East Pit, resulting in a reduction of the quarry disturbance footprint of 16.8 ha, which includes avoiding the clearance of 15.3 ha of native vegetation within Lot 21 DP 773220. A comparison of the Original Project's disturbance footprint and the Revised Project's disturbance footprint is provided in **Figure 6.1**.

With regard to Daracon's approach to the design and planning of the Revised Project potential biodiversity impacts have been recognised and thoroughly considered throughout the project planning process with consideration of the principles of avoid, mitigate and offset.

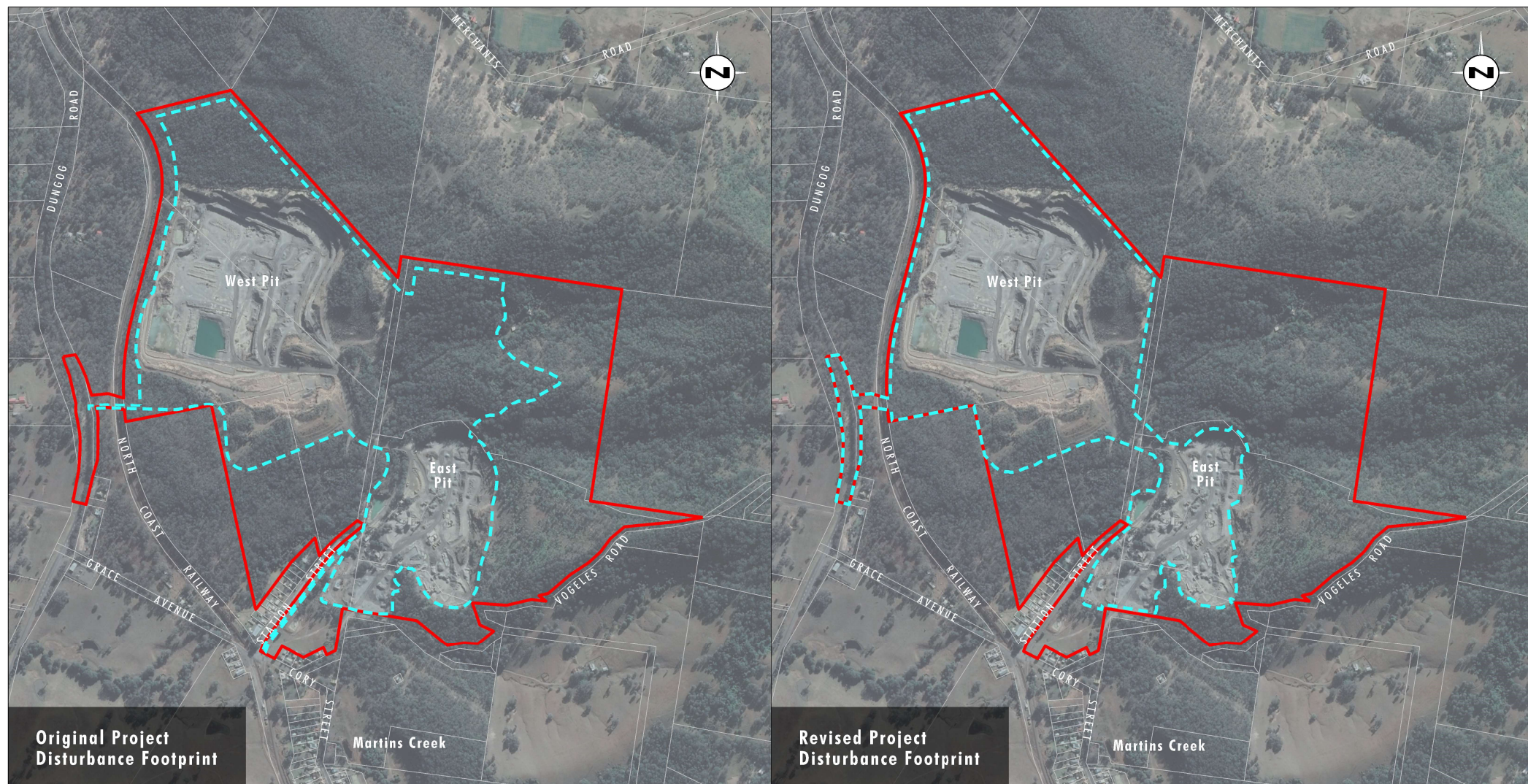


Image Source: Google Earth (2018)
Data Source: Daracon (2020)

0 250 500 750 m
1:15 000

Legend

- Project Area
- - - Disturbance Area

FIGURE 6.1

Comparison of the Original Project's Disturbance Footprint to the Revised Project's Disturbance Footprint

Whilst Daracon has strived to minimise impacts on biodiversity through the design process, not all impact could be avoided by the proposed design and a detailed assessment of the impacts was undertaken of the Revised Project. The Revised Project will require the disturbance of approximately 21 ha of native vegetation from within the 127 ha of the Project Area, as shown in **Figure 6.1**.

A summary of the key findings of the BAR is provided in Section 6.10 of the ADA Report including details of the key ecological values of the Project Area and the outcomes of the FBA process. The full BAR report is provided in Appendix J of the ADA Report.

Despite claims to the contrary, species including the koala and Spotted Quoll have been assessed in the BAR.

The construction and operation of the Revised Project will result in a range of direct impacts on biodiversity values within the proposed disturbance footprint of the Revised Project. Direct impacts include loss of native vegetation and fauna habitats, habitat fragmentation or isolation, altered hydrology regimes and the potential incremental decline in quality and extent of habitat as a result of clearing works and works associated with the construction and operation of the Revised Project.

Some minor indirect impacts associated with deterioration in water quality, dust, noise and vibration, decline in genetic diversity, weeds and feral animals may occur during the construction and operational phases, however, once the proposed rehabilitation has become established, the long-term connectivity of the area will be improved. These indirect impacts will be similar to those experienced with the historic and more recent operations at the quarry and will therefore not substantially change with the Revised Project.

The biodiversity impacts of the Revised Project will be offset in accordance with the requirements of the FBA and the EPBC Act Environmental Offsets Policy. Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project.

The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

6.1.8 Water Resources

Issues relating to water resources were raised in 25 community submissions.

Impacts to surface water and groundwater

Notable water runoff is not controlled. S-25079752

I am also very concerned about our water ways, particularly with the Paterson River near by. Daracon use a washing plant and a crushing plant. There is always run off, seepage and of course the spills. Also I believe Daracon add carcinogenics with the final product after the crushing process. S-23119529

As a result of the proposed clearing of land this will increase the amount of water run-off. This will then increase the potential of Zinc, Nickle and other mineral elements generated from mining practices to contaminate both groundwater and natural waterways. Of additional concern is the lack of clarity around the use and source of water supply. S-24757030.

A comprehensive assessment of the potential surface water impacts of the Revised Project has been undertaken and is summarised in Section 6.9 of the ADA Report.

Daracon have an existing WMS in place at the quarry to contain potentially contaminated water for reuse or treatment (if required) to achieve water quality discharge criteria prior to release at the licenced discharge points (LDPs). Water is reused at the quarry for haul road dust suppression and some demands at the Processing Plant. Where possible, clean water is directed around disturbed areas, however, in some areas clean and dirty water have not been separated, as this is impractical due to the steep terrain upslope of the quarry.

Daracon expanded the existing water quality monitoring program in January 2019. A network of monitoring sites both upstream and downstream of the quarry are sampled for physico-chemical parameters and nutrients on a regular basis in accordance with Daracon's surface water quality monitoring programme. Additional water quality data have been collected and analysed as part of the updated for the Revised Project SWIA (refer to Section 6.9 of the ADA Report).

As outlined in Section 6.9.7.1 of the ADA Report, historically, the controlled discharge water quality results demonstrate that the quarry consistently meets the discharge criteria for EPL 1378. While controlled discharge volumes and frequencies are predicted to increase with the Revised Project, the discharge water quality is expected to continue to meet the EPL 1378 criteria as:

- the same water treatment processes and controlled discharge management practises will continue to be implemented
- it is not proposed to increase the hourly discharge rates and the site water treatment processes and controlled discharge management practises have been demonstrated to achieve EPL water quality criteria at historical discharge rates.

The SWIA completed for the Revised Project indicates that impacts on downstream water quality and availability associated with the Revised Project are expected to be negligible.

The WMS will be modified over the life of the Revised Project to incorporate additional upslope catchments associated with the extended open cut pit catchments, an additional pit sump in the East Pit and associated pumps and pipes. The proposed WMS will continue to meet the water quality values in accordance with the WQOs and criteria of EPL during discharge (refer to Section 6.9.4 of the ADA Report). The proposed WMS will be documented in the quarry's WMP, should the Revised Project be approved.

Daracon has committed to implementing the following management and mitigation measures should the Revised Project be approved to management impacts on surface water resources:

- All runoff captured within the quarry would continue to be treated through the quarry WMS (which includes flocculation, coagulation and pH correction) prior to discharge to ensure the water quality criteria of the EPL continues to be met.
- ESCs would continue to be implemented in accordance with Landcom's Managing Urban Stormwater Volume 1 (Landcom, 2004) and Volume 2E Mines and Quarries (DECC, 2008) (the Blue Book) during stripping/development of new extraction areas or any other ground disturbing activities. The ESCs would be identified and regularly reviewed and updated as part of the quarry SWMP.
- Ongoing water quality monitoring at sites upstream and downstream of the quarry to enable the development of site-specific water quality trigger values in accordance with ANZG 2018. The site-specific trigger values will be used to initiate investigation in the event of any deviations in receiving water quality from the normal water quality range.
- In the event of water source restrictions, Daracon would limit production to ensure environmental controls, i.e. dust suppression, are maintained as a priority with the available water supply.
- A potable water usage reduction strategy will be included in the WMP following approval and a program for implementation of water savings measures developed within 12 months of commencement of operations. Ongoing potable water usage reduction performance will be reported as part of the Annual Review process.
- Potable water from the amenities water reticulation system will be sampled on a biannual basis and analysed to ensure the water meets the requirements of the ADWG (National Health and Medical Research Council, 2011). The amenities water supply tank will be inspected monthly for any potential contamination with organics or other materials.

A comprehensive assessment of potential groundwater impacts of the Revised Project has been undertaken and is summarised in Section 6.8 of the ADA Report.

The GIA indicates that the Revised Project is unlikely to have any significant impact on the groundwater system outside the quarry. As outlined in Section 6.8 of the ADA Report, the GIA indicates:

- probable estimates of seepage rates range from 5.7 ML/yr to 22.4 ML/yr per year across the Revised Project stages. Daracon currently holds an allocation to extract 33 ML of groundwater per year therefore, the purchase of any additional water allocation is not required
- the drawdown is expected to be minimal due to the estimates of seepage being similar to water table recharge
- no impacts to the Paterson River alluvium are predicted as a result of the Revised Project
- no impacts on registered bores are expected from the Revised Project and the beneficial water quality use category will not be affected.

An assessment of the Revised Project against the AIP minimal impact considerations for less productive aquifers was completed. The analysis indicated that none of the minimal impact criteria would be exceeded (refer to Section 6.8 of the ADA Report).

Should the Revised Project be approved, Daracon will prepare a WMP for the quarry in consultation with DPIE Water.

Potable water usage

The revised water impact assessment indicates an increase of 110% in potable water usage and increase water for dust suppression (section 6.1.2). With the surface water storage facilities, I can't understand how this is to be the case when the facility discharges treated water suitable for dust suppression purposes. S-23222081

As discussed in the SWIA, the volume of potable water imported is expected to increase on average by approximately 110% relative to the approved operations due to the increase in operational demands (processing and haul road dust suppression).

As outlined in Section 4.1.3, Daracon has committed to develop a potable water use reduction strategy as part of a WMP within 12 months of development consent. Implementation of the strategy will result in an increased demand for stormwater captured in the quarry WMS to replace the potable usage. While substitution of potable water demands with captured stormwater will reduce discharge volumes and frequencies, there is still expected to be a requirement to discharged treated water from the quarry WMS.

The potable water use reduction strategy is anticipated to involve the addition of water storage tanks and additional water treatment to provide for greater capacity to re-use collected stormwater to meet quarry process plant demands. It is noted that due to quality specifications for some products (e.g. heavily bound products that meet TfNSW specifications), the quarry may still need to meet some water demands with potable water only.

As outlined in Section 6.9 of the ADA Report, water is reused at the quarry for haul road dust suppression and some demands at the Processing Plant.

Modelling approach

Have hydrological and hydrogeological modelling considered only historical data or have trends and predictions been considered to account for the changing climate? S-24760957

Hydrogeological modelling to estimate groundwater inflows to the expanded quarry pit was based on historical groundwater level monitoring data as well as the range in number of annual rainfall days that are likely to trigger groundwater inflows to the quarry pit. The historical monitoring data used as the basis for hydrogeological modelling includes the recent drought period from mid-2017 to 2020. The hydrogeological modelling accounted for a range of climate scenarios from a dry year (i.e. 47 rainfall days resulting in groundwater inflows to the quarry pit) to wet years (i.e. 135 resulting in groundwater inflows to the quarry pit). The dry year scenario is considered to adequately account for a future climate scenario with lower annual rainfall.

Water balance modelling used historical rainfall and evaporation data in the Australian Water Balance Model (AWBM), a hydrological model, to estimate the volumes of rainfall runoff draining to the quarry WMS. Evaporative losses from quarry water storages were also based on historical evaporation data. The historical rainfall data input to the AWBM includes a broad range of rainfall scenarios (from wet periods to dry periods) and in particular includes the daily rainfall data for the recent drought period from mid-2017 to 2020. As such, the hydrological modelling is considered to adequately account for a future climate scenario with lower annual rainfall.

6.1.9 Heritage

Issues relating to heritage were raised in 44 community submissions.

Historic Heritage Impacts

The vibrations from the blasting and the massive increase in truck movements along Tocal Road, the main street of Paterson, will have a negative impact on the historical buildings that line this street and are in surrounding streets. S-24972205

Impacts to historical buildings. S-23062871

I worry about the impact it is having on the Historic Gostwyck Bridge. S-21330708

Every time trucks drive past our home, which not an unusual occurrence, but the vibrations of these large trucks cause the windows of our house reverberate, shaking the walls (I can show you the many cracks as proof). Our house, "Balmoral" was built in 1896 and is Heritage listed - we cannot afford building repairs. S-23290881

I, in common with several other people in Paterson, live in a heritage protected early colonial building. It, in common with the others, was built using a lime and sand mortar. This mortar is extremely susceptible to abrasion as a result of the shaking, already apparent, of these historic buildings. S-23379962

This area is an old area. Much of Paterson is heritage listed. This attracts many visitors to our locale. The quarry expansion, I believe will do damage to our buildings and tourism. The additional vibrations from blasting and trucks have the potential to damage our historic buildings, the constant heavy vehicle movements through town will drive the tourists away. S-23495301.

A HIS was been prepared to assess the potential heritage impacts associated with the Revised Project's primary haulage route, in particular:

- potential vibration impacts (if any) of the proposed number and frequency of trucks on the structural integrity of listed heritage items
- potential impacts to the significance of the conservation area as a result of the number and frequency of trucks travelling through a conservation area
- the impacts of proposed intersection and bridge approach upgrade works on the curtilage and significance of listed items and any conservation areas.

Vibration impacts generally only arise when a heavy vehicle hits a pothole, speed bump or other irregularity at speed and the energy from the impact is then transferred through the ground to adjoining buildings. As outlined in Section 6.11.3 of the ADA Report, the areas where truck movements associated with the Revised Project are in proximity to heritage buildings is the Paterson HCA. The road surface within the Paterson HCA is a bitumen pavement and, when properly maintained, does not contain irregularities that would induce significant vibration impacts. A review of the Vibration Guidelines and academic studies (see for example Basekar et al, 2015) indicate that vibration impacts from trucks under any conditions on bitumen roads is unlikely to cause structure damage to heritage buildings but can have cosmetic effects in extreme cases.

Since the Original Project, Daracon have committed to reduced truck numbers per hour and a speed limit for trucks driving through the King and Duke Street intersection, in Paterson.

As outlined in Section 6.11.4 of the ADA Report, Daracon have committed to a number mitigation measures to reduce potential impacts to heritage items from the Revised Project, including:

- contributing to road maintenance costs associated with truck haulage to enable DSC to ensure road conditions within Paterson are appropriately maintained
- insertion of a requirement in the Driver Code of Conduct to report any substantial road pavement irregularities in Paterson, with these reports being passed on the DSC for attention
- directions to be given to drivers alerting them of any identified road irregularities to enable them to minimise speeds where these occur when driving through Paterson
- reducing truck speeds through Paterson to 40km/hr, with further reduction to 20 to 25km/hr around the King and Duke Street intersection
- all kerb and other road infrastructure to be reinstated following the proposed works within the Paterson Village HCA to replicate that removed to allow for the King and Duke Street intersection works.

The HIS concluded that it is unlikely that the proposed intersection works within the Paterson HCA will result in any adverse visual or physical impacts to the heritage significance of this HCA or individually listed heritage items.

In addition, there are no identified impacts to the listed Gostwyck Bridge as a result of the proposed bridge approach works. The implementation of mitigation measures is expected to prevent any impacts on heritage values (including minor cosmetic damage) associated with quarry truck movements.

The HHA prepared for the Original Project addressed all non-haulage route components of the Original Project.

6.1.10 Greenhouse Gases

Issues relating to Greenhouse Gases were raised in 15 community submissions.

Greenhouse gases

In the Greenhouse Gas and Energy Assessment section 4.1 and 4.2 the argument that the project will have a minimal contribution to greenhouse gases is a poor argument; this argument is in line with the Tragedy of the Commons. There are hundreds of thousands of projects which all contribute and summed together create a large impact. S-24760957

The greenhouse gas and energy statement of the revised project statement omits the inclusion of rail haulage emissions and the associated rehandling of the product to end use. S-23222081

It appears that those at Daracon do not care at all about greenhouse gas emission or reducing their carbon foot print because if they did they would increase/upgrade the rail infrastructure. S-23448505

As discussed in Section 6.6 of the ADA Report, an updated GHGEA was completed for the Revised Project.

The Revised Project is expected to generate up to approximately 39,000 t CO₂-e of Scope 1 emissions over the life of the quarry. On an annual basis, the Revised Project could generate up to approximately 1,600 t CO₂-e Scope 1 emissions per annum.

The GHGEA indicated that the Revised Project's annual emissions are well below National Greenhouse Gas and Energy Act reporting thresholds (25,000 t CO₂-e) and Safeguard Mechanism thresholds (100,000 t CO₂-e). The Scope 1 emission intensity of the Revised Project is similar to other hard rock quarries approved for operation in NSW.

Over the life of the quarry, the Revised Project can also be associated with up to approximately 33,000 t CO₂-e and 162,000 t CO₂-e of Scope 2 and 3 emissions respectively. The Revised Project does not generate a large demand for electricity, and the majority of Scope 3 emissions are associated with product transport. Approximately 78% of total Scope 1 and 3 emissions are associated with product transport. It is noted that emissions would be generated regardless of the product transport i.e. road or rail. There would be potential increases associated with rail in some cases depending on the destination and the need to then transport from the rail destination to the end user.

To put the Revised Project's emissions into perspective, during operation, the Revised Project will contribute approximately 0.0000030 % to global emissions per annum (based on its projected Scope 1 emissions).

The Revised Project will mitigate greenhouse gas emissions through ongoing energy efficiency initiatives and optimising productivity.

Daracon is committed to the effective maintenance of equipment to ensure that they operate effectively and that diesel combustion emissions and greenhouse gas emissions associated with the Revised Project are minimised. This includes:

- servicing all machinery in accordance with maintenance contracts and adopting original equipment manufacturer recommendations for maintenance
- targeting the maintenance to ensure equipment remains fit for purpose over its whole life cycle
- review opportunities for improvement in diesel use and energy efficiency when purchasing or replacing equipment at the quarry.

In addition, as new technologies become available, they will be considered for incorporation into the fleet of machinery for both quarrying and haulage.

6.1.11 Visual Amenity

Issues relating to visual amenity were raised in 20 community submissions.

Visual Impacts

Loss of residential scenic amenity. S-23062871

This project will significantly impact the local environment due to...visual amenity... S-24785870

The environment will be impacted by the extraction and removal process and the transport process in a way from which it is unlikely to ever recover due to the level of extraction being sought. For those of us living in this community we will also have to live with the noise, dust and impact on the visual amenity. S-24972205

An assessment of the potential visual impacts of the Revised Project has been undertaken and a summary provided in Section 6.17 of the ADA Report.

Key aspects of the Revised Project that may have the potential to result in visual impacts include:

- continued extraction within the West Pit and expanding extraction within the proposed East Pit
- emplacement and stockpiling of overburden associated with minor landform changes including additional noise bunds ranging between 4 and 8 m in height
- product stockpiling within the southern Stockpile Area, with ballast stockpiles of to 8 m in height
- additional noise mitigation walls along the internal haul route and the rail siding, of approximately 4 m in height
- construction of a new main access road and intersection off Dungog Road
- continued use of night lighting at the Processing Area
- progressive rehabilitation which may be associated with views of mobile plant and equipment and regenerating vegetation.

The updated visual analysis confirmed the findings of the VLIA for the Original Project, that is that views of the quarry are limited to the west, from residential properties along Station Street and from elevated locations along Gresford Road (refer to Section 6.17 of the ADA Report). These views are typically filtered by vegetation or undulating topography.

The new access road off Dungog Road would be a new feature with visibility from road users and private residences in the vicinity. The new access road will be in keeping with the existing road infrastructure and is not expected to have a significant impact on the visual amenity of road users or private residences in the vicinity.

6.1.12 Rehabilitation and Final Landform

Issues relating to rehabilitation were raised in 11 community submissions.

Rehabilitation

Quarry needs to be held more accountable for the rehabilitation of the site. Once a stage is completed it needs to be rehabilitated there and then move onto the next phase. Too many mines and quarries leave it to when they close and they on-sell the problem to someone else. They need to have funds for the rehabilitation put aside in a bond with a separate body. The funds in trust needs to be the future value of the rehabilitation, not what it costs now, otherwise even with some inflation it's not going to be enough. S-23071177

I am concerned that the plan for rehabilitation of the Martins Creek Quarry site is unclear and lacking a timeline - at the cessation of quarrying activities? No plan until 3 years prior to cessation?... It is imperative that Daracon show evidence of any rehabilitation that is already being undertaken at the quarry site and ensure that there is ongoing and regulated rehabilitation so that the community is not left with this blight on our environment. S-23119599

The trees that they use MUST be established trees. Not saplings. In Japan trees are required to be relocated, not turned into wood chips. The quarry should be required to do this. It should be required to replant 21ha of trees BEFORE they remove the existing plants, and like for like. S-23071177

Daracon is committed to the effective rehabilitation and closure of the quarry at the cessation of operations. The overarching principles which apply to the rehabilitation and closure of the Revised Project is the development of a safe, stable and non-polluting landform. This will be achieved through managing quarry assets, operations and rehabilitation on a progressive basis to work towards the final rehabilitation and closure of the quarry.

Rehabilitation at the quarry will consider the existing and future quarry areas to build on existing rehabilitation undertaken and to address long term rehabilitation of quarried and disturbed areas. Key aspects associated with rehabilitation include rehabilitation of the quarry benches and available areas within and surrounding the quarry pit with two final voids to remain at the quarry.

Rehabilitation will occur progressively within the quarry pit and benches as operations progress however, the exact timing of rehabilitation works will be dependent upon on the rate of resource extraction in each area and the final height of each bench. Additionally, any areas surrounding the active extraction and processing facilities, where quarrying is not proposed, will be subject to progressive rehabilitation once it is identified that areas will not be required for ongoing operations (refer to Section 6.19 of the ADA Report). Indicative rehabilitation staging for the Revised Project is shown in Figure 2.4 to Figure 2.9 of the ADA Report.

Whilst a conceptual quarry closure plan will be outlined within the BRMP, a detailed Quarry Closure Plan will be developed approximately three years prior to cessation of quarrying activities. The Quarry Closure Plan will describe the proposed operational and progressive rehabilitation procedures for the remainder of the quarry life and following quarry closure. Several final land use options are available for the quarry. Currently, final land use is focused on promoting the rural landscape by establishing native grassland or exotic pastures in low lying areas whilst focusing on the re-introduction of pockets of woodland species across the benches consistent with endemic vegetation types. As detailed in Section 6.19 of the ADA Report, the final land use will be subject to further investigation during the development of the detailed Quarry Closure Plan three years prior to the cessation of quarrying activities.

A description of the strategies that will be used to rehabilitate the areas disturbed by quarrying operations are provided in the ADA Report. Daracon will consult with relevant stakeholders, including DSC and the CCC, regarding the suitability of the proposed final use as part of the detailed Quarry Closure Plan.

6.1.13 Economics

Issues relating to economic impacts were raised in 228 objecting community submissions. Positive economic impacts were the key theme in the supporting submissions received on the Revised Project.

Economic impacts on local tourism and businesses

The company barely employs anyone from this area and the community has no benefits from their operations. None of the profits are invested in this neighbourhood. The only people profiting from the operation is the company itself. S-23119631

Paterson, Martins Creek, Bolwarra, Bolwarra Heights, East Maitland and Lorn are all small settlements frequented by tourists and cyclists. They are not only significant in their own right, but are also on the route to Barrington Tops. Their reputation as places of safe recreation is at risk to be further ruined by noise, dust and truck movements associated with the quarry. Having the proposed truck movement would prohibit safe cycling, enjoyment of historical villages, recreation in nearby parks and cafes; it would subsequently lead to big financial losses for those in tourism industry. S-23068206

Crippling effects on local businesses due to access and parking issues and loss of weekday tourism. S-23136376

Downturn in local businesses trading in goods and services, hospitality, tourism, wedding functions along haul roads. S-23520260

Impacts on local and regional tourism have not been assessed. S-23222081

They claim there will potential economic benefits to the region and the state through employment, procurement and business opportunities. This is a lie. The local shops will not benefit as the trucks do not stop and shop. In fact the noise level is so great that customers can no longer sit outside to eat and the company does not employ locals. There will be zero business opportunities as the impact on the town is so negative that businesses will suffer. S-24638774

The impact to the Paterson village itself and Main Street residents and shops, post office, service station, IGA supermarket, local doctor and pharmacy and local cafes - all these services are essential services to the community where elderly people reside, there will be loss of tourism, noise pollution, dust pollution, unsafe road crossing options and unsafe parking issues such as getting in and out of cars safely. When the trucks were previously operating it was very unsafe to park and enter/exit your vehicle to access local businesses on the main street, and cross the road safely. S-24639990

As outlined in the ADA Report, Daracon has committed to a number of key project design changes and additional mitigation and management measures to minimise the Revised Project's environmental and social amenity impacts. As outlined in **Section 4.12.12**, Daracon have attempted to respond to community concerns in relation to potential impacts on local tourism and local businesses through project design changes and mitigation measures.

In terms of improving social amenity within Paterson to limit impacts on tourism, key project changes includes:

- revised product transport arrangements, including:
 - reduced peak daily laden trucks of 140 per day (280 movements) for 50 days per year, otherwise 100 per day (200 movements), with a peak of:
 - 20 laden trucks per hour (40 movements) between 7.00 am and 3.00 pm, Monday to Friday
 - 15 laden trucks per hour (30 movements) between 3.00 pm and 6.00 pm, Monday to Friday
- no road haulage of quarry product on Saturday

- no trucks through Paterson Village before 6.45 am
- increased quarry product transported by rail
- revised operating hours of 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday, and no evening or night operation, apart from rail loading and transportation and necessary maintenance activities.

Community identified mitigation and management measures regarding management of possible impacts have been summarised at **Table 4.10** along with Daracon proposed onsite management strategies for the Revised Project.

Employment

The economic benefits, including potential jobs, would be limited to a very small group of people. S-23068206

The quarry adds very little, even by employment, to the local community. S-22306969

The Revised Project will provide for approximately 120 construction jobs and approximately 22 full time equivalent employees when the quarry is operating at full capacity. In addition, contractors will be periodically engaged for various activities.

While quarries do not typically have high workforce numbers, Daracon will seek to continue to employ and procure from local sources to the greatest extent possible to enhance any economic benefits of the Revised Project in the locality where possible.

This strategy will seek to:

- increase employment opportunities for those within the local community who are interested in pursuing employment with Daracon, by advertising locally
- offer apprenticeships and traineeships to local youth, where possible
- maximise the use of local suppliers in procurement activities at the quarry where feasible.

As outlined in Section 6.14 of the ADA Report, the Revised Project is estimated to provide a potential net benefit to NSW of \$58 million in NPV terms. This net benefit is comprised of \$19 and \$39 million in direct and indirect benefits respectively.

In addition to direct employment, the Revised Project will also result in indirect economic benefits.

Supplier benefits are estimated to be \$26 million in NPV terms. Benefits to workers are estimated to be \$12.8 million in NPV terms over the 25-year lifespan of the quarry.

The LEA considers the costs and benefits of the Revised Project to residents of the Lower Hunter region of NSW. The analysis shows an estimated potential net benefit of \$35 million to the region in NPV terms over the life of the Revised Project, well over half of the total benefit estimated to NSW. This is largely driven by benefits to local suppliers, based on information from Daracon that 100% of the inputs to production are supplied from the region. In fact, the net benefit to local suppliers is estimated to be about \$26.2 million in NPV terms. There is an estimated additional benefit of \$9.2 million in NPV terms to local workers over the life of the Revised Project.

Impacts to property values

We also know that real estate values in and around the areas of Martins Creek will drop due to excessive trucks coming and going from the quarry, and feel that if we were to choose to sell our property within the next few years, that the value would be greatly impacted. S-23144546

As the long standing local Real Estate Agent I can state that the marketability and value of the properties all along the trucking haul route were definitely negatively impacted for the many years when Daracon ran trucks above the DA approved daily limit, impacted by the noise and traffic issues resulting from the Martins Creek Quarry trucks, along with the unsightly truck convoys, and property values will again be more severely impacted if the proposed quarry expansion is approved with 25 years of known excessive truck movements. S-24997457

What about property value? S-24857976

Daracons report says property values would not be affected what a load of rubbish. How could this much truck traffic through a small town not affect it? S-25047181

I strongly object to the project given the impact it will have on my local area not to mention the value of my property. S-21330708

We are very concerned about our property value dropping due to quarry extension. S-23068206

As outlined in the ADA Report, the site has a long history of quarrying operations, with the quarry being established in 1914 by the NSW Government Railways for the purpose of supplying railway ballast and other quarry materials to both the NSW railway network and Hunter Valley/Newcastle construction projects. The quarry has therefore coexisted with neighbouring land uses over an extended period with a degree of impact on the amenity of residential receivers. Key elements of the Revised Project have been designed to minimise impacts on residential receivers, including:

- reductions in proposed extraction limits
- reductions to road transportation volumes and peak hourly truck movements
- reductions in operating hours.

As outlined in the SIA for the Revised Project, housing prices

- The average sales price in Martins Creek has increased from \$376,000 in 2013 to \$504,317 in 2020.
- The average sales price in Vacy has increased from \$396,231 in 2013 to \$613,483 in 2020.
- The average sale price in Paterson has increased from \$363,167 in 2013 to \$641,605 in 2019 and fell to \$572,456 in 2020.

According to housing data reported by real estate analysts Property Value (2020), over the last 12-month period ending April 2020, Bolwarra Heights had the most houses sold with 58, followed by 24 in Bolwarra, 17 in Paterson, 11 in Vacy, and 4 in Martins Creek. Property Value also reported the following figures as of April 2020:

- the highest median sale price was \$750,000 in Paterson with an average of 77 days on the market. In the last 12 months there has been a 33.1% median price decrease, which coincided with limited quarry operations

- Vacy had a second highest median sale price with \$655,000 and the highest average days on the market of 92 days. Median house price has increased by 21.7% in the last 12 months
- the median sale price in Martins Creek was the lowest of the study communities at \$400,000 with an estimated 15.3% increase in median sale price
- sale prices have also increased in Bolwarra by 10.3% according to Property Value (2020). The current median sale price is sitting at \$533,000 with an average of 76 days on the market
- Bolwarra Heights had a median sale price with \$653,000 and an average of 87 days on the market. Median house prices have increased by 3.4% in the last 12 months.

Due to the low number of sales recorded in 2020 for Vacy, Paterson and Martins Creek average price is heavily influenced by individual property prices.

There are a wide range of factors which affect property values including broader regional market trends. In regard to impacts associated with the Revised Project, the assessments have found that in most surrounding areas there will be minimal changes to impacts.

Given the long history of quarrying in the area and predicted impacts, adverse effects on property values are considered unlikely.

6.1.14 Cumulative Impacts

Issues relating to cumulative impacts were raised in 26 community submissions.

Insufficient consideration of cumulative impacts

Umwelt and Daracon have completely ignored the cumulative impact on the road network from the recently approved Brandy Hill Quarry expansion. It is calculated that approximately an extra 54,688 trucks per year (assuming a MCQ approval) will snake their way to the New England Highway. S-23203146

It also appears on my reading of the submission that the traffic report does not include the cumulative effect of the trucks joining Paterson Road at Bolwarra Heights from the recently approved Brandy Hill Quarry. If this is the case the report included is obsolete. S-23212452

Cumulative impact of already approved Brandy Hill quarry and Martins creek quarry on Bolwarra and adjacent suburbs would be devastating. S-23068206

Revised assessments have been undertaken for the Revised Project which assess cumulative impacts where relevant. Cumulative assessments include potential interactions with Brandy Hill Quarry which has subsequently been approved since the Original Project was originally assessed.

Cumulative impacts in regard to key aspects have been considered and assessed in each of the specialist studies, as presented in Section 6.0 of the ADA Report, as relevant.

6.2 The Revised Project

Issues relating to the Revised Project design were raised in 478 community submissions.

Project design – road product transportation

280+ truck movements per day is not a suitable proposition for residential roads and suburbs. S-22672300

I understand the Daracon Expansion proposal will put 280 extra truck movements a day onto rural roads which were never intended for this sort of traffic and certainly are not maintained to be able to accommodate it. These trucks will go through a village where PEOPLE live, work, shop and attract tourists for the country town ambience. S-23304084

The roads through ALL the proposed road transport route are not built for the current volume of traffic, let alone bearing the weight of 500,000 tones per annum. S-23379207

I understand at the time of high output in 2016-17 that the output of the quarry was similar to that proposed in the current submission S-23119504

The volume of traffic to route 2 (Butterwick Road to Clarencetown Road) is undefined and cannot be controlled by Daracon. S-25038964

Daracon initially proposed an additional haul route, to the east via Paterson Road/Butterwick Road/Clarencetown Road/Brandy Hill Drive/Seaham Road to connect with the Pacific Highway at Raymond Terrace. This option further proposed a daily peak of 215 laden trucks (430 movements) and 40 laden trucks per hour (80 movements).

Due to ongoing concern from the community and local stakeholders in relation to traffic and transport, alternative road haulage options and volumes were investigated.

The Revised Project now proposes only utilising one primary haul route being MR101, with Haul Route 2 no longer proposed as a primary haul route. Other roads would only be used to service local projects on a campaign basis on or directly accessed from the route. In addition, the Revised Project's daily peak laden trucks per day is proposed to be a peak of 140 per day (280 movements) for 50 days per year, otherwise 100 laden trucks per day (200 movements) and a peak of 20 to 15 laden trucks per hour (40 to 30 movements depending on time of day) to meet campaign requirements to service large regional construction projects, from time to time. In response to community concerns, Daracon have also reduced the frequency of truck movements to a peak of 15 laden trucks per hour between 3.00 pm and 6.00 pm. The reduction to 15 laden trucks per hour between 3.00 pm and 6.00 pm aims to further ameliorate traffic impacts during higher activity in Paterson village and interactions with school finishing times. The average daily truck movements associated with the Revised Project will be much lower than the peak, and the number of days this is likely to occur will also in effect be capped by the 500,000 tpa limit for transport by road.

Project design – rail product transportation

The North Coast Railway line which passes within metres of the Martins Creek Quarry has the potential to easily accommodate the additional freight movement and it would be far more environmentally sustainable with reduced truck movements. S-23358216

Why do they propose to use TRUCKS? There is a train line that runs right next to it. This is the most efficient and environmentally friendly method of transporting quarry products. 100% of the transport MUST be with trains. S-23071177

There has been no explanation why the quarry can't use the railway line instead of transporting so much volume by road. S-23119979

The application involves 31,000 truck movements per year on small two way roads incapable of supporting such movements when the alternative of rail only is available for consideration by Daracon who to my knowledge have refused to acknowledge such an alternative. S-22716024

All because Daracon doesn't wish to pay an extra \$1.00 per tonne to transport their product by rail. S-23190024

The viability and timing of using rail presented in the revised application is based on a commercial viability for Daracon, not on reducing the impacts on the community. The commercial viability of a proposed operation is not the responsibility for the community or the Department. It is the proponent's responsibility to operate in a manner consistent with legal requirements in a socially responsible manner. S-23222081

The Revised Project seeks to transport up to 500,000 tpa via road with the remaining product transported via rail. If the market permits, Daracon is committed to increasing the quantity of quarry product by rail, up to a maximum of 1.1 Mtpa. Quarry products will be transported via rail in response to market demands.

There is direct rail access from the quarry onto the Main Northern railway line where the trains are directed by the ARTC Control Centre at Broadmeadow.

Currently, the quarry is constrained by available train paths on the network and train loading hours which limits movements to one train per day. To alleviate some of these constraints, Daracon is seeking approval to load trains 24 hours per day and to construct an extension of the existing rail spur within the East Pit (refer to **Figure 1.2**), to enable the loading of trains, typically either 400 or 600 m in length (although train lengths vary). The rail spur will be extended by approximately 360 m and is planned to be constructed by the end of Year 4 of the Revised Project.

Based on the access to the Main Northern railway line during the day and the train cycle time into the greater Sydney Region it is anticipated that Revised Project would normally load a maximum of two trains over a 24 hour period, one during the day and one during the evening/night time period. The third train loading during the evening or night time period would only be required occasionally to meet peak demands or to adapt to rail line capacity availability, track closures, breakdowns, etc.

The opportunity to avoid any road haulage of quarry product, and transporting all quarry product by rail, has often been raised during the community engagement process. Whilst Daracon now propose to significantly reduce the proportion of quarry product delivered by road, it is not feasible to continue quarry operations with no road haulage and have all the quarry product transported by rail. Recently, Daracon have identified a rail receival facility in Western Sydney, which is feasible to use for delivery of quarry product to supply major construction industry demands for the Greater Sydney Metropolitan Area.

On this basis, approximately 600,000 tpa (54.5%) of the proposed total quarry production of 1.1 Mtpa, will be transported by rail. Subject to market demands, Daracon may increase the amount transported by rail, on a campaign basis, within the 1.1 Mtpa of total quarry product.

Whilst Daracon are committed to continuing to investigate opportunities to minimise the need for road haulage to supply regional markets, it is not currently feasible. The ability of the quarry to increase rail distribution of aggregates within its current distribution area is limited by the lack of suitable rail unloading facilities, large number of product destinations and types, short haulage distances and the fact that a number of competing quarries use the road system as a more commercially viable and flexible supply to service the same markets.

Despite extensive investigation (refer to Appendix N of the ADA Report), there is no current feasible option to use rail logistics to supply the local and regional market for the Revised Project.

In order for the quarry to be commercially viable, it must be able to service the local and regional construction material markets.

A number of submissions quote that it would only cost an additional \$1.00 per tonne to transport product by rail rather than by road. It is unclear how this cost has been determined but it is incorrect.

Project design – feasibility of a distribution facility

I have read carefully the 'Review of Quarry Products Distribution by Rail and Rail Logistics Options for Martins Creek Quarry' prepared by Plateway Pty Ltd in May 2021 (Appendix N to Daracon Requested Amended DA_07/09/2020). This Review indicates that rail transport of the entire 1.1 mt would indeed be possible, but that it would require significant investment by Daracon and would be subject to ballast market pressures. Over a 25 yr period these issues would be resolvable. S-21329457

That Quarry product (can be larger as mined, or primary crushed) be transported by Rail from Martins Creek to Bloomfield Collieries at East Maitland into their Rail Loop and unloaded, stocked and able to be loaded into Road Haulage Trucks. S-23466167

Any increase in the Quarry output must only be transported by rail to an industrial zone for distribution by truck to construction sites. The current operation has good access to rail and there are plenty of rail serviced distribution areas near highways for example at Hexham. S-23436783

Suggestions for the use of a number of sites for a distribution area have been provided in community consultation and some submissions. As outlined above, despite extensive investigation (refer to Appendix N of the ADA Report), there is no current feasible option to use rail logistics to supply the local and regional market for the Revised Project.

A rail served aggregate distribution hub location would require:

- a facility to unload aggregates from bottom dump wagons which can discharge at rates of over 1,000 t per hour
- the ability to stack and store products in several different segregations
- rail access to and from the facility without impacting through rail services
- road access to the freeway network

- suitable buffers from residential zones and neighbours which allows for 24 hour a day seven days a week operation
- bulk storage areas for each segregation of product for a minimum of one weeks (produced/limited/typically 25,000 t). Note that demand is weather dependent, but the rail logistics supply chain is not, leading to the facility risking becoming stock bound during periods of wet weather.

The assessment completed indicated that there are currently no suitable and existing operating rail receipt terminals for aggregate in the Hunter Region.

Whilst rail transport has a clear operating cost advantage over road transport for long haul operations, the capital cost of the rail receipt plant and the inability to achieve multiple cycles in a 24 hour period (due to rail network congestion, passenger priority and loading/unloading site operating restrictions) makes rail transport expensive over short distances with small volumes.

In order for the quarry to be commercially viable, it must be able to service the local and regional construction material markets.

Project design – Paterson should be bypassed

The only option would be for a complete bypass of Paterson township. S-23109019

The current proposal of 280 truck movements per day through Paterson is unacceptable! The only options are to build a bypass road or transport all material by rail. S-23119599

If Daracon can commit to a proper road diversion for their fleet of trucks that would bypass the local towns, I think this discussion could then be had. I do not feel this is unreasonable given the scope of Daracon's business in construction. Further use than the bare minimum of railing should also be enforced. S-25081720

Other operating quarries throughout the state have gone out of their way to work responsibly, creating safe and alternative routes for haulage. This should be the way with Daracon. S-22993494

The potential to bypass Paterson has been raised during stakeholder engagement and community submissions for the Revised Project. Whilst there was previously a road corridor for a bypass allocated in DSC's local planning provisions, Daracon was advised in 2014 that DSC no longer supported that proposal. The land previously allocated as a bypass through the outskirts of Paterson have been developed for other purposes.

A further option considered by Daracon was using Martins Creek Road for empty trucks and the Paterson route for loaded trucks. This was initially investigated and determined that Martins Creek Road was not feasible due to physical and engineering constraints.

While it is understood that a bypass would be a preferred option for parts of the community, there is no current viable option for a bypass route for Paterson. It is noted the new site access effectively bypasses Martins Creek village and removes trucks from a local road to a regional road.

Project design – Paterson intersection changes

The "improvements" at the King and Duke St intersection will involve some uptake of existing pedestrian space and bring the traffic even closer to two valuable heritage assets. S-23119504

The corner outside my home (the post office) is apparently an issue. I'm told that it will be modified to allow a faster and easier flow for trucks driving through, REALLY?? Is that a solution? To move trucks even faster around the busiest intersection in town where people cross constantly between the post office - cafe - service station - B&B - chemist - doctors clinic - pub and hairdresser. All of those business are within 20 meters of each other on that very corner where 280+ trucks want to rattle through our village at a speed greater than they can now! S-23112066

In relation to the King and Duke Street intersection, Daracon are proposing to:

- relocate the existing driveway on the north side of the intersection slightly west to improve the space allocation for parking on either side of the driveway and improve carparking capacity along this northern kerb line
- relocate existing direction and hazard signage on northern side of intersection
- refresh the dividing line marking through the intersection
- minor realignment of the footpath, kerb ramp and kerb and gutter on the south-western corner of the intersection to accommodate the design vehicle turn path
- relocate existing 'No Stopping' sign in front of Telstra phone box to power pole adjacent to Post Office driveway, remove existing single carparking space to accommodate design vehicle turn path.

There is no loss of on-street parking associated with the proposed upgrades.

Daracon considered alternative design options for the proposed upgrade of King and Duke Street intersection in Paterson. This included Daracon's initially preferred option with the following:

- physical separation by means of raised median to provide physical guidance for vehicles to reinforce traffic manoeuvre around the bend and traffic island on King Street
- pedestrian crossing on King Street, providing pedestrian linkage at the intersection
- off street parking lot with ten additional parking spaces, on Lot 3 DP 758830.
- Feedback from the community, particularly during the Traffic CAF was that the proposed design including a raised median in the road was not desired and therefore should not be considered. Further there was no alignment in the Traffic CAF feedback on:
 - the locations of pedestrian crossings or even the utility of inclusion of pedestrian crossings as part of road enhancements
 - Daracon's offer to establish off-street parking.

During one of the Social CAF sessions, there were a number of stakeholders that supported the inclusion of a pedestrian crossing in the design, and considered that the option of additional off-street parking would be beneficial given current parking constraints in Paterson Village, if the Revised Project was approved.

At this stage Daracon propose to proceed with the proposed option (as outlined in Section 2.8.2 of the ADA Report), subject to the outcome of further discussions with DSC on road maintenance and VPA matters.

Project design – new access road

The proposed intersection of Dungog Rd and the proposed new quarry entry road would be dangerously located on a windy section of road. S-24901345

A new site access road is proposed that will allow for direct vehicle access between the quarry and Dungog Road, to the north of Grace Avenue. This proposed new access involves a bridge crossing over the North Coast rail line. Once this new access has been constructed, all heavy vehicle movements will be via this new access. The existing access on Station Street will remain as per the current layout and will be maintained as a secondary access for emergency or unplanned disruptions only. As part of the Revised Project, the design and timing for the proposed new access road has been refined.

More specifically, the proposed new site access would involve:

- constructing a diverge taper and left turn lane from Dungog Road into Main Site Access road (AUL intersection)
- road widening on both sides of Dungog Road to accommodate a channelised right turn intersection (CHR) from Dungog Road into Main Site Access road and associated line marking and delineation
- for vehicles exiting Main Site Access road, providing storage for one design vehicle turning right onto Dungog Road (northbound) and new acceleration lane on Dungog Road (southbound)
- removing the existing redundant line marking on Dungog Road
- modification of existing property accesses on western side of Dungog Road
- providing new safety barriers and drainage infrastructure.

The proposed new access road will be approximately 7 m wide, sealed up to the vehicle wheel wash bay (refer to **Figure 6.2**) and regularly maintained by Daracon throughout the life of the Revised Project. The wheel wash will be constructed on the outbound truck path for dust suppression and to reduce tracking of material onto public roads.

It is proposed to construct the new site access road subject to gaining relevant approvals from DSC for the intersection with Dungog Road under section 138 of the *Roads Act 1993*, in addition to the relevant ARTC approval for construction of the bridge and to schedule the construction window to complete the railway bridge.

The new access road will also require the construction of a new intersection on Dungog Road (refer to **Figure 6.2**). The new intersection will be designed and constructed in accordance with Austroads Standards plus in consultation with DSC and will allow for a sheltered right turn lane on Dungog Road to enable the new access to operate in a safe and appropriate manner.

Daracon have had ongoing discussions with both DSC with respect to the design of the intersection and ARTC regarding the location and concept design plans for the bridge.



Image Source: Google Earth (Aug 2018)
Data Source: Daracon (2020)

Legend

- ▬ Project Area
- ▬▬▬ New Access Road

FIGURE 6.2

Proposed New Access Road

Project design – operating hours

The out of business hours train loading times S-25074544

An additional disturbing aspect of the Application is the plan to do equipment maintenance and loading of trains at night. Both these operations must result in objectionable noise during the night hours. Equipment maintenance will entail test running of equipment to ensure production readiness and loading of trains using front end loaders and the shunting of trains as planned can only result in an increase in noise level. S-24898209

Daracon is seeking approval for the following operating hours:

- Quarry operations from 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday.
- Between 6.00 pm and 7.00 pm, provision for up to ten unladen Daracon trucks to return to the quarry for loading and parking at the quarry overnight, in readiness for departure from 7.00 am the following morning. (In the case of trucks loaded on Friday between 6.00 pm and 7.00 pm, departure will be no earlier than 7.00 am Monday morning).
- As an additional mitigation measure, blasting of quarry material will only occur between 11.00 am and 3.00 pm on Monday to Friday, with no blasting on Saturdays.
- No evening or night operation and no operation on Sundays or public holidays, apart from the following activities which may occur 24 hours seven days per week:
 - rail loading and transportation
 - necessary maintenance activities and/or environmental management controls, including vehicles/trucks moving in and out of the quarry for maintenance purposes as required.

Based on the access to the Main Northern railway line, Daracon may require to undertake train loading during the evening or night time period. While this is not the preferred option, Daracon are highly constrained by availability to the railway line. Train loading during the evening or night time period would only be required occasionally to meet peak demands or to adapt to rail line capacity availability, track closures, breakdowns, etc. As outlined in **Section 3.1**, evening and night time rail loading would result in a number of significant exceedances of the PTNLs. In response to the EPA submission, Daracon have further considered reasonable and feasible mitigation measure that could be implemented during the period prior to the new access road being constructed. As discussed in **Section 3.1**, the installation of a noise barrier, along with other operational measures, could further mitigate noise impacts during the first 4 years of the Revised Project until the new access road and rail loading facility are constructed.

Some maintenance activities and/or environmental management controls, including vehicles/trucks moving in and out of the quarry for maintenance purposes may also be required during the evening or night tie period. These activities would be relatively minor and undertaken on an as needs basis.

All proposed activities have been assessed in the ADA Report, including the potential noise impacts associated with evening and night time maintenance and rail loading.

Project design – timing of activities

The proponent indicates an intention to undertake certain accommodation works but the timing of these facilities seems to be rather protracted e.g. year 4 to construct the extended rail siding to enable transportation of product by rail “subject to market demand”, year 4 to construct the alternative quarry access road requiring a bridge over the north coast railway line. Additionally, in-quarry noise and dust abatement facilities are also not to be undertaken before quarry operations recommence. This delay in providing accommodation works prior to operation suggests a lack of commitment. S-25819152

Daracon is committed to undertaking key proposed activities in a timely manner, however there are some components that require additional design and approvals from DSC, ARTC or TfNSW. Accordingly, Daracon has been conservative in their timings to allow for approval processes.

As outlined in the ADA Report, the construction of the access road, including the new intersection and rail bridge will require the longest duration and be subject to additional design and approvals processes. Subject to ARTC and DSC approvals for rail bridge, and intersection construction, respectively, it was expected that the new access road will be constructed and operational by the end of Year 4. In response to community comments, Daracon commits to constructing the new quarry access and railway bridge within 2 years of project approval, subject to obtaining relevant secondary approvals from ARTC and DSC within 12 months of project approval.

Daracon have been in consultation with DSC and ARTC and will seek to gain relevant approvals as soon as possible following development approval. Notwithstanding, there will be a period where access continues along Station Street and Grace Avenue. Intersection upgrades and the Gostwyck Bridge approach upgrade will also be subject to DSC approval, under the Roads Act.

For clarity, the proposed timeframes for key activities associated with the Revised Project are outlined in **Table 6.2**. While Daracon will make all attempts to meet these timeframes, this will be contingent on relevant approvals as outlined above.

Table 6.2 Proposed Timing for Key Project Components

Key Feature	Timing (subject to relevant approvals)
Refuelling station	Within 12 months of development consent
Site Access and Railway Bridge	Within 2 years of development consent
New weighbridge, weighbridge office, carparking and vehicle wheel wash	Within 2 years of development consent
Rail Spur Extension	Within 4 years of development consent – contingent on additional quarrying to allow extension
Noise controls	Within 2 years of development consent
Dungog Road and Gresford Road intersection	Within 12 months of development consent
King Street and Duke Street intersection	Within 12 months of development consent
Gostwyck Bridge approach	Within 12 months of development consent
Gostwyck Bridge kerb	Within 12 months of development consent

6.3 Issues Beyond the Scope of the Revised Project

Issues relating to the proponent were raised in 301 community submissions.

Previous Court proceedings

Daracon continued to increase extraction amounts with no attention to the rules governing the operation of Martins Creek Quarry causing huge distress to residents in the vicinity of the quarry and along the haulage routes. S-23119599

Daracon underwent a significant Due Diligence process before entering into leasing arrangements to operate the quarry. It would have been very clear to Daracon that the development conditions were not being met by the previous operators. Notwithstanding this, Daracon entered into the leasing arrangements and developed a business model based upon an operation which was not valid at law. Further, Daracon significantly developed the quarry into adjacent lots and ramped up extraction activities to a high level never seen before. Almost all of operation output was and still is transported by road. S-24891206

Daracon's SSDA largely reiterates the proposal which was rejected by the courts, which rejection was upheld on appeal S-24638304

As outlined in **Section 1.2**, in 2015 DSC brought action in the LEC against the lessee and the proponent for a breach of the EP&A Act. DSC claimed that operations at the quarry were contrary to the 1991 development consent. The LEC made declarations and orders restraining the respondents from carrying out certain activities at the quarry. The LEC decision was appealed by the proponent to the Court of Appeal. The Court of Appeal did not make the same orders as the LEC, but did find that some operations at the quarry were not authorised by the 1991 development consent. The effect of the Court of Appeal judgment was that the quarry operations be restricted to the Approved Development activities, comprising:

- winning material primarily for railway ballast
- extraction only from Lot 5 DP 242210 (no extraction from Lot 6 DP 242210)
- total processing on that part of Lot 1 DP 1006375 that formerly comprised Lot 2 DP 524511 of no more than 449,000 tpa
- not greatly more than 30% of total production transported by road per annum
- total production limited by the terms of the EPL to 500,000 tpa.
- Since 24 September 2019, the quarry has operated within the parameters deemed as approved by the Court of Appeal.

Since the change to quarry operations, Daracon have considered community input and have completed further project feasibility investigations, detailed quarry design refinements and proposed additional mitigation measures. With the agreement of the Planning Secretary, Daracon submitted the ADA, supported by the ADA Report (Umwelt, 2021).

Daracon acknowledge that relationships within the communities around the quarry have been impacted by the previous quarry operations. Daracon are committed to operating the quarry in accordance with relevant regulatory approvals.

Daracon's reputation

It must be noted that Daracon have a long history of flouting rules and restrictions placed on their operations. This flagrant disregard to the community and the affected stakeholders clearly show that Daracon have no interest in working together. S-23028508

I have experienced the complete disregard this company has shown over the years to any conditions imposed on its operation. The company has seen fit to spend millions of dollars on defending the indefensible even up to the Supreme Court and yet Daracon will not properly engage with the residents, nor properly address their concerns. There are so many world-class gold standard quarries in operation within NSW that residents concerns could be addressed, and yet Daracon seems bent on expansion at the lowest possible cost and with no regard for the residents along the haul roads. S-23053000

Daracon can not be trusted and treat this latest proposal as tick and flick exercise until they get the verdict they want. Why can't they accept the law and the rulings handed down. Something smells here. S-23119529

Daracon does not have social licence and public trust. It has operated illegally for years with an absolute and brazen disregard for the communities it affected. S-23068206

Daracon acknowledge that relationships within the communities around the quarry have been impacted by the previous quarry operations. Daracon is committed to investing time and resources to rebuild trust within the local community. Daracon will continue to consider the local community as part of their decision making processes at the quarry now and in the future. This is demonstrated by the changes made to the project design as a result of the ongoing consultation with the community.

Daracon is committed to open, respectful and effective communication with local communities in all regions in which we operate. This can be clearly demonstrated through numerous examples across the business, including other active quarry operations.

The Revised Project is a key element in building strong relationships moving forward. The complexity of legacy consents under which the quarry was operating for many decades before Daracon took control has led to confusion and frustration for all parties. Daracon acknowledge that in this complex environment, some of their operations were characterised by poor decisions and practices that negatively impacted the local communities, resulting in residual low levels of trust.

The Revised Project seeks to modernise the consent for the quarry operations. Should the Revised Project be approved, the conditions of consent will clearly specify project requirements and obligations for the quarry and its associated operations. As part of the approval conditions, Independent Environmental Audits will be required to evaluate compliance with the consent conditions and assess the environmental management and impact of the development. These audits will be publicly available on the Martins Creek Quarry website.

To improve the relationship with the community and other key stakeholders Daracon has already committed to the implementation of a number of strategies.

In 2020, the company engaged a Community Liaison Representative with the objective of re-establishing relationships with local landholders and other key stakeholders. It is Daracon's intent that this role will continue should the Revised Project be approved with the Community Liaison Representative to be responsible for the ongoing delivery of a Community Engagement Program that includes mechanisms allowing for the sharing and exchange of information between Daracon and its stakeholders on a regular basis.

Further, Daracon is committed to the development and implementation of a SIMP which will include appropriate monitoring, reporting and review mechanisms and a process for making information regarding ongoing company activities, monitoring results and associated information publicly available in an open and transparent way. While such information has been available in the past, both the SIMP and supporting Community Engagement Program will provide a structure for this to take place.

As a component of the ongoing Community Engagement Program, Daracon has also committed to re-establishing and operating a CCC in accordance with the DPIE's Community Consultative Committee Guidelines: State Significant Projects (2019). Daracon will work with the Independent Chairperson establish the necessary framework to ensure the transparent operation of the CCC to meet its intended objectives.

Daracon is also committed to the implementation of a targeted Community Contributions and Wellbeing Fund. While investment in the community has been undertaken in the past, activities moving forward will be more strategically directed to investment and sponsorship activities that have a focus on:

- mitigating the direct and indirect impacts of the quarry on the local community
- working collaboratively with key stakeholders to focus on sponsorships and in-kind contributions that target impact areas and enhance local values with a focus on the villages of Martins Creek and village of Paterson, and other localities as relevant
- enhancing positive impacts associated with the presence of the operation in the community, e.g. local employment and procurement
- developing projects and programs that are consistent with community needs, values and aspirations
- contributing to local communities and better targeting investment spend locally.

The existing donations and sponsorship program would see a shift towards assessing applications and distribution of donations to community-led initiatives, with a clear set of criteria for assessment of applications with funding criteria aligning with the areas of focus arising from the SIA and identified community needs. This is to be achieved through the development of a Community Contributions and Sponsorship policy that includes funding criteria and a process to determine priorities. Community investment and sponsorships will only be in strict accordance with this policy.

The establishment of funding criteria will involve key stakeholders therefore it is intended that the development of criteria for this investment will be determined in collaboration with the CCC once formed. Having an experienced community relations officer to manage the program will ensure local level insight and an understanding of community needs is combined with the company's existing donations management and administration.

Investments made via the Community Contributions and Sponsorship policy will not replace the responsibilities of government and associated spending under the yet to be finalised VPAs.

Current operations and management

In recent months the trucks on Martins Creek Road going past the front of my property have increase dramatically, they start as early as 5:45 am and can be up to four or five trucks in a row, with a constant flow of trucks throughout the day. I find this to be noisy, disruptive, disturbing and unsafe and at times unbearable. S-25038961

On going Blasting, and vibration, can clearly be heard and felt, the effects of blasting can be heard and felt in Wood glen close. S-24971178

I noticed this dust cloud [reference to photo] over the quarry cloud over the quarry when I was driving home, so stopped and took a series of photos from above the quarry. In just the short time I was there the effect of the dust on my nose and throat was quite unpleasant. S-24971178

The quarry does not run trucks along Martins Creek Road, nor does it intend to do so as part of the Revised Project. This is also enforced by the Code of Conduct. Daracon have been operating the quarry within the parameters of the Court of Appeal order since September 2019, and previously to that on an Interim Environmental Management Plan that was regulated by the LEC. Approved operations includes blasting and road transportation within prescribed limits.

Monitoring has been undertaken in accordance with currently approved requirements. There has been no exceedances of any relevant criteria during the past 12 months.

6.4 Procedural Matters

Issues relating to the planning process were raised in 136 community submissions.

Status as a State Significant Development

It is somewhat ironic that the Daracon proposal is being considered in the context of a State Significant project. The Martins Creek quarry was not considered to be significant by State authorities when it was sold by the former State Rail Authority (SRA). S-24759327

There are alternative hard rock quarries available making Martins Creek Quarry not a State Significant resource. S-24903687

I do not consider this application to be a State Significant Proposal, as there are many suitable quarries in New South Wales that can provide such material. Or is this to circumvent taxpayer opposition to this unacceptable application. S-22672300

The EP&A Act is the primary legislation governing environmental planning and assessment for NSW.

Section 4.36 of the EP&A Act outlines what development constitutes a State significant development (SSD), being:

4.36 Development that is State significant development

*(1) For the purposes of this Act, **State significant development** is development that is declared under this section to be State significant development.*

(2) A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.

(3) The Minister may, by a Ministerial planning order, declare specified development on specified land to be State significant development, but only if the Minister has obtained and made publicly available advice from the Independent Planning Commission about the State or regional planning significance of the development.

Clause 7(1)(a) of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) declares development for the purposes of extractive industry with a resource in excess of 5 Mt as SSD. The quarry meets this classification and as such has been declared a SSD. There is no discretion in whether a project is considered SSD and a proponent cannot elect to be a SSD without triggering the requirements of Section 4.36 of the EP&A Act.

Application of the *Environmental Planning and Assessment Act 1979*

Despite Umwelt's statement, I do not see how this proposal meets the aims of the EP&A Act, reproduced below, in particular sections 1.3(a), (e) and (j). S-23145712

I reference the concept of Precautionary Principle as defined by Justice Preston whereby he contended that it is “triggered by the satisfaction of two conditions precedent: scientific uncertainty as to the nature and scope of the threat of environmental damage”. The ticking of technical boxes to show compliance does not meet this criteria. S-25819152

The objects of the EP&A Act are guiding principles that need to be considered by consent authorities when making decisions under the Act. The objects of the EP&A Act are reproduced in full below.

- (a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
- (b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
- (c) to promote the orderly and economic use and development of land,*
- (d) to promote the delivery and maintenance of affordable housing,*
- (e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
- (f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
- (g) to promote good design and amenity of the built environment,*
- (h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*
- (i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,*
- (j) to provide increased opportunity for community participation in environmental planning and assessment.*

The Revised Project has regard to the objects of the EP&A Act, where applicable.

The environmental, social and economic impacts of the Revised Project have been identified and subject to a detailed environmental assessment based on:

- assessment of the quarry characteristics (existing environment)
- historical/actual knowledge and data from previous and recent operations and surrounds
- focused consultation with relevant government agencies
- extensive engagement with local community and other stakeholders
- environmental and social risk analysis
- application of the principles of Ecologically Sustainable Development (ESD), including the precautionary principle, intergenerational equity, conservation of biological diversity and valuation and pricing of resources
- expert technical assessment.

The key issues identified were subject to comprehensive specialist assessment to identify and assess the potential impacts of the Revised Project on the existing environment and community. The results of these assessments are detailed in the ADA Report.

The detailed impact assessment undertaken for the Revised Project concludes that with the implementation of feasible and reasonable mitigation measures, the proposal can proceed within acceptable environmental standards. This is largely driven by the project design changes outlined in **Section 1.1**, in particular the reduced extraction limits and the revised operational hours and truck movements. Furthermore, the impacts of the Revised Project have been kept to a minimum through:

- obtaining a detailed understanding of the issues and impacts by extensive scientific evaluation and stakeholder engagement
- a thorough assessment of project alternatives based on consideration of maximum resource recovery efficiency developed from detailed geological exploration, engineering design and detailed analysis of potential environmental and community impacts
- active engagement with stakeholders, including the neighbouring community, to identify key concerns and issues early in the Revised Project design process
- project parameters for the Revised Project have been designed around the mitigation of potential amenity impacts, particularly traffic, noise and air quality impacts, as these are recognised as key stakeholder concerns
- commitment to proactive and appropriate strategies to avoid, minimise, mitigate, offset or manage a range of potential environmental impacts (refer to **Appendix 2**).

The Revised Project has been assessed against the principles of ESD as required by the EP&A Act. This assessment has indicated that the Revised Project is consistent with the principles of ESD.

The EP&A Regulation defines the precautionary principle as:

‘if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

3. i. *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*

ii. an assessment of the risk-weighted consequences of various options.

In order to achieve a level of scientific certainty in relation to the potential impacts associated with the Revised Project, the ADA Report has undertaken an extensive evaluation of all the key components of the Revised Project. Detailed assessment of all key issues and necessary management procedures has been conducted and is comprehensively documented in the ADA Report.

The assessment process has involved a detailed study of the existing environment (refer to Section 6.0 of the ADA Report), and the use of engineering and scientific modelling to assess and determine potential impacts as a result of the Revised Project. These models have been calibrated using data gathered from the previous quarrying operation (e.g. noise, air, water and blast monitoring data) to ensure the models are robust and appropriately characterise the Revised Project, allowing the impacts to be predicted and evaluated. To this end, there has been careful evaluation to avoid, where possible, irreversible damage to the environment.

The decision-making process for the design, impact assessment and development of management processes has been transparent in the following respects:

1. Government authorities, landholders potentially affected by the Revised Project, the local community, the Aboriginal community and other stakeholders were extensively consulted during the preparation of the updated environmental assessment (refer to Section 6.0 of the ADA Report). This enabled comment and discussion regarding potential environmental impacts and proposed environmental management procedures.
2. The community has been comprehensively engaged throughout the design and assessment of the Revised Project through a range of mechanisms including face to face meetings, presentations, collaborative assessment forums and community newsletters to inform the Revised Project design and proposed management of key issues (refer to Section 6.0 of the ADA Report), which provided stakeholders with both information and the opportunity to influence the Revised Project outcomes.
3. Daracon will update and implement the existing comprehensive Environmental Management Plan (EMP) for the Revised Project. Through implementation of the EMP, Daracon will seek to implement best practice management. The Revised Project will incorporate the practices implemented and demonstrated to be effective at the recent approved operations. The EMP will incorporate the additional controls committed to in **Section 7.0** of this report.
4. The updated environmental assessment has been undertaken on the basis of the best available scientific information about the Project Area and has been informed by site specific survey, monitoring, modelling and environmental and social assessment. Where uncertainty in the data used for the assessment has been identified, a conservative worst-case analysis has been undertaken and/or sensitivity analysis undertaken to assess a range of potential impact scenarios. Contingency measures have also been identified to manage areas of identified uncertainty. Extensive management and mitigation measures will be implemented, including monitoring programs to measure predicted against actual impacts of the Revised Project (refer to **Section 7.0**), so that contingency measures, if required, can be implemented in a timely and pro-active manner. As noted earlier the recent operations and the management practices implemented provide a high degree of confidence in both impact predictions and the need for and the likely success of proposed management and mitigation measures.

Compliance with the Dungog Local Environment Plan

The proposed heavy vehicle movement goes against the Dungog LEP (Land environmental Plan) which restricts driveway access numbers due to the road safety. S-25079752

Paterson Valley Estate comprising Wakaya Close and View Street are zoned R5 Large Lot Residential. No quarrying is permissible within this zone, so why should we be impacted with blasting, air quality and noise impacts from the quarry. S-24714061

Despite being zoned RU1 Primary Production along with much of the surrounding land, the level of expansion and associated noise, dust, vibration and environmental impacts together with the general day to day activities associated with loading, maintaining of equipment and haulage of quarried material is arguably in conflict with surrounding land uses. Primary Production zoning allows for mining activities but is more broadly accepted as being for primary agricultural purposes such as plant and livestock farming and for timber production. The current dominant land use for land zoned RU1 in the Paterson Valley and areas to the north and east of the quarry site are the relatively low impact activities of cropping, grazing and poultry farming. Large portions of remaining lands are either cleared and vacant or native bush. S-23305787

The ADA Report considers the relevant components of the Dungog LEP.

The Project Area is located within the Dungog LGA and is subject to the Dungog LEP. The proposed extension of the quarry can be defined as 'Extractive Industries' under the provisions of the Dungog LEP.

As outlined in Section 4.2.1 of the ADA Report, the majority of the Project Area is zoned RU1 Primary Production under the provisions of the LEP. Under the provision of the Dungog LEP, extractive industries are permissible with development consent in RU1 Primary Production. A small section of land within Lot 1 DP204377, located towards the southern extent of the Project Area, is zoned RE1 – Public Recreation. This area does not form part of the quarry's operations. It is also outside of the proposed disturbance footprint and will therefore not be impacted by the Revised Project. As the development is permissible with consent, the Minister (or delegate) can approve the carrying out of the Revised Project.

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

The objectives of the RU1 Primary Production zone are as follows:

- 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.

The Revised Project is considered to be consistent with these principles, as the quarry is an economically productive industry and is not likely to impact any rural and agricultural uses in the locality. As discussed in Section 6.2 of the ADA Report, the low soil fertility and slope of the landforms across the Project Area limits the potential for sustainable agricultural use of the land in a manner that is both financially and environmentally responsible. There are no known commercial farming operations in the immediate locality and no agricultural areas would be removed from production or agricultural use as a result of the Revised Project.

The proposed final land use (refer Section 6.19.1 of the ADA Report) is focused on promoting the rural landscape by establishing native grassland or exotic pastures in low lying areas whilst focusing on the re-introduction of pockets of woodland species across the benches consistent with endemic vegetation types.

It is also noted that the Revised Project is within an area which has been subject to quarrying since the early 1910s, with this quarrying activity coexisting with neighbouring land uses for over 100 years. The Revised Project seeks to maximise resource recovery from an existing operational quarry, limiting the potential for conflicts with other land uses.

The surrounding land zonings are not directly relevant for the permissibility of a project. The Extractive Industry SEPP however does require the consideration of the compatibility of proposed extractive industry with other land uses. Clause 12 of the Extractive Industry SEPP states:

Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must—

(a) consider—

(i) the existing uses and approved uses of land in the vicinity of the development, and

(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and

(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and

(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and

(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).

As outlined in the ADA Report, the land surrounding the quarry and along the haul route is primarily small villages, rural residential and small rural holdings. The quarry has historically been used for over 100 years. It is unlikely that the Project Area or area surrounding the quarry would be utilised for alternate land uses based on current land zoning under the Dungog LEP (refer to Section 6.2.4 of the ADA Report). The haul route utilises the existing road network which has historically been utilised for product transportation from the quarry. Traffic and amenity related issues associated with the Revised Project have been assessed (refer to Section 6.3 – traffic and transport, Section 6.4 – noise and Section 6.5 – air quality of the ADA Report).

The Noise Impact Assessment indicates that relevant criteria may be exceeded for some residences adjacent to the Project Area (refer to Section 6.4 of the ADA Report). Other than the potential noise impacts to three residences, the Revised Project is not expected to have a significant impact on surrounding land uses. As discussed in **Section 3.1**, with the implementation of additional mitigation measures, the significant noise impacts associated with rail loading in the first 4 years of operations could be reduced.

The Revised Project is within an area which has been subject to quarrying since the early 1900s, with this quarrying activity coexisting with neighbouring land uses for over 100 years. The Revised Project will expand the historic quarrying activities and extraction of quarry material into new resource rich areas at the existing quarry.

The evaluation of public benefit is provided in Sections 6.13 and 6.14 of the ADA Report.

The assessment of land use interactions is a key component of the updated environmental assessment, with assessments of impacts on other land uses through health and amenity impacts (e.g. dust, noise, blasting, visual) and physical impacts (e.g. water, soils, topography, biodiversity etc.). Following completion of detailed assessments of each of these matters, it is concluded that while some impacts are predicted, the Revised Project is expected to be able to continue to coexist with the surrounding agricultural and non-agricultural land uses in the region.

The Economic Impact Assessment indicates that the Revised Project is estimated to provide a net benefit to NSW, including for the local community.

The Revised Project is therefore considered to be compatible with existing land use of the quarry and broadly compatible with the surrounding land uses. Key elements of the Revised Project have been designed to minimise impacts on surrounding land uses, as detailed in the ADA Report.

Incorrect baseline used for assessments

I must point out that Daracon's 2016 Development application was constantly used by Umwelt as a baseline for comparison when documenting and discussing the amendments promoting the idea that Daracon was reducing the extraction amount, truck numbers etc. This was completely misleading because the 2016 Development Application was only a PROPOSED Development and NOT given any approval. Actually the correct baseline for comparison is the 1991 Consent deemed legal by the Land and Environment Court ruling. In fact Daracon is applying to extract more than 3 times the amount that is currently allowed. S-23119599

Throughout the revised EIS, comparison is made between the original EIS and the current (revised) EIS document. Specifically, tables and figures show a comparison between the original EIS represented by 1.5 million tpa and the current revised EIS represented by 1.1 million tpa and purport to show this as an improvement in impacts e.g. truck movements etc. This is not a true comparison. The original proposal for 1.5 million tpa was never approved. The revised proposal for 1.1 million tpa is representative of the road haulage of product at the peak level of illegal operation in 2013. The only true baseline for comparison purposes is the 1991 DA referred to earlier. Consequently, the comparison should be between 300,000 tpa and 1.1 million tpa, as now proposed, and the differences in tonnage, truck and rail traffic are demonstrated by the table below. S-2581915

The proponent attempts to deceive reviewers by presenting them as background in this way. Deception with the skewed presentation showing only the changes across the 2016 EIS, 2019 EIS and 2021 EIS that present themselves as making major concessions in tonnage. However, they never present the public with the current legal 1991 consent tonnages which is a maximum extraction of 500,000tpa with not greatly more than 30% of material per annum, which roughly equates to 150,000tpa. S-25070760

It determined that the SSD should use the court findings as the baseline for the operation. Daracon (through their agent Umwelt) have ignored the court orders and selected their own baseline and throughout this whole submission not followed the determinations by various judges in both the Land and Environment Court and Supreme Court. S-24936591

The proponent has not completed a comprehensive assessment of the impacts due to the increase in production proposed. The increase in production from a legal baseline of 300,000tpa has not been assessed to either the original 1,500,000tpa application of the revised DA of 1,200,000tpa as requested by the Department. S-23222081

The approved operations for the quarry are outlined **Section 1.2.1** while **Section 1.1** provides an overview of the Revised Project compared to the Original Project.

For the purposes of detailing the ADA, the ADA Report outlines the Revised Project against for Original Project. The ADA Report and assessments do not assume that the baseline for the Revised Project is the Original Project.

The ADA Report, and relevant assessments contained within, have assumed the baseline is either the parameters of the 1991 consent (as set out in **Section 1.2.1**) or no quarry operations, which is a conservative approach.

It is noted that some assessments have assessed the additional impact associated with the Revised Project based on the current condition of the Project Area, for example biodiversity. This approach is in accordance with relevant legislation and guidelines which takes into account cumulative impacts from previous development.

Table 5.1 outlines the environmental aspects and the baseline considered in the relevant assessment.

Adequacy of SIA

The SIA component of the revised EIS whilst comprehensive in providing area and regional data, fails to adequately address the social and amenity issues that would be imposed on Martins Creek, Paterson and other settlements on the haulage route if the project is approved. The technical studies undertaken apparently show compliance with appropriate criteria, but the key concern is not adequately addressed – how can the social and amenity impacts caused by quarry operations and product transportation be managed in a wholly rural setting. S-25819152

The SIA didn't clearly identify the issues raised and the parts or groups of community concerned. For example issues raised by concerned parents of early learning centers and the two primary schools along the haulage route were not discussed with the relevant Parents and Citizens groups. Issues raised by the community relating to the increase in rail movements from the 210,000tpa approved now to the proposed 600,000 tpa have not been addressed. Noise to residents adjacent to the line and airborne dust (silicas) have not been considered unless there is an intent to include these in the generic mitigation measures such as sound attenuation, reduced travelling speed and covering the wagons. S-23222081

Impacts on social amenity as a direct result of product transportation and quarrying operations have been addressed at Section 7.3 of the SIA (refer to Appendix O of the ADA Report).

Issues raised during consultation activities undertaken to support the SIA have been addressed throughout Section 6 of the SIA with commentary provided through the sub sections contained within the SIA with regards to the specific issues as raised by particular stakeholder categories. While specific quotes discussing issues have not been attributed to the originators, local primary schools and the Tilly's Childcare Centre were consulted to inform this identification of issues and concerns, and therefore social impacts. Section 6.15 of the SIA also identifies issues raised by location.

As is clearly highlighted in the SIA, social amenity and changes to sense of community impacts were seen to be the most significant (high) social risks of the Revised Project, when based on the consideration of both stakeholder perceptions and mitigated technical risk analysis. Potential impacts on amenity and sense of community were considered to be as a direct result of a number of Revised Project activities including most notably trucks and traffic movements (including associated volumes, disruptions, damage to infrastructure, public safety risks, cumulative impacts, noise and changes to air quality) and onsite quarrying activities (as a result of noise, blasting vibrations and changes to air quality).

As outlined in Section 7.3 and Section 7.4 of the SIA, Daracon have undertaken significant changes to the project parameters and identified a range of mitigation measures in an effort to reduce these identified impacts associated with the Revised Project. These changes have also taken into consideration mitigation and enhancement strategies identified by stakeholders during consultation and engagement.

Concerns being identified with regards to an increase in rail movements have been documented in the SIA with Section 6.3.2.1 for example, noting that during the Traffic and Transport CAF, concerns were expressed with regards to the intention for Daracon to seek approval for an extension to the existing rail spur at the quarry site and potential impacts associated with both this and the quarry's rail unloading facilities with concerns predominantly associated with noise and how the noise impacts would be managed.

As reported at Section 7.3.2.1 of the SIA, a detailed NIA had been undertaken as a part of the ADA Report in accordance with relevant guidelines, i.e. the NPfI, RNP, RING and the ICNG. This assessment included consideration of the impacts associated with road traffic noise and rail noise from trains on a non-network rail line/network rail line. With respect to rail noise, the noise assessment determined that:

- During the daytime period, more than twenty pass-by events could occur without exceeding the Recommended Acceptable LAeq noise level at the closest receivers on Station Street. Over the four-hour evening period, only one pass-by event is possible before the Recommended Acceptable LAeq noise level at the receivers on Station Street is exceeded. During the night-time period, a single pass-by event would result in the recommended acceptable LAeq noise level at the receivers on Station Street being exceeded.
- During the evening period more three pass-by events could occur without exceeding the recommended maximum LAeq noise level at the closest receivers on Station Street. Over the night-time period two pass-by events could occur before the recommended maximum LAeq noise level at the receivers on Station Street is exceeded.

Airborne dust silica has been addressed at Sections 7.3.4.1 and 7.5.2 of the SIA in which it is acknowledged that while the number of people identifying physical impacts on health as concern were small in number, airborne silica was an identified issue of concern to a small number consulted community members in the context of possible impacts on health of the quarry workforce and broader community. It is also reported at Section 7.3.4.1 of the SIA that monitoring and modelling undertaken under the air quality impact assessment suggests that the Revised Project is not expected to cause adverse air quality impacts with respect to crystalline silica. Section 7.5.2.1 of the SIA also confirms that the Revised Project is not expected to cause adverse air quality impacts with respect to crystalline silica with respirable silica with the estimated annual average at site boundary measured at $2.0 \mu\text{g}/\text{m}^3$, below the occupational exposure standards reported by the Victorian EPA at $3.0 \mu\text{g}/\text{m}^3$. Concentrations further from the site boundary, including at sensitive receptors, will be lower than $2 \mu\text{g}/\text{m}^3$.

When considering these results, the Revised Project was assessed as unlikely to have an impact on physical human health through emissions to air with a minor consequence and is therefore ranked as a low social impact for the community.

It is acknowledged that changes to air quality are expected to still be of concern to some within the community, particularly more vulnerable groups within the community such as children at schools along the haul route and those with existing health conditions, including asthma. Therefore, as highlighted at Table 7.13 of the SIA, all air quality monitoring results will be published on the Daracon website.

Adequacy of air quality assessment

I don't agree that the dust modelling data is accurate or has been done with a systematic array of sensors to properly gauge the impact of dust on the surrounding properties.

The wind data is not likely to take into account the wind currents close to the ground that will be affected by the local topography, and cannot be relied upon when the quarry activity changes the wind currents. There is a lack of dust sensors north-east of the quarry in the submission and therefore no data in this area. S-25079956

I believe the air quality report is not accurate as it uses data for the air quality of Martins Creek based on Singleton air quality data, the air in The Paterson Valley is much cleaner than the dirty mine dust air of Singleton. This should not be used, and therefore will change the air quality report. S-24903800

The AQIA and the revised AQIA don't address the increase in production from the 1991 Consent criteria to the new proposed production levels. Modelling along the road and rail haulage routes has not been supported by quantitative and qualitative data. S-23222081

The revised modelling of the air quality assessment along the truck route assumes an even flow of trucks to a model emissions. The lived experience shows the trucking to be bunched and to approach in waves. What would be the impact along this route when the intensity of trucks is magnified? Has this worst case been assessed in the built up areas of Paterson and Bolwarra and what actual monitoring has taken place along the road transport route to assess the impact of the proposed form the 1991 base consent criteria? S-23222081

The AQIA for the Revised Project has been undertaken in accordance with the Approved Methods and the SEARs. Further details on the air modelling have been provided in response to the EPA submission (refer to Section 4.1 and **Appendix 5**).

As outlined in **Table 5.1**, an appropriate baseline has been considered in the AQIA for the Revised Project.

Adequacy of biodiversity assessment

This proposed development has not properly assessed existing Koala habitat, in fact the majority of consultant reports that are too technical for my understanding appear to have been prepared in 2016 - are they even relevant considering current changes to SEPPS and community needs S-24724501

The *Biodiversity Assessment Report* indicated quite an intense investigation. However, I was disappointed to note that no community wildlife groups appeared to have been consulted. It has long been reported locally that people have observed spot-tailed quolls in the Martins Creek area. I have also found a dead brush-tailed phascogale on my lawn and seen another one on the roadside between the bridge and the Gresford Road corner. Neither of these species were identified in the report. S-23452223

Allowing this development strictly contradicts the State Environment Planning Policy which states the policy's aim is to encourage the preservation of natural vegetation that provide habitat for Koalas and supports their permanent free living over their current range and reverse their current decline. S-24991214

Koala SEPP 21 states the NSW Koala Strategy's objective of stabilising, then increasing the populations of koalas in the wild...This proposed development has not properly assessed existing Koala habitat, in fact the majority of consultant reports that are too technical for my understanding appear to have been prepared in 2016 - are they even relevant considering current changes to SEPPS and community needs. S-24724501

A detailed BAR has been prepared which considers the biodiversity impacts associated with the Revised Project. The BAR has been prepared to assess the potential ecological impacts of the Revised Project following the FBA. The BAR addresses all relevant biodiversity requirements, including impacts to koalas, Spotted-tailed Quoll and Brush-tailed Phascogale and their habitats.

SEPP (Koala Habitat Protection) 2020 is addressed in the current BAR and ADA Report. A Plan of Management will be prepared to provide measures for the management of Koalas on the site, in keeping with the intent of this SEPP.

It is also noted that BCD had limited comments on the adequacy of the BAR (refer to **Section 4.3**).

Adequacy of traffic impact assessment

The collection of traffic data by Seca Solution in May 2018 which is tabled in Seca Solution Transportation Analysis, Appendix C -Traffic Impact Statement states on page 52 "This data is considered valid, as it is less than 3 years old and the extent of background growth in traffic will be low over 2 years". In the time since this data was collected the Suburbs of Bolwarra, Bolwarra Heights and along Maitland Vale Rd have had housing estates developed and there must be hundreds of new houses already constructed with many more under construction now. This includes but is not limited to the areas north of Bolwarra Rd, including Lagoon Avenue, Riverside Street, Vantage Court, and the whole Hunterglen Estate, including Hunterglen Drive and Pandanus circuit and the housing estate of Maitland Vale Acres including Mount Harris Drive and associated streets. This must have had a significant impact on the local traffic and indeed the background traffic as all these streets have to use Paterson Rd as it is the only road for all local traffic to access any areas in every direction, with the exception of Maitland Vale Acres where residences can access areas to the west via Maitland Vale Rd. S-24980586

As noted in the submission, the data is considered valid and that position is maintained. While it is noted that the duration of the assessment period has taken some time, the TIA also considers future growth scenarios.

As per the normal requirement of TfNSW (and in accordance with the SEARs request) the operation of the key intersections have been assessed for the current year as well as the future design year of 2030, allowing for background traffic growth to occur over this 10 year timeframe. Background traffic growth in the locality of the Lower Hunter Valley has been applied at 2% per annum giving some 20% over 10 years. This growth factor has also been allowed for along the New England Highway, reflective of growth expected to occur along this corridor. As per the advice from MCC, limited growth is expected to be generated by development in the Bolwarra area. A conservative growth value of 2% per annum has also been applied over a 10 year timeframe at each leg on all intersections.

It is further noted that TfNSW has not raised any concerns in relation to the traffic counts undertaken for the TIA for the Revised Project (refer to **Section 4.4**).

Adequacy of economic impact assessment

I do not believe that an economic assessment of a single option, that being the preferred option is sufficient for a project of this magnitude. I would think that an analysis of several options including those for solely road transport and solely rail transport would provide a more creditable project position to be assessed S-24694586

The Economic Impact Assessment undertaken for the Revised Project is based on a cost benefit analysis (CBA) and local effects analysis (LEA) prepared under the framework established in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the Economic Guidelines) released by the NSW Government in December 2015.

The Economic Guidelines also require an estimate of the potential costs generated by the Revised Project. To estimate the environmental, social and transport-related costs, the Technical Notes supporting the guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals has been incorporated into the analysis (refer to Appendix P of the ADA Report).

The Economic Impact Assessment is required to consider all the issues covered in the SEARs and be integrated with the conclusions of the relevant environmental impact assessment. The inputs for the CBA and LEA are specific to the Revised Project and the detailed outcomes of the environmental assessment outcomes. The Economic Guidelines do not require the analysis of alternative project options as they have not been assessed and the details required to complete a full assessment are not available.

Section 79C of the EP&A Act states that in determining an application, the consent authority must evaluate a number of factors. Both the quantitative and qualitative findings of the CBA and the LEA are evaluated. They are considered alongside other information in relation to the individual proposal and supporting arguments. The Revised Project, as outlined in the ADA Report, is the subject of the development application and for consideration by the IPC.

Inadequate community consultation throughout the approval process

In their revised consultation process the proponent adopted Collaborative Assessment Forums (CAF) in addition to one-on-one interview methods of engagement. CAF's were conducted for noise, dust, traffic, and social impact assessment (SIA) over a period of about 6 months during 2020/2021 but interaction with attendees was in the main one of information provision only, was far from "collaborative" and little engagement or response to concerns was forthcoming... While feedback to these forums was repeatedly requested, it was only provided days before the submission of the revised EIS. The accuracy of such feedback is also in question. S-25819152

The consultant also adopted an internet-based forum, "Social Pinpoint", as a means of reaching out to stakeholders, however such a process disenfranchised those members of the community, of which there are many, lacking computer access or skills. S-25819152

Section 6.13.1 MCQAG records the interaction between MCQAG, Daracon and their consultant Umwelt. Specifically, it records the lack of a meaningful dialog and consultation, and the failure to consult transparently on a share of information basis. S-25819152

The quarry proponents have demonstrated, over the past 6 years, their complete disregard of the communities' concerns. Their employment of consultants to survey local opinion and to answer local concerns has been a complete farce. The consultants have NOT consulted widely and do not reflect in their reports the true feelings of the community. S-23213842

I would like to state here that the supposed community consultation process, has been a massive fail and indeed, appears to be just a tick-a-box process, rather than a proper process to understand "...impacts from the perspectives of those involved in a personal, community, social or cultural sense, to provide a complete picture of potential impacts, their context and meaning." S-24637877

Although I signed up via email to be kept informed by Umwelt, I was not invited to any consultation meetings and indeed only found out about the Social Impact Forum earlier this year, when I was emailed by a member of the Martins Creek Quarry Action Group. S-24637877

Community consultation is negligible, and avoided by them. The submission also appears to have outright lies and exaggerations regarding the level on contact with people – I personally had one phone call from their bought slave people at Umwelt, which involved only a confirmation of my objections, that had been lodged in a prior submission. It was pointless. In this submission, the community consultation (cough cough) was for people in a 4km radius - what about everyone on the truck route, and surrounds? All of us are impacted. S-25047544

As outlined in Section 5.2 of the ADA Report, a comprehensive stakeholder engagement strategy was developed as part of the ADA process and SIA assessment to guide future stakeholder engagement activities, following the exhibition of the EIS for the Original Project (Monteath & Powys, 2016). This strategy was informed by a detailed review and analysis of submissions made during the public exhibition of the EIS for the Original Project.

The stakeholder engagement strategy was aimed to:

- inform and seek feedback from stakeholders during the design and development of the Revised Project
- identify key issues to inform the updated assessment of the Revised Project

- seek feedback from stakeholders to identify and refine proposed mitigation measures to seek to further minimise environmental and community impacts.

The outcomes of the stakeholder engagement strategy have informed various aspects of the Revised Project and the ADA process including the SIA (refer to Appendix O of the ADA Report).

A wide range of stakeholders have been identified and involved over key phases of the engagement program. Stakeholder identification was largely undertaken using inputs from several sources including:

- review of publicly available documents undertaken to support the profiling of the local and regional community (including a review of recent media and local community service directories) and the identification of salient stakeholder issues in the relevant communities
- outcomes of historical engagement (where available)
- review of submissions on the EIS for the Original Project (Monteath & Powys, 2016)
- snowball sampling i.e. contacts made from initial sources providing contact details of additional stakeholders to be engaged.

Key stakeholders included:

- service providers, local businesses and special interest group representatives
- residents and community members living in proximity to the Project Area and/or the proposed haul route (Haul Route 1).

Residents were largely drawn from the localities neighbouring the quarry including Martins Creek itself, and Vacy. The views of those residents and community members located along haulage routes, including Paterson, Bolwarra and Bolwarra Heights were also sought via invitations to participate in the engagement program, with invitations shared via a number of mechanisms including:

- direct contact with community members, key stakeholder and representatives from community and special interest groups (e.g., Martins Creek Quarry Action Group, Bolwarra Heights Community Group, Paterson Progress Association and the Brandy Hill Seaham Action Group, etc.)
- an expression of interest to participate in engagement activities or to have a personal interview included in the Community Information Sheets No. 1 and 2
- notices included in the Paterson Psst
- via a dedicated Martins Creek Quarry Social Pinpoint page.

The engagement program was implemented in two key phases during the ADA and SIA processes, as outlined below, to allow a participatory approach to assessment and to involve the community and other local and regional stakeholders in the clarification and confirmation of project issues and identification of strategies to address negative impacts and enhance positive impacts.

Phase 1 SIA engagement – Introduction to the Project team, the Revised Project and ADA process. Phase 1 consisted of two key stages, namely:

- expressions of interest to a broad range of stakeholders to participate in the engagement program as well as gather community concerns and feedback to inform the updated environmental assessment and revised technical studies for the RTS process (during June to September 2018)
- present and discuss outcomes of draft technical assessments on key issues of concern, identification of any further perceived issues and opportunities relating to the Revised Project and collaboratively discuss possible strategies to mitigate impacts and enhance opportunities (during March to June 2019)

Phase 2 SIA Engagement – Additional project changes to the Revised Project and key assessment outcomes. Feedback was provided on additional project refinements following the Phase 1 engagement and the change in the quarry operations during September 2019, including an update on key outcomes of the draft environmental and social studies as a result of the project changes and management strategies with the aim of consolidating proposed management strategies through stakeholder feedback and endorsement (during July 2020 to February 2021).

The engagement methods utilised were selected based on a detailed stakeholder identification and analysis, completed prior to strategy implementation, and were chosen to facilitate stakeholder involvement. Further details of the engagement methods undertaken, and stakeholders consulted in each of these phases is provided in the ADA Report.

The stakeholder engagement program has provided Daracon with valuable input from key stakeholders and local community residents regarding the impacts of the quarry's recent operations, as well as identifying any perceived impacts associated with the Revised Project. This information was used to inform the Revised Project design, planning and assessment phases.

In addition, a comprehensive SIA has been undertaken as part of the updated environmental assessment process. The SIA has assessed and predicted the likely consequences of the Revised Project in social terms and involved understanding potential impacts from the perspectives of those involved in a personal, community, social or cultural sense. The SIA is included as Appendix O of the ADA Report.

A summary of the key community engagement mechanisms undertaken during the engagement program is summarised in **Table 6.3**.

It is also noted that engagement activities were impacted by the ongoing COVID-19 pandemic. Despite this, Daracon and Umwelt made significant attempts to provide engagement opportunities for stakeholders. Details of key Daracon and SIA contacts were available on key engagement materials and on the Martins Creek Quarry Social Pinpoint page. Daracon continues to welcome community engagement and feedback on the Revised Project.

Table 6.3 Stakeholder Engagement Mechanisms

Activity	Description
Meetings with the Martins Creek Action Group (MCQAG)	<p>Members of the Umwelt project team and representatives from Daracon attended the following MCQAG meetings in 2018.</p> <p>26 March 2018: Introduction to Umwelt and the RTS process, outcomes of the submission analysis and proposed approach to the RTS document preparation and accompanying engagement program.</p> <p>22 May 2018: Discussion of proposed changes to the existing operations, a RTS project status update and upcoming engaged activities.</p> <p>18 December 2018: General update, review of the SSD approval path, study updates and future engagement opportunities.</p> <p>9 January 2019: MCQAG representatives attended the Umwelt office to provide the Project team an overview of history of the quarry and the Group's key concerns relating to the Revised Project.</p> <p>10 September 2020: General update of activities undertaken since quarry placed in limited operations in September 2019 and proposed activities moving forward.</p>
Community Consultative Committee (CCC) Meeting	<p>Project briefing on 22 May 2018 to previous members of the MCQCCC to share information about the ADA process and obtain committee member feedback on the proposed approach.</p>
Updates in the Paterson Psst	<p>Updates included in the local Paterson Psst community newsletter at key project stages.</p> <p>July 2018: to inform the community that Umwelt consultants were undertaking engagement activities to discuss the status of and seek views on Daracon's proposed project and to invite them to make contact if they would like to have a meeting or discussion.</p> <p>February 2019: to provide an update with regards to the Collaborative Assessment Forums series on key issues of concern and encourage community members to register interest if they had not done so already.</p> <p>September 2020: to inform the community that Daracon have considered community input and have completed further Revised Project feasibility investigations, detailed design refinements and have considered additional mitigation measures. To inform that the Community Information Sheet No.2 has been distributed and to acknowledge the appointment of Daracon's Community Liaison Representative and development of the Social Pinpoint engagement platform.</p> <p>October 2020: to inform the community that there had been additional information uploaded to Social Pinpoint with responses to some frequently asked questions and provide contacts details of the team if they wanted additional information.</p>

Activity	Description
<p>Personal and group interviews (face to face and phone) with proximal neighbours and community members</p>	<p>Personal (face to face and phone) meetings with proximal neighbours and other community members to validate issues of concern and social impacts identified during submission analysis and identify additional issues and possible mitigation and enhancement strategies and views on proposed project changes and the extent to which they addressed impacts.</p> <p>For Round One stakeholders (community and businesses) were contacted personally during June to August 2018 by phone and asked if they would like to participate in an interview at a convenient time. Expressions of interest to participate in the engagement program were also included in a Community Information Sheet distributed to neighbouring and local residents and businesses and in an article included in the Paterson Psst with Umwelt Social Team contact details.</p> <p>Personal interviews were predominantly conducted face to face (74 face to face and 4 via telephone). An additional 100 contact attempts were made with community stakeholders where voicemails were left, emails with additional information were sent, and conversations were had where stakeholders responded that they would be in contact with the project team should they decide they were interested in participating in an interview. A total of 22 people declined an offer for an interview.</p> <p>During Round Two, from August 2020 to March 2021, contact was made via phone, email or text message to Round One participants, residents proximal to the quarry, community groups and organisations, and local business, service providers and Indigenous group representatives to invite them to be involved in an interview. Community members were also offered the option to complete an online survey. In total, 114 participants were involved in personal interviews (phone or face-to-face) or completed an online survey.</p> <p>Personal (face to face and phone) meetings with landholders proximal to the quarry to discuss the outcomes of noise impact assessment, collect stakeholder feedback and suggestions for mitigation measures. This engagement was undertaken by Daracon representatives and noise specialist and involved–</p> <ul style="list-style-type: none"> • July - August 2020: engagement with Martins Creek residents (Station and Cory Streets) on further work to reduce future noise impacts. • November - December 2020: engagement with landholders in close proximity to the quarry with potential operational noise impacts, including personal visits and delivery of property-specific information regarding draft noise impact assessment results and proposed mitigation measures. • 70 property-specific information sheets were prepared and personally delivered to landholders.
<p>Meetings and Project briefings with businesses and service providers</p>	<p>Personal interviews to identify specific issues of concern and associated appropriate management responses. Interviews with businesses and service providers also informed consideration of specific issues included within the SIA.</p>

Activity	Description
Community Information Sheets	<p>Development and distribution of Community Information Sheets to near neighbours and key stakeholders at key stages.</p> <p>Each information sheet also provided Daracon and Umwelt contact details for further information and/or to request a personal project interview or briefing.</p> <p>Community Information Sheet 1 (June 2018):</p> <p>Included a Revised Project update post EIS public exhibition, outcomes of submission analysis and identified issues of concern and an overview of the RTS process.</p> <p>Community Information Sheet 2 (July 2020):</p> <p>Outlined key Revised Project changes that were made in light of feedback from community engagement activities since 2019.</p> <p>Discussed the ADA and RTS process and key steps to date and moving forward.</p> <p>Introduced Social Pinpoint, an online engagement platform for information provision, including Revised Project presentations and information sheets and encouraged in ongoing engagement either via the discussion forums and survey tools.</p> <p>Community Information Sheet 3 (May 2021):</p> <p>Provided a summary of assessment outcomes from the ADA process.</p> <p>The Community Information Sheets were distributed to approximately 3700 households nearby to the quarry and along the haulage route including Martins Creek, Vacy, Paterson, Tocal, Bolwarra, Bolwarra Heights, Duns Creek, Mindaribba and Woodville. Community Information Sheet 1 was distributed via Australia Post's unaddressed mail service.</p> <p>Community Information Sheet 2 and 3 were hand delivered, due to community feedback that some residents did not receive the first Information Sheet.</p> <p>Copies of both were also left in prominent locations, i.e., Paterson Post Office, Dungog Shire Council building, Vacy General Store, Paterson Country Café and Daracon reception. An electronic version was also emailed to local community representative groups for their information and distribution to members, e.g., Martins Creek Quarry Action Group, Paterson Progress Association. Information sheets were also emailed to members of the community who contacted the Project Team and indicated that they had not received a copy by post but would be interested in receiving.</p>
Vacy Fair Stall	<p>Drop-in stall at the Vacy Fair on 9 September 2018 to share information about the updated environmental assessment and revised technical studies to be undertaken for the Revised Project to address DPIE feedback on the EIS for the Original Project and to provide a forum for feedback. Representatives from Daracon and Umwelt were present to address questions. A total of 21 individuals visited the stall and engaged in detailed questions and answers with the team.</p>

Activity	Description
Face to face and phone interviews with other groups	<p>Face to face and phone discussions with three local bus companies during March to July 2019 with regards to local bus routes and how these intersect with the proposed haul route for the project.</p>
	<p>Phone interviews during March to July 2019 with three local real estate agents based in Dungog and Maitland with regards to trends in the property market in the communities of interest.</p> <p>Targeted engagement from with Paterson businesses regarding proposed intersection upgrades, parking and road changes.</p>
Collaborative Assessment Forums (CAF)	<p>A series of collaborative assessment forums (CAFs) were held throughout the ADA and RTS process to collaboratively discuss the outcomes of key technical assessments and identified mitigation strategies. The sessions also sought community feedback in relation to the suggested strategies and obtain community ideas and input into other possible strategies to address the identified impacts.</p> <p>Prior to each CAF, participants were provided with a pre-read booklet outlining key information relating to the CAF topic, to inform their participation. After each CAF participants were provided with an information pack containing:</p> <ul style="list-style-type: none"> • summary of the meeting notes including issues and questions captured in the CAF • a copy of the presentation slides from the CAF • feedback relating to the issues raised in the CAF including: <ul style="list-style-type: none"> ○ frequently Asked Questions, with answers based on information available to date, and ○ commitments from Daracon in response to the community's feedback, including short term actions to be implemented as part of current operations, further investigations as part of the current assessment process, and management strategies relating to future operation. <p>CAFs were held on the following dates:</p> <ul style="list-style-type: none"> • Air and Blasting: 14 March 2019; with a total of 16 participants attended. • Traffic and Transport: 23 and 24 July 2019; a total of 39 participants attended. • Noise: 15 December 2020: held online, 5 registered attendees with additional non-registered attendees also online. • Social impact assessment: 11 and 12 February 2021; a total of 27 participants attended.
Email and phone correspondence	<p>Phone calls and emails relating to the SIA process to landholders, as required, to organise meetings, provide information and/or respond to questions relating to the SIA process, including the CAFs.</p>
Daracon Website	<p>Provision of information relating to the Revised Project, including a copy of the CISs and other information committed to at the CAFs, made available on the Daracon website. For example:</p> <ul style="list-style-type: none"> • blast notification protocol • provision of data from additional dust deposition gauge established at View Street • Code of Conduct • links to Social Pinpoint site (refer below for further information) • Community Information Sheets.
Online Survey	<p>Development of an online survey that was made available to community members via email (sent to over 160 email addresses) and on the Social Pinpoint website.</p>

Activity	Description
Social Pinpoint Website	<p>Provision of a Social Pinpoint website (https://umwelt.mysocialpinpoint.com/martins-creek-quarry), an online interactive engagement platform providing key Revised Project information and access to the SIA consultation tool to facilitate meaningful engagement and to keep the community informed throughout the assessment process.</p> <p>Site included information relating to Revised Project design changes, information sheets, CAF pre-read material, presentations and outcome summaries, and Q&A of frequently asked questions.</p> <p>The Social Pinpoint site also included links to the online survey and communication portals where community members could subscribe to receive project updates or log a question for the project team.</p> <p>When new content was uploaded to Social Pinpoint, an email notification was sent to stakeholders who had registered interest in received project updates (over 160 email addresses).</p>

Public meeting

In view of the effect that the proposal will have on the Martins Creek, Paterson, Lorn, Bolwarra and East Maitland areas, why on earth can not an official public meeting be held to discuss the proposals. S-24638304

So far there have been no public meetings by the Department in regard to this application. S-22672300

Holding a public meeting is not a requirement of a proponent under the EP&A Act or relevant guidelines for SSD projects.

As the Revised Project has triggered an IPC process, a public meeting and/or hearing will take place as part of the assessment and determination process. A public meeting and/or public hearing would be subject to the requirements of the EP&A Act and IPC Guidelines.

Daracon not making contributions Daracon has not made contributions

Although Daracon's trucks are the major cause of Tocal Rd deterioration, as far as I know Daracon never contributed to any repairs. It is the Maitland City Council's residents who are left with the bill. It is unfair that our rates are going towards subsidising Daracon's operations instead of projects benefiting local community. S-23068206

Under the IEMP agreed with DSC in February 2019, Daracon contributed up to \$0.795 per tonne of product transported by road for the purpose of the maintenance or repair of the public roads comprising the haul routes within the DSC LGA from the quarry. The contributions were paid on a monthly basis, calculated by reference to weighbridge records, which were required to be provided to DSC upon request.

For the period January to September 2019 (when operation of the IEMP and the quarry ceased), Daracon contributed in excess of \$250,000 to DSC in accordance with the agreed requirements of the IEMP. Prior to the IEMP, there was no planning tool in place for Daracon to make contributions to road maintenance.

Should the Revised Project be approved, Daracon will be required to make annual financial contributions to both DSC and MCC in the form of a VPA. While Daracon is not responsible for how contributions are used by a council, it is anticipated that contributions would be put towards the maintenance of roads used for haulage of quarry products. The VPA has not been finalised at the time of preparation of this report and is subject of ongoing consultation.

Voluntary Planning Agreement(s) and contributions

There does not appear to be any details around the VPAs proposed in the EIS with Maitland and Dungog councils. This needs to be addressed. S-23145712

The council does not have the money to repair so should be Daracon's responsibility to maintain the roads they are using, without the trucks the roads wouldn't be in such a bad condition. S-23023126

This roadwork is paid for by ratepayers, not by the culprits causing most of the damage. S-25826331

Daracon wants far lower compliance requirements imposed on it than those of its competitors. Other quarries in this State have had to expend considerable amounts on road and rail infrastructure. On the other hand Daracon only makes vague suggestions that it intends to reach agreement with Councils to cover some of their costs resulting from expansion. If any approval is given to continue or expand Martins Creek Quarry, it should be at no public expense. S-23136351

As outline previously, Daracon has committed to a VPA should the Revised Project be approved.

The details of the VPAs are subject to negotiation with the councils. Before a VPA is entered into, it must be exhibited, and public submissions considered by the relevant planning authority. The community will have a further opportunity to comment on the contributions offered by Daracon in connection with the Revised Project.

In addition, Daracon have committed to implementing a dedicated Martins Creek Quarry Community Investment and Wellbeing Fund that strategically focuses the allocation of contributions and donations and allows the company to work with the local community to effectively manage the negative impacts of the operation and to enhance any potential benefits of the quarry.

Future modifications

If the expansion is permitted, then I am concerned that Daracon will apply for consent modifications, such as increasing truck movements and/or operational times. These amendments will be difficult for me and the community to keep abreast of and to object to. S-23165363

Daracon have no current plans for future modifications.

Following detailed analysis of Agency and community feedback on the EIS and subsequent stakeholder engagement, Daracon committed to a number of key project design changes and additional mitigation and management measures to minimise the project's environmental and social amenity impacts. This included reductions in proposed extraction limits, changes to quarry operating hours, reduced road transportation volumes, increased rail transportation and a reduced disturbance area. Daracon maintain those commitments and propose to operate the quarry in accordance with those commitments, should approval be granted.

Any potential future modifications would be subject to the relevant NSW approval processes which would include opportunities for community involvement.

Negotiated Agreements

How many residents presently have a negotiated agreement with the quarry, and if any residents do have an agreement what are the terms? S-24714061

Any negotiated agreement between Daracon and a private residence is confidential, including the terms of that agreement.

Ongoing compliance

Daracon is proposing that truck movements to and from the quarry be limited to prescribed haul routes. To ensure that these routes are used, Daracon intends to introduce a 'code of conduct' for truck drivers and, should the route be ignored, Daracon claims it will sanction the defaulting driver/s. It takes little imagination to see the flaws in this. Such a proposal is putting the 'fox in charge of the hen house'. Truck drivers, particularly independent contractors, will take whatever route suits them.... Moreover, I doubt if the Department/IPC has the legal capacity to enforce adherence to prescribed haul routes even if they are made a condition of consent. It begs the question as to how breaches would be sanctioned. Should Daracon be required to pay a meaningful monetary penalty for each breach? Who is to police this and other requirements? Is Daracon to be required to reimburse Dungog Shire Council for the cost of employing a compliance officer? I expect that Daracon will, after a 'honeymoon' period, not concern itself with haul routes! Trucks will continue to use whatever roads serve their convenience. S-23136351

Daracon have committed to a number of key operational mitigation and management measures for the Revised Project. A summary of previous commitments and any additional commitments is provided in **Appendix 2**. The court proceedings withstanding, Daracon has a good record of environmental performance at the quarry.

Daracon will be required to comply with the terms of any development consent granted for the Revised Project, including adherence to the Code of Conduct and proposed traffic movements. Daracon have committed to the implementation of a regular independent audit process to assess compliance with Driver Code of Conduct and other road haulage commitments outlined in the ADA Report.

In addition, Daracon will:

- immediately notify DPIE and any other relevant agencies after it becomes aware of an incident
- Daracon will notify DPIE of a non-compliance, within seven days of becoming aware of a non-compliance
- within one year of commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, Daracon will commission and pay the full cost of an Independent Environmental Audit of the development.

Daracon will be required to complete an Annual Review each year which will review the environmental performance of the development. Among other things, the Annual Review will include:

- a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year
- identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.

All reporting required by the development consent will be made publicly available on the quarry website.

Community submissions

I hope the Independent Planning Commission look closely at all the submissions on the planning portal closely as they will notice nearly all the Quarry support submissions come from people who don't reside or work in this community. S-23119529

It is also worth noting that the vast majority of the positive submissions do not live in the vicinity of the quarry or live on the proposed truck route and as such will in no way experience any of the traffic, noise, safety etc negative impacts. S-21527552

The summary of community consultation would appear to be biased. Of the listed 512 community and business respondents, it would appear to be incredulous that 400 odd respondents are listed as far a field away as Revesby and Oonadatta and not surprisingly have recorded their response as "supportive" to the impact of increased traffic arrangements, noise or dust pollution. It seems they have no concerns for the proposed loss of habitat for a range of animal species and are very pro supporters of the project. I reject the findings in the survey as quite misleading skewing the results numerically to give the impression that the overall response by "residents" is one of support. It should be noted that those that oppose the expansion of the quarry are all in the immediate areas where they will be directly effected. Providing feedback by those in Sydney or regional NSW is surely an attempt to mislead and undermine the process. S-25072713

A number of community submissions commented on where community members lodging submissions resided. It is noted that the submissions being referred to were the submissions for the Original Project not the Revised Project. The submission on the Revised Project were not available on the DPIE Portal until the exhibition period had ended.

The analysis of current submissions is provided in **Section 2.0**. As outlined in **Section 2.1.2.1**, 76% of objections were received from the nearby area (within approximately 5 km or proximate to the haulage route), 20% from the local and sub-regional area (between approximately 5 km and 100 km) and 4% from the broader community (approximately 100 km).

6.5 Justification and Evaluation of the Revised Project

Further to **Section 2.2.1**, 49 objections raised concerns about the justification of the Revised Project, while 20 submissions were received that stated a general objection to the Revised Project however stated no specific issues or reasons for the objection. These submissions were classified as objections on the merits of the Revised Project.

An updated evaluation of the merits of the Revised Project is provided in **Section 7.0**.

Project justification

Plus it is all so unnecessary when there are other quarries in the Hunter with better access to major arterial routes. S-23112190

As far as the development being of "State Significance" is concerned there are many quarries producing large quantities of the andesite product within the state with some quite close by and it is suggested that the project be relabelled "Daracon Significant". S-23119504

Martins Creek Quarry was established in the early 1900s to provide rail ballast for the Main Northern Rail Line. As it is located 26 km from state arterial highways meaning that truck haulage must take place on the regional roads of Dungog Shire Council, Port Stephens Shire Council and Maitland City Council and rail ballast is no longer required I would question the need and viability of expanding the quarry operation. There are six other quarry facilities servicing the area. S-23119599

NSW infrastructure projects will not be impacted if this expansion does not go ahead. There are enough quarries in this area and the state to supply requirements. This expansion is an exercise in raping a resource for the profit of a company and persons who have neither a connection to the area, nor will be impacted by a decision in its favour. S-23136376

To justify an approval of this expansion, Daracon should be required to make a case that, without this particular expansion, the area currently serviced by the quarry would suffer a shortage of quarry product. Daracon should also be required to show how its proposed expansion benefits a) Dungog Shire b) Maitland LGA c) the Hunter Valley d) the Sydney/Newcastle/Mid North Coast areas. S-24977846

It appears the various attachments and resources provided for Daracon on the State Government's Major Projects website fail to provide justification for the expansion. There are numerous existing quarries servicing the NSW market including the Martins Creek quarry contributing up to 330 000 tonnes of product per year. S-24977846

In regards to the quarried product at Martins Creek there is no shortage of nearby existing and proposed quarries. Brandy Hill Quarry, Boral Quarry, Hunter Quarries, Buttai Gravel Quarry and Teralba Quarry. There are also two nearby proposed quarry sites, Eagleton Quarry and Karuah St Quarry. There is a major difference between all these quarries and MCQ. S-23203146

Of the objecting submissions from community and organisations/interest groups, there is a sentiment that the quarry product is not required or may be sourced from other nearby quarries.

Section 3.0 of the ADA Report provides a detailed analysis of the strategic need and justification for the Revised Project.

The quarry has the ability to produce high quality material and products for use in rail, concrete, asphalt and general civil construction, including products to meet the specifications of TfNSW, ARTC and Sydney Trains. Major customers of the quarry also include airports and port authorities, and various local Councils.

The quarry provides a diverse range of products that are far more extensive than typically supplied within the hard rock quarrying industry. Often site specifications differ to that generally offered in the industry. The quarry has demonstrated sustained market demand for a range of quarry products over a number of years, including numerous regional and state significant infrastructure projects.

Generally, quarries target materials into a particular market sector. The quarry produces materials for supply to all sectors, including products to the highest specified requirements. This is an important point of difference between the quarry and other hard rock quarry producers in the Hunter Region. As discussed in the ADA, there is a high demand for the products produced at the quarry.

The source rock at the quarry is a hard-igneous rock with analysis of dust and aggregate samples confirming suitability for a range of uses including road base, concrete manufacture, sealing aggregates and rail ballast (VGT, 2021).

Whilst the quarry primarily produces high quality ballast and aggregates, it has also focused on the design and manufacture of high-quality road pavement materials, in particular Stabilbase (RMS Dense Graded Base) and Stabilstone (RMS Heavily Bound Base). These high-quality pavement materials were previously produced during the crushing and screening process and then blended through a pugmill on site. Frequently, these materials are difficult to source readily as evidenced during 2020 without the availability of the quarry.

Hard rock quarries, particularly those that are suitable for high strength concrete and asphalt applications, are limited in the Hunter Region, and more broadly in NSW. An analysis of the regional geological setting completed as part of a Geological Assessment of the quarry (VGT, 2021) confirms that the Carboniferous and Permian aged volcanic geological formations from which these hard rock resources are available represent roughly 30 to 40 % of the region.

Due to the competing interests of residential, agricultural, scenic and conservation land uses, the availability of land for the development of quarrying operations to satisfy the growing demand for these products, is limited. Within the broader regional geological setting of the Lower Hunter Region, eight other hard rock quarries with the capacity to supply significant volumes of high strength aggregates and construction materials have been identified. These were identified as:

- Brandy Hill Quarry (Hanson Pty Ltd)
- Karuah East Quarry (Hunter Quarries Pty Ltd)
- Seaham Quarry (Boral Quarries Pty Ltd)
- Allandale Quarry (Quarry Products Newcastle Pty Ltd)
- Karuah Quarry (Hunter Quarries Pty Ltd)
- Eagleton Quarry (Eagleton Rock Syndicate Pty Ltd)
- Karuah South Quarry (Wedgerock Pty Ltd)
- Hillview Quarry (Coastwide Materials Pty Ltd).

Three of these quarries, Eagleton Quarry, Karuah South Quarry and Hillview Quarry, are proposed only and are to be assessed and determined by the DPIE and/or the NSW IPC.

Since September 2019, the quarry has not supplied any significant material volumes of construction materials into the greater Hunter regional market. This has resulted in limited quarry product supply issues for the region, with the following quarries having issues supplying materials due to limitations on the current operations:

- SCE Hebden
- Boral Currabubula reached its limits prior to the end of 2020
- BMR Quarries reached their limits for 2020
- Ardglan Quarry – extremely limited supply in 2020 while awaiting amended approvals
- Braeside Quarry – consent has lapsed
- Mackas Sand – fill sand and topsoil, no longer available, potentially indefinitely, supply exhausted and remaining materials more likely to be kept for higher value products
- Concrush, SCE Mayfield and Boral recycling Kooragang Island – limited new feed for concrete recycled materials. Same for EBH and others on the Central Coast. This problem is much larger in the Sydney region with recyclers struggling for feed
- Quarry Products – Allandale continue to have limited aggregate and roadbase supply available.

Considering the civil and infrastructure works being fast tracked in the Hunter region, as currently being evidenced on existing projects by limitations in supply of quarry products, there is great concern and the real possibility of the demand being unable to be met in the construction materials market. Supporting this is the status of a number of quarry resources reaching the limit of their operations, including:

- Peats Ridge Boral
- Kulnura Hanson
- Seaham Boral recently had their proposal denied to quarry deeper in the existing pit, meaning current capacity is approximately 3.3 Mt of resource. A new SSDA will be required to gain access to more resource, and this process can take many years
- as noted above, it is also believed that Allandale Quarry has a limited life.

The importance of the quarry as a reliable quality resource for the region, to meet product demand and product quality requirements within the market, is readily evident by reviewing the quarry's significant customers. They include major companies and businesses that have their own resources in the region from which to source either hard rock quarry products, conglomerate quarry products or sand quarry products (including Boral, Hanson, Holcim, Metromix, Redicrete and EDI Downer).

The proposed extension of the quarry is intended for the supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

7.0 Updated Justification and Evaluation of Project Merits

Following consideration of the submissions received on the Revised Project, additional assessment has been completed and further mitigation measures considered to address issues raised in submissions. This detailed Submission Report has been prepared to address the issues raised in Agency and community submissions. This report provides an analysis of the issues raised, provides clarifications and, where relevant, explains the findings of the technical studies that have been completed for the Revised Project Report in order to address all of the issues raised.

This process has sought to provide greater certainty in relation to assessment findings and, in some cases, further mitigate the impacts of the Revised Project, in particular in relation to noise impacts on the local community. It is considered that at the conclusion of this process, the overall merits of the Revised Project remain consistent with those discussed in the ADA Report (Umwelt, 2021).

As discussed in the ADA Report (Umwelt, 2021), the Revised Project represents the culmination of an extensive process of reviewing the project design to address issues raised in Agency and public submissions. Activities have included further investigations into, and consideration of, the following:

- resource optimisation and quarry plan refinements to minimise environmental and community impacts
- commercial and operational elements in relation to operating hours, annual production volumes to be transported by road and peak truck volumes
- rail spur extension options to optimise rail transport volumes, reduce disturbance footprint and minimise noise
- rail transport/unloading options
- noise investigations and extensive measures to further mitigate impact on residents in Station Street and the village of Martins Creek
- further engineering design work on relevant intersection upgrades and other enhanced traffic and transport mitigation measures following community feedback.

The proposed continued operation and extension of the quarry is intended for the supply of construction material to regional markets of the Hunter and Central Coast, local markets, major regional infrastructure and to supplement Sydney markets. The resource has been identified as regionally significant and with properties conducive to the production of concrete aggregates and construction materials to nominated specifications. The proposed development of the resource would provide for the easing and securing of future supply constraints and is considered to be an orderly and economical use of the land, optimising use of an existing quarry and processing facility with proven high quality products, with access to main road and rail transport.

Not proceeding with the Revised Project would not provide for a commercially viable extraction rate nor the extraction of a long term resource. Not proceeding with the ADA is not considered a feasible alternative due to:

1. The extent of valuable resources remaining in the lease areas.
2. Lack of certainty over the rehabilitation requirements of the whole Project Area.

3. Lack of certainty on the Approved Operations, as demonstrated in community and interest group submissions on the Revised Project.
4. Uncertainty around ongoing supply of construction materials to the local, regional and greater Sydney regions.

As outlined in the ADA Report, demand for products from the quarry will be driven by a combination of:

- infrastructure development – State or Federal spending on roads, rail, ports, schools, housing, hospitals, etc.
- private investment – commercial development, industrial development and residential construction.

The Hunter Region is Australia's largest regional economy with a projected population increase of 130,000 by 2036 and a further 80,000 by 2056 (NSW Government, 2016). The Hunter Regional Plan 2036 estimates that an additional 70,000 dwellings will be needed in the region by 2036, of which 44,200 will be in the Maitland LGA. Based on the average consumption figures for quarry materials, up to 6.9 Mt of quarry products will be required annually, of which approximately 7.7 Mt of hard rock aggregates and 4.5 Mt of sand will be required for the production of concrete for housing alone. In addition, the NSW Metropolitan Plan for Sydney 2036 forecasts show Sydney's population is expected to grow by 1.7 million in 2036. Add to this the potential growth on the Mid North Coast, then NSW could potentially see an increase in these three regions of over 1.8 million people. The infrastructure that needs to support this growth is significant.

To support economic growth and enhance liveability in the Hunter Region, the NSW Government established the Hunter Infrastructure and Investment Fund (HIIF) with the aim of improving and developing the region's infrastructure. Over a period of four years, \$450 million was allocated to the HIIF for the funding of projects such as the Lake Macquarie Football Centre, Singleton Gym and Swim Complex, Hunter Sports High School, John Hunter Children's Hospital, Nelson Bay Road, New England Highway and Wine Region Roads.

Furthermore, the NSW Budget 2020-21, announced in November 2020, will continue to invest in an infrastructure program over the next 4 years, with a record infrastructure pipeline of \$107.1 billion to ensure the delivery of projects across the State, including:

- \$10.4 billion for Sydney Metro West
- \$9.2 billion for Sydney Metro – Western Sydney Airport
- \$2.2 billion for the Sydney Gateway project - a new high capacity road connection from Sydney Airport and Port Botany to the new WestConnex St Peters Interchange
- \$10.7 billion investment in Health infrastructure over the next four years
- \$7.7 billion invested in Education and Skills infrastructure, with over \$1.4 billion in new schools infrastructure funding for new and upgraded schools, and \$100 million for asset replacement and maintenance for TAFE NSW to deliver quality training services.

Current upcoming TfNSW Major Projects over the next 5 years in the Hunter Region include:

- Golden Highway Intersection Upgrade (2021)
- Inner City Bypass – Jesmond to Rankin Park (fast tracked to begin construction 2022 with early works commenced in 2021)
- Muswellbrook Bypass (begin construction 2022)

- Singleton Bypass (fast tracked to begin construction 2023)
- Hexham Straights upgrade (estimated 2023 construction)
- M1 – Beresfield to Raymond Terrace (estimated 2024 construction).

In addition, the federal government announced in May 2021 a \$66 million investment in widening the Williamstown runway. The project includes a seven and a half metre extension on either side of the runway, which will allow planes such as the Boeing 787, the Boeing 777, the Airbus A350 to land at the Newcastle Port Stephens Airport. The quarry has historically provided compliant airport base material and asphalt aggregates for the runway.

Federal, State and regional strategy documents recognise that Australia will require significant investment in infrastructure to maintain and increase productivity. Noteworthy documents include the following:

- Future Transport 2056: Regional NSW Services and Infrastructure Plan prepared by TfNSW (2019) identifies key transport priorities for regional NSW, including new road, rail and port infrastructure, as well as upgrades to existing infrastructure. This strategy document identifies the Hunter as NSW's largest and fastest growing region, with population increasing from 730,000 in 2016 to 860,000 in 2036 and 940,000 in 2056. Specific to the Hunter region, this strategy document identifies road by-passes of regional centres (new roads), better rail connection (rail upgrades) and establishment of a freight corridor for the lower hunter (new roads and rail).
- The Strategic Regional Land Use Plan: Upper Hunter Infrastructure (NSW Government, 2012) identified maintaining and improving infrastructure, particularly road and rail capacity, as a key deliverable for the region.
- The Hunter Regional Plan 2036 (NSW Government, 2016) identifies population growth and plans for expanding transport networks and inter-regional transport connections.
- National Remote and Regional Transport Strategy (2015).
- Australian Infrastructure Plan (2016).
- NSW State Infrastructure Strategy (2014) identifies 30 investment recommendations for infrastructure projects valued at a combined \$18.9 billion including targeting productive regional industries and connected regional communities.

There are also a number of local strategies and council operational plans which envisage the construction of new and upgraded infrastructure. As identified in the ADA Report, the construction of new infrastructure, particularly that for road and rail transport, requires large volume of quarry products.

In addition, a report commissioned by DPIE was released in 2021 on the supply and demand profile of geological construction materials for the Greater Sydney Region (Corkery, 2019). The Greater Sydney Region Plan identifies that 725,000 new homes are required by 2036 to meet the needs of a growing and changing population. The *NSW State Infrastructure Strategy 2018-2038* and *Future Transport Strategy 2056* also outline significant infrastructure and transport priorities for Greater Sydney and regional NSW (Corkery, 2019). The study indicates that while approved reserves with the existing hard rock quarry sources indicates that there are sufficient approved reserves to satisfy the forecast demand of crushed rock products in the Greater Sydney Basin beyond 2036, this would be influenced by demand from regional areas. The report indicates that the Hunter region is a source of supply for the Greater Sydney Basin. The report, however does not consider the contention on existing approvals or the significant needs of regional NSW and that material may be preferentially used in local areas rather than being transported to the Greater Sydney Area.

The SIA has identified that the key negative social impacts predicted include impacts relating to social amenity (as a result of traffic related impacts); changes to sense of community and community cohesion and culture. In addition to these impacts, stakeholders have raised concerns relating to noise, personal safety, livelihoods and health and wellbeing impacts. Positive impacts of relevance include potential economic benefits to the region and State through employment, procurement and business opportunities. The Revised Project will also lead to a secured availability of construction materials for markets across NSW.

As has been highlighted in the SIA, project development brings benefits and costs that are not always evenly distributed across individuals and stakeholder groups and as a result, where social impacts are predicted it is the role of a SIA to outline how such impacts can or cannot be managed.

Given Daracon's approach of reviewing the Revised Project design to minimise impacts, the social impacts of the Revised Project have been minimised where possible through project design and the proposed management and enhancement approaches.

As outlined in the ADA Report (Umwelt, 2021), the Revised Project has been assessed against the principles of Ecologically Sustainable Development (ESD) as required by the EP&A Act and EP&A Regulation. This assessment has indicated that while the Revised Project will have impacts, these impacts can be effectively managed and mitigated and the development will result in economic benefits. The assessment therefore concluded that the Revised Project is consistent with the principles of ESD and after consideration of the submissions made and the responses provided in this report, there is no change to that conclusion.

The Economic Assessment (refer to Appendix P of the ADA Report) describes a range of positive benefits from the Revised Project that will result at a local, regional and State level. These benefits include:

- continued employment of approximately 22 full time equivalent employees
- the Revised Project is estimated to provide a net benefit of \$58 million to NSW, in NPV terms
- the Revised Project is estimated to generate \$11.5 million in NPV terms for Australia, of which \$3.7 million is attributed to NSW
- the Revised Project is estimated to generate \$1.5 million in royalties, payroll tax and Council rates in NPV terms
- the Revised Project is estimated to provide a net producer surplus attributed to NSW of \$13.5 million in NPV terms.

On this basis, it would be reasonable to consider that with the implementation of the management, mitigation and offset measures proposed by Daracon, the Revised Project will result in a net benefit to the NSW community.

8.0 References

Abacus Tree Services (2016). *Arborist Report – Martins Creek Quarry*.

Australasian Groundwater and Environmental Consultants Pty Ltd (AGE) (2021). *Martins Creek Quarry – Groundwater Impact Assessment*. Report reference G1908B.

Australasian Groundwater and Environmental Consultants Pty Ltd (AGE) (2021a). *Martins Creek Quarry Extension Project – Bore 20CA214711*. Letter prepared for Umwelt (Australia) Pty Ltd, dated 12 October 2021.

Australian Government Initiative (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018). Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.

Conacher Consulting (2021). *Biodiversity Assessment Report prepared for Martins Creek Quarry Extension Project*. Reference 21037. Dated May 2021.

DEC (2007). *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW*. Published by the Department of Environment and Conservation, now EPA. January 2007.

DECCW (2011). *Road Noise Policy (RNP)*.

DSC (2014). *Dungog Council Submission to Road Classification Panel*

EPA (2013). *Rail Infrastructure Noise Guideline (RING)*.

EPA (2016). *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. NSW Environment Protection Authority.

Holcim (2020). *Lynwood Quarry Environmental Air Quality Management Plan*, dated September 2020 FINAL.

Jacobs (2020). *Martins Creek Quarry Extension Project – Air Quality Impact Assessment*. Report prepared for Buttai Gravel Pty Ltd. Final, Revision 1, dated 17 November 2020.

Jacobs (2021). *Air Quality Information for EPA Advice on Submission Report*. Letter prepared for Umwelt (Australia) Pty Ltd, dated 15 November 2021.

Katestone (2011) *NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and / or Minimise Emissions of Particulate Matter from Coal Mining*. Prepared by Katestone Environmental Pty Ltd for NSW Office of Environment and Heritage, December 2010.

Moir Landscape Architecture (2016). *Landscape and Visual Impact Assessment – proposed Martins Creek Quarry Expansion*. Rev A

Monteath & Powys (2014). *Preliminary Environmental Assessment Martins Creek Quarry*.

Monteath & Powys (2016). *Environmental Impact Statement Martins Creek Quarry*.

Niche Environment and Heritage (2016). *Aboriginal Cultural Heritage Assessment Report – Martins Creek Quarry*.

NSW Government (1992). *State Environmental Planning Policy No 33—Hazardous and Offensive Development 1992*.

NSW Department of Finance and Services (2014). *Lower Hunter Water Plan*. ISBN 978-0-7347-4481-4 (web version). Dated January 2014.

NSW Department of Planning and Environment (DPE) (2017). *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (the SIA Guideline).

NSW Government (2018). *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

NSW Government (2019). *Environmental Planning and Assessment Act 1979 No 203*.

NSW Government (2019a). *State Environmental Planning Policy (State and Regional Development) 2011*.

NSW Government (2020). *State Environmental Planning Policy (Koala Habitat Protection) 2020*.

NSW Department of Planning (2011). *Hazardous and Offensive Development Application Guidelines, Applying SEPP 33*.

NSW Department of Planning, Industry and Environment (DPIE) (2021). *State significant development guidelines – preparing a submissions report; Appendix C to the state significant development guidelines*. Dated July 2021.

Peter Bellairs Consulting Pty Ltd (2021). *Martins Creek Quarry Blasting Update Report*.

Plateway Pty Ltd (2021). *Review of Aggregate Distribution by Rail and Rail Logistics Options for Martins Creek Quarry*.

R. W. Corkery & Co. Pty Limited (2019). *Supply and demand profile of geological construction materials for the Greater Sydney Region*. Prepared for Department of Planning and Environment. Report No. 999/02.

Safe Work Australia (2021). *Crystalline silica and silicosis*, <https://www.safeworkaustralia.gov.au/silica#work-activities-that-may-represent>

Safe Work NSW (2021). *Crystalline silica*, <https://www.safework.nsw.gov.au/hazards-a-z/hazardous-chemical/priority-chemicals/crystalline-silica>

SECA Solution (2021). *Martins Creek Quarry Traffic Assessment*. Report reference P0254.

SMEC (2021). *Martins Creek Quarry Haul Routes - Analysis of future pavement maintenance requirements resulting from a proposed increase in quarry truck traffic*.

Umwelt (2020). *Heritage Impact Statement – Martins Creek Quarry Extension Project*.

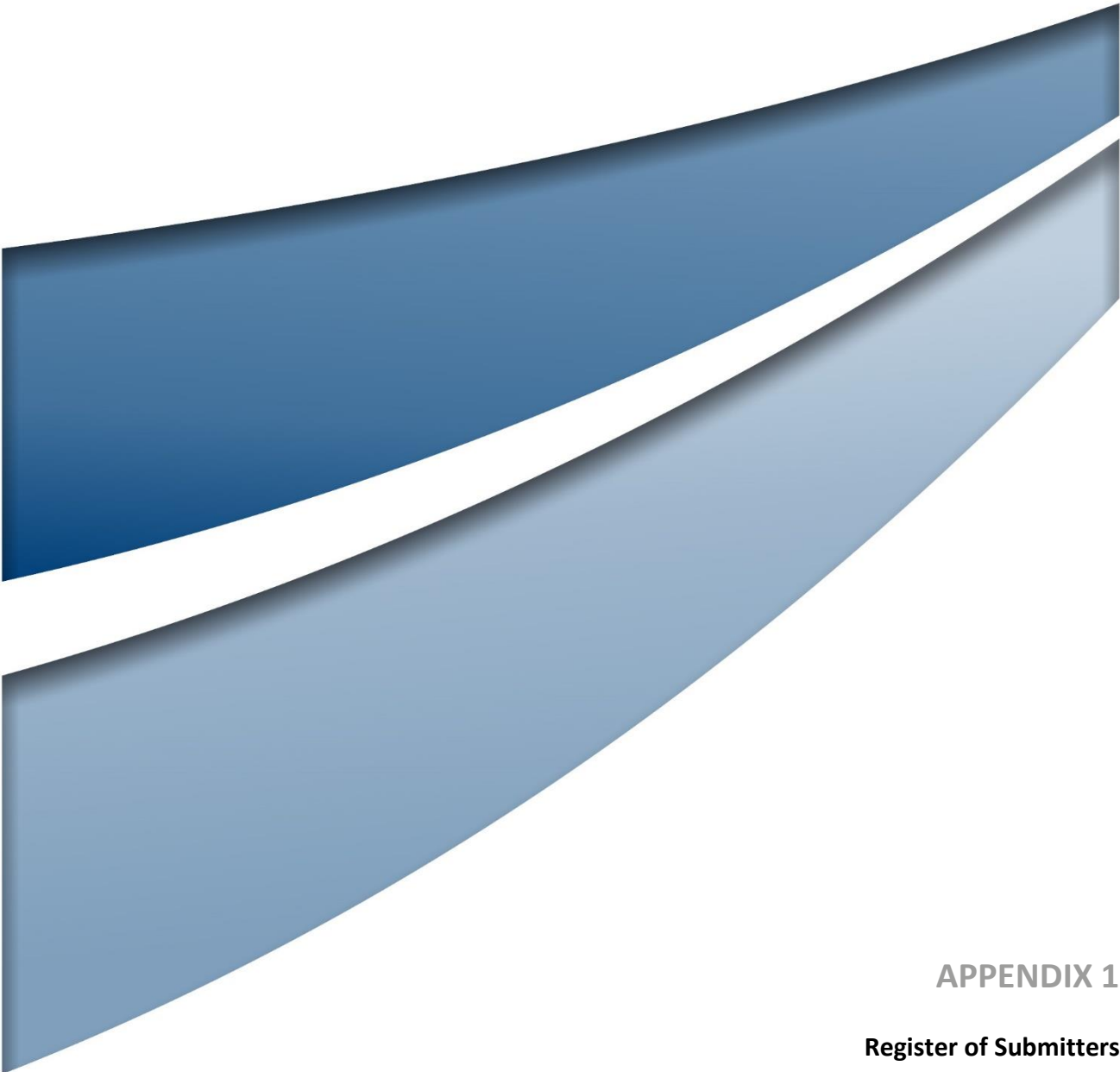
Umwelt (2021). *Amended Development Application and Response to Submissions - Martins Creek Quarry Revised Project*.

Umwelt (2021a). *Surface Water Impact Assessment – Martins Creek Quarry Extension Project*.

Umwelt (2021b). *Noise Impact Assessment – Martins Creek Quarry Extension Project*.

Umwelt (2021c). *Social Impact Assessment – Martins Creek Quarry Extension Project*.

VGT Environmental Compliance Solutions Pty Ltd (VGT) (2021). *Martins Creek Andesite Quarry Geology Assessment*. Prepared for Daracon Group.



APPENDIX 1

Register of Submitters

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
Public Authorities	Environment Protection Authority			Comment	Section 4.1
	Department of Planning, Industry and Environment - Water and Natural Resources Access Regulator			Comment	Section 4.2
	Biodiversity Conservation Division			Comment	Section 4.3
	Transport for NSW			Comment	Section 4.4
	Heritage NSW			Comment	Section 4.5
	Heritage Council of NSW			Comment	Section 4.6
	NSW Resource Regulator			Comment	Section 4.7
	Crown Lands			Comment	Section 4.8
	NSW Department of Primary Industries - Agriculture			Comment	Section 4.9
	Department of Primary Industries - Fisheries			Comment	Section 4.10
	Forestry Corporation of NSW			Comment	Section 4.11
Councils	Dungog Shire Council			Comment	Section 4.12
	Maitland City Council			Object	Section 4.13
	Port Stephens Council			Comment	Section 4.14
Stakeholder Groups	Martins Creek Quarry Action Group	S-25070766	SE-25070767	Object	Section 5.1
	Hunter Environmental Lobby	S-24947111	SE-24947112	Object	Section 5.2
	Paterson Progress Association	S-23206706	SE-23206707	Object	Section 5.3
	Greens NSW	S-24294724	SE-24294725	Object	Section 5.4
	Dungog Regional Tourism	S-23224649	SE-23224650	Object	Section 5.5
	Paterson Historical Society	S-23217938	SE-23217939	Object	Section 5.6
	Birdlife Australia Southern NSW Branch	S-23224462	SE-23224463	Object	Section 5.7
	Hunter Bird Observers Club Inc	S-22721483	SE-22721484	Object	Section 5.8
	Birding NSW	S-25810136	SE-25810137	Object	Section 5.9
	Koala Koalition Econetwork Port Stephens	S-25057753	SE-25057754	Object	Section 5.10
	Save Port Stephens Koalas	S-24971140	SE-24971141	Object	Section 5.11
	Bolwarra Uniting Church	S-23510753	SE-23510754	Object	Section 5.12
Organisation	Tocal College	S-24965611	SE-24965612	Comment	Section 6
	R.M.H Built	S-24998712	SE-24998713	Object	Section 6
	Heritage Plants	S-23307292	SE-23307293	Object	Section 6
	Blindside Rural Pty Ltd	S-25081706	SE-25081707	Object	Section 6
	Rosebrook Sand and Gravel	S-22852814	SE-22852815	Support	
	NPE	S-23010325	SE-23010326	Support	
	Johnson Property Group	S-23280481	SE-23280482	Support	
	Independent Lime and Cement	S-22798091	SE-22798092	Support	
	AWU	S-22894232	SE-22894233	Support	
	Coffey Testing Pty Ltd	S-23427515	SE-23427516	Support	
	Flynn Haulage & Earthmoving Pty Ltd	S-25854707	SE-25854708	Support	
	Roadworx Surfacing Pty Ltd	S-23368721	SE-23368722	Support	
	Qualtest Laboratory (NSW)	S-23491015	SE-23491016	Support	
	Lincom Group	S-23416024	SE-23416025	Support	
	Newcastle Trades Hall Council	S-23000514	SE-23000515	Support	
	Winton Property Group	S-23173609	SE-23173610	Support	
	Rubicon Enviro Pty Ltd	S-23514534	SE-23514535	Support	
	Metromix Pty Ltd	S-23425594	SE-23425595	Support	
	VG T ECS	S-22158074	SE-22158075	Support	
	WesTrac NSW	S-23604969	SE-23604970	Support	
	SC Haulage Pty Ltd	S-23449710	SE-23449711	Support	
Individuals	Christopher Sarroff	S-25070962	SE-25070963	Comment	Section 6
	William Archer	S-23311237	SE-23311238	Comment	Section 6
	Philip Edmonds	S-22749758	SE-22749759	Comment	Section 6
	Name Withheld	S-24585966	SE-24585967	Comment	Section 6
	Name Withheld	S-24889470	SE-24889471	Object	Section 6
	Name Withheld	S-23202296	SE-23202297	Object	Section 6
	Name Withheld	S-24662977	SE-24662978	Object	Section 6
	Name Withheld	S-24588643	SE-24588644	Object	Section 6
	Name Withheld	S-25059472	SE-25059473	Object	Section 6
	Les Johnston	S-24875411	SE-24875412	Object	Section 6
	Janice Haviland	S-24877423	SE-24877424	Object	Section 6
	Name Withheld	S-21236148	SE-21236149	Object	Section 6
	Name Withheld	S-21373368	SE-21373369	Object	Section 6
	Rowan Bourne	S-22348055	SE-22348056	Object	Section 6
	Name Withheld	S-22380101	SE-22380102	Object	Section 6
	Name Withheld	S-22399751	SE-22399752	Object	Section 6
	Neville Kelleher	S-22486459	SE-22486460	Object	Section 6
	Darren Butler	S-22488968	SE-22488969	Object	Section 6
	Graham Taylor	S-22561599	SE-22561600	Object	Section 6
	Name Withheld	S-22733278	SE-22720870	Object	Section 6
	Name Withheld	S-23111279	SE-23111280	Object	Section 6
	Dierdre Howard	S-23119979	SE-23119980	Object	Section 6
	Aaron Solberg	S-23143165	SE-23143166	Object	Section 6
	Alicia Vitale	S-23143175	SE-23143176	Object	Section 6
	Name Withheld	S-23190145	SE-23192058	Object	Section 6
	Mark Adamson	S-23212452	SE-23212453	Object	Section 6
	Name Withheld	S-23213475	SE-23213476	Object	Section 6
	Jan Cheetham	S-23213842	SE-23213843	Object	Section 6
	Mary Adamson	S-23274229	SE-23274230	Object	Section 6

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Sue Arblaster	S-23290881	SE-23290882	Object	Section 6
	Carolyn Bourne	S-23304084	SE-23304085	Object	Section 6
	Ian Bourne	S-23304087	SE-23304088	Object	Section 6
	Bass Randall	S-23307404	SE-23307405	Object	Section 6
	Stephen Blaxhall	S-23311750	SE-23311751	Object	Section 6
	Cathy Cheetham	S-23350077	SE-23350078	Object	Section 6
	Sharon King	S-23392959	SE-23392960	Object	Section 6
	Name Withheld	S-23448505	SE-23448506	Object	Section 6
	Name Withheld	S-23480712	SE-23480713	Object	Section 6
	Christopher Mead	S-23508845	SE-23508846	Object	Section 6
	Name Withheld	S-23538109	SE-23538110	Object	Section 6
	Garry Bailey	S-23910000	SE-23910001	Object	Section 6
	Name Withheld	S-24419873	SE-24419874	Object	Section 6
	Cameron Archer	S-24519819	SE-24519820	Object	Section 6
	Camille Adams	S-24569973	SE-24569974	Object	Section 6
	Name Withheld	S-24589683	SE-24589684	Object	Section 6
	Anthony Fleming	S-24598249	SE-24598250	Object	Section 6
	Robert Mansini	S-24624875	SE-24624876	Object	Section 6
	Phillip Baldwin	S-24644499	SE-24644500	Object	Section 6
	Denis Shanahan	S-24674142	SE-24674143	Object	Section 6
	Frances Shanahan	S-24686084	SE-24686085	Object	Section 6
	Name Withheld	S-24696187	SE-24696188	Object	Section 6
	Name Withheld	S-24696451	SE-24696452	Object	Section 6
	Name Withheld	S-24747013	SE-24747014	Object	Section 6
	Michelle Oberdorf	S-24755159	SE-24755160	Object	Section 6
	Name Withheld	S-24757030	SE-24757031	Object	Section 6
	Rebecca Creswick	S-24766239	SE-24766240	Object	Section 6
	Scott Campbell	S-24814779	SE-24814780	Object	Section 6
	Name Withheld	S-24829230	SE-24829231	Object	Section 6
	Name Withheld	S-24831267	SE-24831268	Object	Section 6
	Name Withheld	S-24831292	SE-24831293	Object	Section 6
	Name Withheld	S-24878261	SE-24878262	Object	Section 6
	Sally-Anne Fitzpatrick	S-24904992	SE-24904993	Object	Section 6
	Ashley Geelan	S-24907184	SE-24907185	Object	Section 6
	Name Withheld	S-24911001	SE-24905023	Object	Section 6
	Name Withheld	S-24911001	SE-24911002	Object	Section 6
	Jodie Jordan	S-24912207	SE-24912208	Object	Section 6
	Name Withheld	S-24912292	SE-24912293	Object	Section 6
	Name Withheld	S-24929990	SE-24929991	Object	Section 6
	Belinda Smith	S-24947717	SE-24947718	Object	Section 6
	Fiona Bailey	S-24980586	SE-24980587	Object	Section 6
	Liz Wills	S-24997472	SE-24997473	Object	Section 6
	Braderick Duncan	S-25047497	SE-25047498	Object	Section 6
	Name Withheld	S-25047627	SE-25047628	Object	Section 6
	Judy Duncan	S-25052984	SE-25052985	Object	Section 6
	David Oberdorf	S-25067241	SE-25067242	Object	Section 6
	Helen Macaulay	S-25072713	SE-25072714	Object	Section 6
	Name Withheld	S-25869838	SE-25869839	Object	Section 6
	Robert O'Brien	S-25873482	SE-25873483	Object	Section 6
	Name Withheld	S-21234643	SE-21234644	Object	Section 6
	Name Withheld	S-21237494	SE-21237495	Object	Section 6
	Name Withheld	S-21240265	SE-21240266	Object	Section 6
	Name Withheld	S-21240541	SE-21240542	Object	Section 6
	John Quinn	S-21329457	SE-21329458	Object	Section 6
	Name Withheld	S-21527552	SE-21527553	Object	Section 6
	Terry Holdom	S-21884455	SE-21900456	Object	Section 6
	Name Withheld	S-22053557	SE-22053558	Object	Section 6
	Name Withheld	S-22622929	SE-22622930	Object	Section 6
	Andrew Wernbacher	S-22625827	SE-22625828	Object	Section 6
	Harold Hutchings	S-22672300	SE-22672301	Object	Section 6
	Rachel Gunn	S-22716013	SE-22716014	Object	Section 6
	Gregory Billingham	S-22716024	SE-22716025	Object	Section 6
	Claudia Stockenhuber	S-22877528	SE-22877529	Object	Section 6
	Name Withheld	S-22923611	SE-22923612	Object	Section 6
	Name Withheld	S-23062871	SE-23062872	Object	Section 6
	Name Withheld	S-23062890	SE-23062891	Object	Section 6
	Iwona Hetherington	S-23068206	SE-23068207	Object	Section 6
	Name Withheld	S-23071177	SE-23071178	Object	Section 6
	John Whittaker	S-23079959	SE-23079960	Object	Section 6
	Kimberley Evans	S-23089444	SE-23089445	Object	Section 6
	Name Withheld	S-23102788	SE-23102789	Object	Section 6
	Name Withheld	S-23106271	SE-23106272	Object	Section 6
	Kelvin Rumble	S-23106306	SE-23106307	Object	Section 6
	Megan Ridgers	S-23108963	SE-23108964	Object	Section 6
	Charlotte Anderson	S-23112043	SE-23112044	Object	Section 6
	Name Withheld	S-23114676	SE-23114677	Object	Section 6
	Name Withheld	S-23114687	SE-23114688	Object	Section 6

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Name Withheld	S-23114692	SE-23114693	Object	Section 6
	John Brown	S-23117415	SE-23117416	Object	Section 6
	Name Withheld	S-23136418	SE-23136419	Object	Section 6
	Name Withheld	S-23144526	SE-23144527	Object	Section 6
	Joanna Krause	S-23144644	SE-23144645	Object	Section 6
	Peter Cook	S-23145712	SE-23145713	Object	Section 6
	Alison Cook	S-23165363	SE-23165364	Object	Section 6
	Name Withheld	S-23180227	SE-23180228	Object	Section 6
	Name Withheld	S-23189734	SE-23189735	Object	Section 6
	Rochelle Wade	S-23190015	SE-23190016	Object	Section 6
	Name Withheld	S-23190021	SE-23190022	Object	Section 6
	Gaile Witt	S-23195579	SE-23195580	Object	Section 6
	Kathleen Allen	S-23218803	SE-23218804	Object	Section 6
	Name Withheld	S-23265224	SE-23265225	Object	Section 6
	Jenny Carey	S-23265993	SE-23265994	Object	Section 6
	Name Withheld	S-23305182	SE-23305183	Object	Section 6
	Marie-Ann Thornton	S-23305599	SE-23305600	Object	Section 6
	Name Withheld	S-23308047	SE-23308048	Object	Section 6
	Benjamin Allen	S-23327212	SE-23327213	Object	Section 6
	Mitchell Stambolie	S-23342407	SE-23342408	Object	Section 6
	Name Withheld	S-23343224	SE-23343225	Object	Section 6
	Name Withheld	S-23374439	SE-23374440	Object	Section 6
	Scott Elloy	S-23377674	SE-23377675	Object	Section 6
	Dylan Walsh	S-23378059	SE-23378060	Object	Section 6
	Rebecca Moder	S-23378653	SE-23378654	Object	Section 6
	Peter Harold	S-23420238	SE-23420239	Object	Section 6
	Carolyn Sjostedt	S-23434855	SE-23434856	Object	Section 6
	Russell Digby	S-23436783	SE-23436784	Object	Section 6
	Terence Sjostedt	S-23438834	SE-23438835	Object	Section 6
	Lintje Tjahjadi	S-23446314	SE-23446315	Object	Section 6
	Name Withheld	S-23467261	SE-23467262	Object	Section 6
	Jennifer Hutchings	S-23472800	SE-23472801	Object	Section 6
	Name Withheld	S-23512682	SE-23512683	Object	Section 6
	Peter Nelson	S-23512844	SE-23512845	Object	Section 6
	Name Withheld	S-23557785	SE-23557786	Object	Section 6
	Felicity Hegarty	S-24365099	SE-24365100	Object	Section 6
	Name Withheld	S-24365126	SE-24365127	Object	Section 6
	Matt Curran	S-24544214	SE-24544215	Object	Section 6
	Name Withheld	S-24552504	SE-24552505	Object	Section 6
	Name Withheld	S-24570112	SE-24570113	Object	Section 6
	Chloe Ellenbacher	S-24588317	SE-24588318	Object	Section 6
	Pam Gentle	S-24588611	SE-24588612	Object	Section 6
	Samantha Primmer	S-24601223	SE-24601224	Object	Section 6
	Cathy Brady	S-24621463	SE-24621464	Object	Section 6
	Mark Brady	S-24622250	SE-24622251	Object	Section 6
	Name Withheld	S-24626141	SE-24626142	Object	Section 6
	Name Withheld	S-24626147	SE-24626148	Object	Section 6
	Dave Roberts	S-24626190	SE-24626191	Object	Section 6
	Robert Parsons	S-24627875	SE-24627876	Object	Section 6
	James Taylor	S-24629021	SE-24629022	Object	Section 6
	Name Withheld	S-24629190	SE-24629191	Object	Section 6
	Suzanne Second	S-24630103	SE-24630104	Object	Section 6
	Name Withheld	S-24633883	SE-24633884	Object	Section 6
	Name Withheld	S-24633895	SE-24633896	Object	Section 6
	Ann Pollard	S-24636527	SE-24636528	Object	Section 6
	Mark Cure	S-24636777	SE-24636778	Object	Section 6
	Dene French	S-24636783	SE-24636784	Object	Section 6
	Name Withheld	S-24639252	SE-24639253	Object	Section 6
	Sandra Cure	S-24639729	SE-24639730	Object	Section 6
	Name Withheld	S-24678458	SE-24678459	Object	Section 6
	Brian Watson	S-24694586	SE-24694587	Object	Section 6
	Name Withheld	S-24698158	SE-24698159	Object	Section 6
	Name Withheld	S-24698160	SE-24698161	Object	Section 6
	Name Withheld	S-24716633	SE-24716634	Object	Section 6
	Name Withheld	S-24760957	SE-24760958	Object	Section 6
	Name Withheld	S-24760997	SE-24760998	Object	Section 6
	Name Withheld	S-24785219	SE-24785220	Object	Section 6
	Name Withheld	S-24792760	SE-24792761	Object	Section 6
	John Beesley	S-24796727	SE-24796728	Object	Section 6
	Name Withheld	S-24820760	SE-24820761	Object	Section 6
	Name Withheld	S-24833989	SE-24833990	Object	Section 6
	Name Withheld	S-24834713	SE-24834714	Object	Section 6
	Name Withheld	S-24857976	SE-24857977	Object	Section 6
	Name Withheld	S-24885280	SE-24885281	Object	Section 6
	Jennie Curran	S-24891787	SE-24891788	Object	Section 6
	Name Withheld	S-24901569	SE-24901570	Object	Section 6
	Gemma Mullins	S-24902538	SE-24902539	Object	Section 6

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Brooke Farrell	S-24903687	SE-24903688	Object	Section 6
	Name Withheld	S-24904025	SE-24904026	Object	Section 6
	Name Withheld	S-24904975	SE-24904976	Object	Section 6
	Kate Fitzpatrick-Barr	S-24904985	SE-24904986	Object	Section 6
	Katrina Beavis	S-24904995	SE-24904996	Object	Section 6
	Michael Stockenhuber	S-24907075	SE-24907076	Object	Section 6
	Name Withheld	S-24912230	SE-24912231	Object	Section 6
	Name Withheld	S-24914459	SE-24914460	Object	Section 6
	Name Withheld	S-24936588	SE-24936589	Object	Section 6
	Libby Cusick	S-24946775	SE-24946776	Object	Section 6
	Amanda Kirkman	S-24962601	SE-24962602	Object	Section 6
	Murray Wilks	S-24974539	SE-24974540	Object	Section 6
	Rhonda Quinn	S-24979282	SE-24979283	Object	Section 6
	Name Withheld	S-24979443	SE-24979444	Object	Section 6
	Stuart Fullerton	S-24980218	SE-24980219	Object	Section 6
	Michele Keith	S-24991214	SE-24991215	Object	Section 6
	Jamie Schofield	S-24994015	SE-24994016	Object	Section 6
	Name Withheld	S-25002972	SE-25002973	Object	Section 6
	Laura Simmons	S-25007219	SE-25007220	Object	Section 6
	Nicole Lightfoot	S-25008209	SE-25008210	Object	Section 6
	Name Withheld	S-25063803	SE-25063804	Object	Section 6
	Name Withheld	S-25063824	SE-25063825	Object	Section 6
	Tony Bidstrup	S-25063827	SE-25063828	Object	Section 6
	Name Withheld	S-25074220	SE-25074221	Object	Section 6
	Name Withheld	S-25075721	SE-25075722	Object	Section 6
	Name Withheld	S-25075725	SE-25075726	Object	Section 6
	Name Withheld	S-25080708	SE-25080709	Object	Section 6
	Name Withheld	S-25080715	SE-25080716	Object	Section 6
	Alexander Fletcher	S-25081233	SE-25081234	Object	Section 6
	Name Withheld	S-25081720	SE-25081721	Object	Section 6
	Name Withheld	S-25082245	SE-25082246	Object	Section 6
	A & J de Graff	S-25826331	SE-25826332	Object	Section 6
	Name Withheld	S-25081505	SE-25081506	Object	Section 6
	Neil Ritchie	S-23348650	SE-23348651	Object	Section 6
	Margarete Ritchie	S-25079959	SE-25079960	Object	Section 6
	Paul Bennetts	S-22156553	SE-22156554	Object	Section 6
	Name Withheld	S-22861324	SE-22861325	Object	Section 6
	Trina Wilson	S-23119529	SE-23119530	Object	Section 6
	Trina Wilson	S-23119529	SE-25047513	Object	Section 6
	Name Withheld	S-23143152	SE-23143153	Object	Section 6
	Dennis Mayo	S-23383459	SE-23383460	Object	Section 6
	Name Withheld	S-23443425	SE-23443426	Object	Section 6
	Name Withheld	S-23520212	SE-23520213	Object	Section 6
	Name Withheld	S-24999009	SE-24999010	Object	Section 6
	Aaron Worley	S-25038964	SE-25038965	Object	Section 6
	Gillian Adamson	S-23090053	SE-23090054	Object	Section 6
	Ryan Williams	S-23277026	SE-23277027	Object	Section 6
	Louise Askew	S-24859207	SE-24859208	Object	Section 6
	Barry Laing	S-22130718	SE-22130719	Object	Section 6
	Steven Jenkins	S-24908985	SE-24908986	Object	Section 6
	Ellie Huckstadt	S-23377635	SE-23377636	Object	Section 6
	Name Withheld	S-25070798	SE-25070799	Object	Section 6
	Tim Scrace	S-25045996	SE-25045997	Object	Section 6
	Name Withheld	S-23675018	SE-23675019	Object	Section 6
	Susan Hellyer	S-24825957	SE-24825958	Object	Section 6
	Marilyn Mitchell	S-24629179	SE-24629180	Object	Section 6
	Alan Mitchell	S-24638304	SE-24638305	Object	Section 6
	Name Withheld	S-23119599	SE-23119600	Object	Section 6
	Bianca Simon	S-23119631	SE-23119632	Object	Section 6
	Name Withheld	S-23203146	SE-23203147	Object	Section 6
	Diana Thorvaldson	S-23210815	SE-23210816	Object	Section 6
	Ian Crouch	S-23378940	SE-23378941	Object	Section 6
	Glenn Albrecht	S-23413495	SE-23413496	Object	Section 6
	Name Withheld	S-23418791	SE-23418792	Object	Section 6
	Julia Wokes	S-24634304	SE-24634305	Object	Section 6
	Name Withheld	S-24753898	SE-24753899	Object	Section 6
	Carolyn Sharkey	S-25003730	SE-25003731	Object	Section 6
	Kristen Rutter	S-25049962	SE-25049963	Object	Section 6
	Brian Garrett	S-25064735	SE-25064736	Object	Section 6
	Name Withheld	S-25071510	SE-25071511	Object	Section 6
	Name Withheld	S-25079708	SE-25079709	Object	Section 6
	Name Withheld	S-25080711	SE-25080712	Object	Section 6
	Name Withheld	S-25080719	SE-25080720	Object	Section 6
	Rebecca Sinclair	S-23370622	SE-23370623	Object	Section 6
	Christine Belcher	S-23448456	SE-23448457	Object	Section 6
	Sam Bliss	S-24185935	SE-24185936	Object	Section 6
	Brad Tighe	S-24626195	SE-24626196	Object	Section 6

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Brendan Maher	S-24824362	SE-24824363	Object	Section 6
	Name Withheld	S-24826055	SE-24826056	Object	Section 6
	Hayley Maher	S-24826169	SE-24826170	Object	Section 6
	Wendy White	S-24904208	SE-24904209	Object	Section 6
	Margaret Edwards	S-24986567	SE-24986568	Object	Section 6
	Name Withheld	S-25066997	SE-25066998	Object	Section 6
	Name Withheld	S-22721984	SE-22721985	Object	Section 6
	Name Withheld	S-23514970	SE-23514971	Object	Section 6
	Neil Ashpole	S-24777928	SE-24777929	Object	Section 6
	Lynne McNairn	S-23411069	SE-23411070	Object	Section 6
	Brigid Dowsett	S-24638225	SE-24638226	Object	Section 6
	Name Withheld	S-24628662	SE-24628663	Object	Section 6
	Name Withheld	S-23340393	SE-23340394	Object	Section 6
	Tessa Hyde	S-24856011	SE-24856012	Object	Section 6
	Name Withheld	S-23422710	SE-23422711	Object	Section 6
	Name Withheld	S-24903800	SE-24903801	Object	Section 6
	Name Withheld	S-23308707	SE-23308708	Object	Section 6
	Amanda Strong	S-23359588	SE-23359589	Object	Section 6
	Eric Bell	S-23217823	SE-23217824	Object	Section 6
	Ros Dunn	S-23240678	SE-23240679	Object	Section 6
	David Sawtell	S-22161966	SE-22161967	Object	Section 6
	Name Withheld	S-25040231	SE-25040232	Object	Section 6
	Jillian Stibbard	S-22721988	SE-22721989	Object	Section 6
	Sophie Stibbard	S-22827785	SE-22827786	Object	Section 6
	Karen Stevenson	S-23053000	SE-23053001	Object	Section 6
	Name Withheld	S-23136351	SE-23136352	Object	Section 6
	Name Withheld	S-23144546	SE-23144547	Object	Section 6
	Name Withheld	S-25075474	SE-25075475	Object	Section 6
	Craig Lee	S-22955993	SE-22955994	Object	Section 6
	Craig Lee	S-22955993	SE-23344808	Object	Section 6
	Jodie Cox	S-25057211	SE-25057212	Object	Section 6
	Sabina Campbell	S-23216525	SE-23216526	Object	Section 6
	Name Withheld	S-24989290	SE-24989291	Object	Section 6
	Karen Graham	S-24634262	SE-24634263	Object	Section 6
	Louise Cameron	S-25072206	SE-25072207	Object	Section 6
	Amanda Collis	S-23143162	SE-23143163	Object	Section 6
	Michael Shanahan	S-23146262	SE-23146263	Object	Section 6
	Name Withheld	S-23149477	SE-23149478	Object	Section 6
	Name Withheld	S-24577646	SE-24580713	Object	Section 6
	Name Withheld	S-24694958	SE-24694959	Object	Section 6
	Catherine Austin	S-24753907	SE-24753908	Object	Section 6
	Kayla Shanahan	S-24759290	SE-24759291	Object	Section 6
	Paul Williams	S-24785870	SE-24785871	Object	Section 6
	Alicia Faul	S-24988187	SE-24988188	Object	Section 6
	Haley Lantry	S-25070789	SE-25070790	Object	Section 6
	Daniel Hespe	S-21524040	SE-21524041	Object	Section 6
	Michael Walsh	S-22706061	SE-22706062	Object	Section 6
	Name Withheld	S-22806839	SE-22806840	Object	Section 6
	Alison Coffey	S-23224469	SE-23224470	Object	Section 6
	Anne Robinson	S-23271546	SE-23271547	Object	Section 6
	Name Withheld	S-23308740	SE-23308741	Object	Section 6
	Charlie Bell	S-23358216	SE-23358217	Object	Section 6
	Geoffrey Kelly	S-23827957	SE-23827958	Object	Section 6
	Name Withheld	S-24630240	SE-24630241	Object	Section 6
	Name Withheld	S-24679745	SE-24679746	Object	Section 6
	Donald Borer	S-24827207	SE-24827208	Object	Section 6
	Name Withheld	S-24977846	SE-24977847	Object	Section 6
	Name Withheld	S-24977846	SE-24977858	Object	Section 6
	Name Withheld	S-24982457	SE-24982458	Object	Section 6
	Fiona Walsh	S-24998476	SE-24998477	Object	Section 6
	Stephanie Baj	S-25061227	SE-25061228	Object	Section 6
	Name Withheld	S-25067224	SE-25067225	Object	Section 6
	Jocelyn R Collieran	S-25826207	SE-25826208	Object	Section 6
	Name Withheld	S-24831288	SE-24831289	Object	Section 6
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	Marion Sharman	S-24581571	SE-24581572	Object	Section 6
	Name Withheld	S-24587708	SE-24587709	Object	Section 6
	Melissa Branda	S-24597710	SE-24597711	Object	Section 6
	Name Withheld	S-24634212	SE-24634213	Object	Section 6
	Vince Belcher	S-24906634	SE-24906635	Object	Section 6
	Name Withheld	S-24992709	SE-24992710	Object	Section 6
	Name Withheld	S-22051179	SE-22051180	Object	Section 6
	Leanne Thompson	S-21478207	SE-21478208	Object	Section 6
	Name Withheld	S-22306969	SE-22306970	Object	Section 6
	Name Withheld	S-22366814	SE-22366815	Object	Section 6
	Kerry Broad	S-22992566	SE-22992567	Object	Section 6

Appendix A - Submissions Register

Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Claudia Zurcher	S-23003468	SE-23003469	Object	Section 6
	Claudia Zurcher	S-23003468	SE-23352623	Object	Section 6
	Name Withheld	S-23023126	SE-23023127	Object	Section 6
	Name Withheld	S-23104051	SE-23104052	Object	Section 6
	Name Withheld	S-23114581	SE-23114582	Object	Section 6
	Steve Bower	S-23190024	SE-23190025	Object	Section 6
	Name Withheld	S-23245669	SE-23245670	Object	Section 6
	Name Withheld	S-23260232	SE-23260233	Object	Section 6
	Name Withheld	S-23260257	SE-23260258	Object	Section 6
	Jill & Terry Copeland	S-23299259	SE-23299260	Object	Section 6
	Mark Grant	S-23349795	SE-23349796	Object	Section 6
	Name Withheld	S-23352562	SE-23352563	Object	Section 6
	David Pritchard	S-23352592	SE-23352593	Object	Section 6
	Name Withheld	S-23366982	SE-23366983	Object	Section 6
	Jennifer Bishop	S-24638774	SE-24638775	Object	Section 6
	Sheree Grant	S-24724501	SE-24724502	Object	Section 6
	Name Withheld	S-24730458	SE-24730459	Object	Section 6
	Name Withheld	S-24800060	SE-24800061	Object	Section 6
	Name Withheld	S-24803234	SE-24803235	Object	Section 6
	Name Withheld	S-24855716	SE-24855717	Object	Section 6
	Ben Paterson	S-24879567	SE-24879568	Object	Section 6
	Ann Longley	S-24965489	SE-24965490	Object	Section 6
	Name Withheld	S-24968224	SE-24968225	Object	Section 6
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	Name Withheld	S-25003739	SE-25003740	Object	Section 6
	Name Withheld	S-25070979	SE-25070980	Object	Section 6
	Gayle Dobson	S-25071017	SE-25071018	Object	Section 6
	Kathy Isherwood	S-25074245	SE-25074246	Object	Section 6
	Name Withheld	S-25079956	SE-25079957	Object	Section 6
	Name Withheld	S-25877257	SE-25877258	Object	Section 6
	Beryl Priestley	S-25877282	SE-25877283	Object	Section 6
	Loretta Saunders	S-25877360	SE-25877361	Object	Section 6
	Stewart Bray	S-24988040	SE-24988041	Object	Section 6
	Meg Bray	S-25047630	SE-25047631	Object	Section 6
	Ruth McFayden	S-25869782	SE-25869783	Object	Section 6
	Lisa Ellicott	S-25005957	SE-25005958	Object	Section 6
	Name Withheld	S-21462457	SE-21462458	Object	Section 6
	Aidan Foy	S-22439958	SE-22439959	Object	Section 6
	Tim Ryan	S-22722004	SE-22722005	Object	Section 6
	Nina Curtis	S-23293331	SE-23293332	Object	Section 6
	Bethany Wozniak	S-24752366	SE-24752367	Object	Section 6
	Anne Hodgson	S-24826152	SE-24826153	Object	Section 6
	Catherine Craven	S-24896727	SE-24896728	Object	Section 6
	Name Withheld	S-24906622	SE-24906623	Object	Section 6
	Robyn Woodhouse	S-24907204	SE-24907205	Object	Section 6
	Ian Hodgson	S-24908998	SE-24908999	Object	Section 6
	Andrew Barnes	S-25061246	SE-25061247	Object	Section 6
	Vicki Edge	S-25070760	SE-25061730	Object	Section 6
	Vicki Edge	S-25070760	SE-25061751	Object	Section 6
	Vicki Edge	S-25070760	SE-25070761	Object	Section 6
	Hilary Foy	S-25849372	SE-25849373	Object	Section 6
	Name Withheld	S-23280428	SE-23280429	Object	Section 6
	Name Withheld	S-23301600	SE-23301601	Object	Section 6
	Name Withheld	S-23305639	SE-23305640	Object	Section 6
	Name Withheld	S-24986586	SE-24986587	Object	Section 6
	Nigel Waters	S-25069004	SE-25069005	Object	Section 6
	Cam Fields	S-23515717	SE-23515718	Object	Section 6
	Jan Watson	S-26268706	SE-26268707	Object	Section 6
	Name Withheld	S-24909327	SE-24909328	Object	Section 6
	Angus McGee	S-21209244	SE-21209245	Object	Section 6
	Carly McGee	S-21238307	SE-21238308	Object	Section 6
	Name Withheld	S-21330708	SE-21330709	Object	Section 6
	Name Withheld	S-21372645	SE-21372646	Object	Section 6
	Name Withheld	S-22164812	SE-22164813	Object	Section 6
	Chris Wokes	S-22299860	SE-22299861	Object	Section 6
	Michael Dooley	S-22366610	SE-22366611	Object	Section 6
	Name Withheld	S-22394060	SE-22394061	Object	Section 6
	Jonathon Keppie	S-22643612	SE-22643613	Object	Section 6
	Troy Iuliano	S-22657781	SE-22657782	Object	Section 6
	Tracey Iuliano	S-22657885	SE-22657886	Object	Section 6
	Jordan Saunders	S-22672979	SE-22672980	Object	Section 6
	Name Withheld	S-22697785	SE-22697786	Object	Section 6
	Heidi Barker	S-22720481	SE-22720482	Object	Section 6
	Brendan Keppie	S-22722009	SE-22722010	Object	Section 6
	Name Withheld	S-22832147	SE-22832148	Object	Section 6
	Neil Ranford	S-22904720	SE-22904721	Object	Section 6
	Margie Baillie	S-22993494	SE-22993495	Object	Section 6

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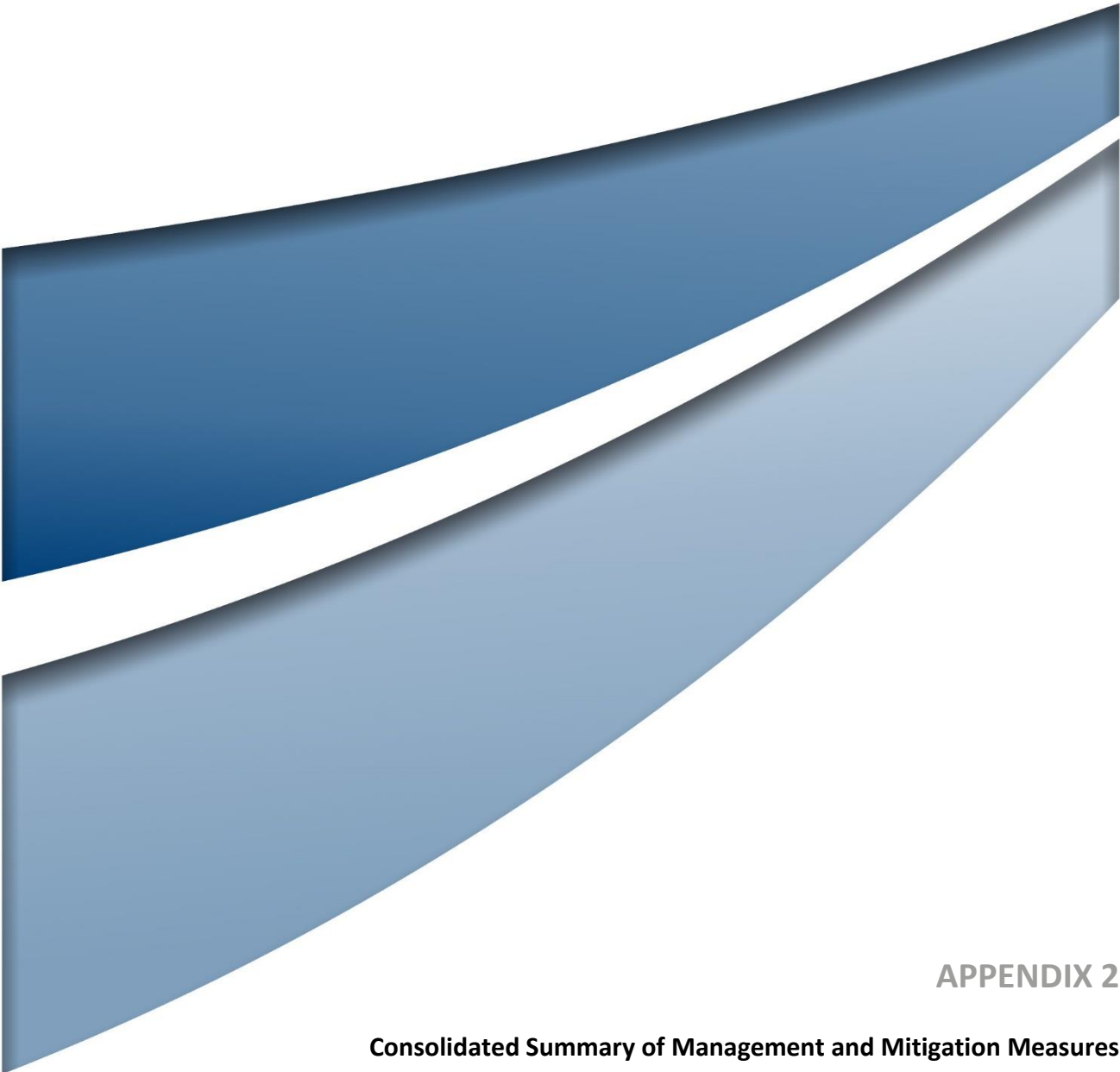
Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Margie Baillie	S-22993494	SE-23114690	Object	Section 6
	Andre Serra	S-23023793	SE-23023794	Object	Section 6
	Name Withheld	S-23028508	SE-23028509	Object	Section 6
	Dylan Hopkins	S-23028972	SE-23028973	Object	Section 6
	Carol Cairney	S-23028974	SE-23023791	Object	Section 6
	Karen Newby	S-23029474	SE-23029475	Object	Section 6
	Name Withheld	S-23078712	SE-23078713	Object	Section 6
	Name Withheld	S-23109019	SE-23109020	Object	Section 6
	Scott Collins	S-23111248	SE-23111249	Object	Section 6
	Catherine Varcoe	S-23112066	SE-23112067	Object	Section 6
	Name Withheld	S-23112419	SE-23112420	Object	Section 6
	Garry Clements	S-23119504	SE-23119505	Object	Section 6
	Nicole Eslick	S-23136361	SE-23136362	Object	Section 6
	Alan Cory	S-23136376	SE-23136377	Object	Section 6
	Name Withheld	S-23142995	SE-23142996	Object	Section 6
	Sabrina Barnett	S-23143178	SE-23143179	Object	Section 6
	Nicholas Adamson	S-23143206	SE-23143207	Object	Section 6
	Solene Pichereau	S-23143230	SE-23143231	Object	Section 6
	Name Withheld	S-23144625	SE-23144626	Object	Section 6
	Natalie van der Merwe	S-23144652	SE-23144653	Object	Section 6
	Name Withheld	S-23145811	SE-23145812	Object	Section 6
	Gregory Barry	S-23175311	SE-23175605	Object	Section 6
	Ann Callaghan	S-23207099	SE-23207100	Object	Section 6
	Chris Mury	S-23213937	SE-23213938	Object	Section 6
	Jennifer Ranford	S-23214681	SE-23214682	Object	Section 6
	Michael Cairney	S-23221016	SE-23221017	Object	Section 6
	Name Withheld	S-23222078	SE-23222079	Object	Section 6
	Stephen Sneddon	S-23222081	SE-23222082	Object	Section 6
	Mark Burgmann	S-23263985	SE-23263986	Object	Section 6
	Robert Christie	S-23266208	SE-23266209	Object	Section 6
	Jill Mooney	S-23268737	SE-23268738	Object	Section 6
	Name Withheld	S-23276182	SE-23276183	Object	Section 6
	Kaaren Lyle	S-23282908	SE-23282909	Object	Section 6
	Malcolm Henry	S-23294579	SE-23294580	Object	Section 6
	Name Withheld	S-23304180	SE-23304181	Object	Section 6
	Brent Eslick	S-23305171	SE-23305172	Object	Section 6
	Michelle Wright	S-23309286	SE-23309287	Object	Section 6
	Judy Henry	S-23328905	SE-23328906	Object	Section 6
	Todd Oldfield	S-23361441	SE-23361894	Object	Section 6
	Name Withheld	S-23364882	SE-23364883	Object	Section 6
	Suzanne Crouch	S-23377075	SE-23377076	Object	Section 6
	Ashton Fox	S-23379962	SE-23379963	Object	Section 6
	Name Withheld	S-23405823	SE-23405824	Object	Section 6
	David Day	S-23408221	SE-23408222	Object	Section 6
	Name Withheld	S-23421627	SE-23421628	Object	Section 6
	Name Withheld	S-23446283	SE-23446284	Object	Section 6
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	David Whiteley	S-23452458	SE-23452459	Object	Section 6
	Robert Booth	S-23466167	SE-23466168	Object	Section 6
	Clare James	S-23492999	SE-23493000	Object	Section 6
	Peter Keppie	S-23575489	SE-23575490	Object	Section 6
	Sue Jakes	S-24000223	SE-24000224	Object	Section 6
	Frank van der Merwe	S-24185410	SE-24185411	Object	Section 6
	Angus Duguid	S-24243175	SE-24243176	Object	Section 6
	Karen Oldfield	S-24401462	SE-24401463	Object	Section 6
	Suzanne Wells	S-24413871	SE-24413872	Object	Section 6
	Pamela Doughty	S-24488942	SE-24488943	Object	Section 6
	Name Withheld	S-24586533	SE-24586534	Object	Section 6
	Name Withheld	S-24590711	SE-24590712	Object	Section 6
	Phillip Ellicott	S-24607714	SE-24607715	Object	Section 6
	Brad Shrimpton	S-24624878	SE-24624879	Object	Section 6
	Ella Foster	S-24627721	SE-24627722	Object	Section 6
	Joanne Clifford	S-24629192	SE-24629193	Object	Section 6
	Wesley Bungay	S-24634193	SE-24634194	Object	Section 6
	Melanie Mury	S-24634229	SE-24634230	Object	Section 6
	Name Withheld	S-24634233	SE-24634234	Object	Section 6
	Name Withheld	S-24634244	SE-24634245	Object	Section 6
	Michelle Toews	S-24637844	SE-24637845	Object	Section 6
	Name Withheld	S-24639213	SE-24639214	Object	Section 6
	Julie White	S-24639457	SE-24639458	Object	Section 6
	Bruce Clifford	S-24639987	SE-24639988	Object	Section 6
	Lisa Bungay	S-24639990	SE-24639991	Object	Section 6
	Name Withheld	S-24660094	SE-24660095	Object	Section 6
	Name Withheld	S-24660173	SE-24660174	Object	Section 6
	Name Withheld	S-24696051	SE-24696263	Object	Section 6
	Name Withheld	S-24752356	SE-24752357	Object	Section 6
	Andrew Amos	S-24759327	SE-24759328	Object	Section 6

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Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Name Withheld	S-24793646	SE-24794740	Object	Section 6
	Name Withheld	S-24820068	SE-24820069	Object	Section 6
	Kristine Griffin	S-24826976	SE-24826977	Object	Section 6
	Name Withheld	S-24837355	SE-24837356	Object	Section 6
	Name Withheld	S-24865043	SE-24865044	Object	Section 6
	Cathy Easdown	S-24871301	SE-24871302	Object	Section 6
	Name Withheld	S-24901243	SE-24901244	Object	Section 6
	Name Withheld	S-24901345	SE-24901346	Object	Section 6
	Alison Cory	S-24912234	SE-24912235	Object	Section 6
	Brad Bidner	S-24929714	SE-24929715	Object	Section 6
	Pamela Ann Atkinson	S-24936591	SE-24936592	Object	Section 6
	Michelle McPherson	S-24959985	SE-24959986	Object	Section 6
	Melissa Hoban	S-24971178	SE-24971179	Object	Section 6
	William White	S-24972205	SE-24984956	Object	Section 6
	Name Withheld	S-24972552	SE-24972553	Object	Section 6
	Paul Evans	S-24977830	SE-24977831	Object	Section 6
	Chris Atkinson	S-24985788	SE-24985789	Object	Section 6
	Connor Nash	S-24986205	SE-24990456	Object	Section 6
	Sallie Hanlon	S-24995210	SE-24995211	Object	Section 6
	Pamela Munson	S-24997457	SE-24997458	Object	Section 6
	Name Withheld	S-25006958	SE-25006959	Object	Section 6
	Tracey Showman	S-25008273	SE-25008274	Object	Section 6
	Name Withheld	S-25038961	SE-25038962	Object	Section 6
	Name Withheld	S-25045225	SE-25045226	Object	Section 6
	Janet Piper	S-25047091	SE-25047092	Object	Section 6
	Name Withheld	S-25047181	SE-25047182	Object	Section 6
	Name Withheld	S-25047523	SE-25047524	Object	Section 6
	Elizabeth Gibson	S-25047544	SE-25047545	Object	Section 6
	Name Withheld	S-25047577	SE-25047578	Object	Section 6
	Name Withheld	S-25047604	SE-25047605	Object	Section 6
	David Latter	S-25053024	SE-25053025	Object	Section 6
	Anthony Huckstadt	S-25059478	SE-25059479	Object	Section 6
	Name Withheld	S-25063721	SE-25063722	Object	Section 6
	Adele Mitchell	S-25063723	SE-25063724	Object	Section 6
	Name Withheld	S-25070742	SE-25070743	Object	Section 6
	Name Withheld	S-25070795	SE-25070796	Object	Section 6
	Kimberley Parsons	S-25070999	SE-25071000	Object	Section 6
	Name Withheld	S-25071040	SE-25071041	Object	Section 6
	Name Withheld	S-25072964	SE-25072965	Object	Section 6
	Sergio Diez Alvarez	S-25074217	SE-25074218	Object	Section 6
	Name Withheld	S-25074544	SE-25074545	Object	Section 6
	Name Withheld	S-25078723	SE-25078724	Object	Section 6
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	Zane Swingler	S-25082224	SE-25082225	Object	Section 6
	Name Withheld	S-25082240	SE-25082241	Object	Section 6
	Ben Crebert	S-25082469	SE-25082470	Object	Section 6
	Chrissy Cabot	S-25082481	SE-25082482	Object	Section 6
	Steve & Penny Griffiths	S-25778547	SE-25778548	Object	Section 6
	Avice Bailey	S-25789662	SE-25789663	Object	Section 6
	Tom Collins	S-25830416	SE-25830417	Object	Section 6
	Susan Forester	S-25854711	SE-25854712	Object	Section 6
	Geoff and Colleen Keppie	S-25858268	SE-25858269	Object	Section 6
	Summer and Scott Norton	S-25869840	SE-25869841	Object	Section 6
	Alison Pitkin	S-25871655	SE-25871656	Object	Section 6
	Michelle Sneddon	S-25884713	SE-25884714	Object	Section 6
	Janet Steele	S-25885456	SE-25885457	Object	Section 6
	Name Withheld	S-24696579	SE-24696580	Object	Section 6
	Liz McCann	S-23305556	SE-23305557	Object	Section 6
	Zoe Slater	S-24914207	SE-24914208	Object	Section 6
	Name Withheld	S-24994739	SE-24994740	Object	Section 6
	Name Withheld	S-24999244	SE-24999245	Object	Section 6
	Susan Farley	S-25828357	SE-25828358	Object	Section 6
	Luke Barker	S-25081216	SE-25081217	Object	Section 6
	Name Withheld	S-23353314	SE-23353315	Object	Section 6
	Paul O'Donohue	S-23136414	SE-23136415	Object	Section 6
	Allan Hudo	S-23305068	SE-23305069	Object	Section 6
	Sian Ineson	S-24827066	SE-24827067	Object	Section 6
	Alexander Ineson	S-25045209	SE-25045210	Object	Section 6
	Name Withheld	S-23359585	SE-23359586	Object	Section 6
	Name Withheld	S-23379207	SE-23379208	Object	Section 6
	Anna Humphries	S-24576601	SE-24576602	Object	Section 6
	Shelley Rafferty	S-24839220	SE-24839221	Object	Section 6
	Diane Call	S-25057737	SE-25057738	Object	Section 6
	Name Withheld	S-24668003	SE-24668004	Object	Section 6
	Siobhan Isherwood	S-25074239	SE-25074240	Object	Section 6
	Kerry Fagan	S-24815389	SE-24815390	Object	Section 6

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Group	Name	Submitter ID	Submission ID	View	Section where issues addressed in Submissions Report
	Graeme Ferguson	S-24827562	SE-24827563	Object	Section 6
	Name Withheld	S-24863828	SE-24863829	Object	Section 6
	Neale Blackwell	S-24909290	SE-24909291	Object	Section 6
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	Name Withheld	S-23021764	SE-23021765	Object	Section 6
	Name Withheld	S-23112190	SE-23112191	Object	Section 6
	Name Withheld	S-23114502	SE-23114503	Object	Section 6
	Frank Williams	S-23200458	SE-23200459	Object	Section 6
	Kathleen Iles	S-23267806	SE-23267807	Object	Section 6
	Name Withheld	S-23297708	SE-23297709	Object	Section 6
	Name Withheld	S-23305787	SE-23305788	Object	Section 6
	Peter Denton	S-23328535	SE-23328536	Object	Section 6
	Dave Hyde	S-23463431	SE-23463432	Object	Section 6
	Name Withheld	S-23495301	SE-23495302	Object	Section 6
	Sharyn Noll	S-23938680	SE-23938681	Object	Section 6
	Name Withheld	S-23961785	SE-23961786	Object	Section 6
	Dorothy Stranks	S-24414783	SE-24414784	Object	Section 6
	Kate Mitchell	S-24637877	SE-24637878	Object	Section 6
	Name Withheld	S-24639101	SE-24639102	Object	Section 6
	Name Withheld	S-24675241	SE-24675242	Object	Section 6
	Jennifer Carroll	S-24714061	SE-24714062	Object	Section 6
	Ross Iles	S-24723763	SE-24723764	Object	Section 6
	John Carroll	S-24749070	SE-24749071	Object	Section 6
	Angus Hancock	S-24755149	SE-24755150	Object	Section 6
	Name Withheld	S-24757996	SE-24757997	Object	Section 6
	Robyn Hyde	S-24802961	SE-24802962	Object	Section 6
	Name Withheld	S-24834207	SE-24834208	Object	Section 6
	Name Withheld	S-24891206	SE-24891207	Object	Section 6
	Lew Linnerston	S-24891979	SE-24891980	Object	Section 6
	Fiona Linnerston	S-24898209	SE-24898210	Object	Section 6
	Stephen Crockett	S-24962707	SE-24962708	Object	Section 6
	Brett Plain	S-24974489	SE-24974490	Object	Section 6
	Name Withheld	S-24990473	SE-24990474	Object	Section 6
	Name Withheld	S-24992221	SE-24992222	Object	Section 6
	Name Withheld	S-25045232	SE-25045233	Object	Section 6
	Name Withheld	S-25045978	SE-25045979	Object	Section 6
	Richard Smart	S-25063831	SE-25063832	Object	Section 6
	Name Withheld	S-25072967	SE-25072968	Object	Section 6
	Scott Jordan	S-25074464	SE-25074465	Object	Section 6
	Elena Williams	S-25075254	SE-25075255	Object	Section 6
	Marilyn Coakes	S-25817643	SE-25817644	Object	Section 6
	Owen Coakes	S-25819152	SE-25819153	Object	Section 6
	Bruce Mowbray	S-22941816	SE-22941817	Object	Section 6
	Bruce Reddel	S-23797415	SE-23797416	Object	Section 6
	Kim Plaizier	S-24826656	SE-24826657	Object	Section 6
	Brendan Horgan	S-25040215	SE-25040216	Object	Section 6
	Name Withheld	S-25042521	SE-25042522	Object	Section 6
	Name Withheld	S-23434249	SE-23434250	Object	Section 6
	Emily Edwards	S-25047534	SE-25047535	Object	Section 6
	Mathew Findlay	S-23716713	SE-23716714	Object	Section 6
	Name Withheld	S-23323744	SE-23323745	Object	Section 6
	Keith Austin	S-23119523	SE-23119524	Object	Section 6
	Alan Barker	S-23379983	SE-23379984	Object	Section 6
	Peter Rees	S-23392477	SE-23392478	Object	Section 6
	Acacia Garland	S-23520260	SE-23520261	Object	Section 6
	Rachael Wright	S-24760981	SE-24760982	Object	Section 6
	Cory Wright	S-24761983	SE-24761984	Object	Section 6
	Name Withheld	S-24827038	SE-24827039	Object	Section 6
	Name Withheld	S-24908981	SE-24908982	Object	Section 6
	Name Withheld	S-23221998	SE-23221999	Object	Section 6
	Name Withheld	S-23289645	SE-23289646	Support	
	Name Withheld	S-22276882	SE-22276883	Support	
	Tim Mullaney	S-23243793	SE-23243794	Support	
	Ashley Smith	S-24324480	SE-24324481	Support	
	Name Withheld	S-23102814	SE-23102815	Support	
	Name Withheld	S-24619003	SE-24619004	Support	
	Tim Guise	S-23688231	SE-23688232	Support	
	Name Withheld	S-22286831	SE-22286832	Support	
	Name Withheld	S-23550575	SE-23550576	Support	
	Malcolm Harvey	S-23339612	SE-23339613	Support	
	Name Withheld	S-22302260	SE-22302261	Support	
	Marco Rossignoli	S-23320826	SE-23320827	Support	
	Name Withheld	S-22280217	SE-22280218	Support	
	Name Withheld	S-24832457	SE-24832458	Support	
	Kerrin Singles			Representation	



APPENDIX 2

Consolidated Summary of Management and Mitigation Measures

Summary of Management and Mitigation Measures

The *State significant development guidelines – preparing a submissions report* (DPIE 2021) (Submission Report guidelines) require a consolidated summary of all the proposed environmental management and monitoring measures to be provided. If project approval for the Revised Project is granted, Daracon will commit to the environmental management and monitoring measures outlined below.

Throughout the Submissions Report, Daracon have made additional commitments in response to issues raised in submissions from government agencies and the community. Any new or revised commitments included in the Submissions Report are included in *italics* in the sections below.

1.1 Hours of Operation

- 1.1.1 Quarry operations from 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product which will only occur Monday to Friday. No evening or night-time quarry operations and no quarry operations on Sundays or public holidays.
- 1.1.2 Between 6.00 pm and 7.00 pm, up to ten unladen Daracon trucks will return to the quarry for loading and parking at the quarry overnight, in readiness for departure from 7.00 am the following morning. (In the case of trucks loaded on Friday between 6.00 pm and 7.00 pm, departure will be no earlier than 7.00 am Monday morning).
- 1.1.3 Blasting of quarry material will be undertaken between 11.00 am and 3.00 pm on Monday to Friday, with no blasting on Saturday, Sunday or public holidays.
- 1.1.4 Necessary maintenance activities and/or environmental management controls, including vehicles/trucks moving in and out of the quarry for maintenance purposes will be undertaken 24 hours seven days per week, as necessary.
- 1.1.5 Construction activities for the new access road will be conducted 7.00am to 6.00pm Monday to Saturday. Rail bridge and associated works over the Northern Railway Line may be undertaken 24 hours per day, seven days a week to suit rail shutdown periods.
- 1.1.6 Rail loading and transportation may occur 24 hours per day, seven days a week. Rail loading will not occur during the evening and night-time periods prior to the construction of the rail spur extension.
- 1.1.7 Evening and night time rail loading following the completion of the rail spur extension will not occur until monitored day time levels confirm predicted noise levels.

1.2 Hours of Transportation and Truck Movements

- 1.2.1 Road haulage of quarry product between 7.00 am to 6.00 pm, Monday to Friday. No road haulage of quarry product on Saturday, Sunday or public holidays.
- 1.2.2 Use of Haul Route 1 as the primary haul route being Martins Creek Quarry via Station Street, Grace Avenue, Dungog Road, Gresford Road, Tocal Road, Paterson Road, Flat Road, Pitnacree Road, Melbourne Street, New England Highway.

- 1.2.3** On completion of the new access road into the quarry, Martins Creek Village will be by-passed with quarry traffic no longer utilising Station Street and Grace Avenue.
- 1.2.4** A maximum of 140 loaded product trucks per day for 50 days per year, otherwise 100 loaded product trucks per day, with a peak of:
 - 20 laden trucks per hour (40 movements), Monday to Friday between 7.00am and 3.00pm
 - 15 laden trucks per hour (30 movements), Monday to Friday between 3.00pm and 6.00pm.
 - No quarry trucks through Paterson prior to 6.45 am Monday to Friday.
- 1.2.5** Haulage may be limited as required around days when there is extra traffic in Paterson due to community events, e.g. Tocal Field Days, car show events, church events and funerals.
- 1.2.6** No haulage between 24 December and 1 January, inclusive.
- 1.2.7** *Daracon commits to constructing the new quarry access and railway bridge within 2 years of project approval, subject to obtaining relevant secondary approvals from ARTC and DSC within 12 months of project approval.*

1.3 Environmental Management Plans

- 1.3.1** Daracon will prepare and implement a Construction Environmental Management Plan (CEMP) prior to the commencement of construction that identifies the environmental and social management controls to be implemented during the construction phase.
- 1.3.2** Prior to the commencement of quarrying operations, Daracon will update the existing Integrated Facilities Management Plan (IFMP) to detail the environmental management measures and any monitoring requirements for the Revised Project into an Environmental Management Plan (EMP). The EMP will include details of all the management and monitoring commitments, as well as detailing the timing and Daracon role responsible for each action.

1.4 Social and Economic

- 1.4.1** Daracon commit to supporting the re-establishment of a Community Consultative Committee (CCC) in accordance with the DPIE Community Consultative Committee Guidelines: State Significant Project (2016). In accordance with the guidelines, the Committee will comprise an independent chair and appropriate representation from Daracon, DSC and the local community.
- 1.4.2** Daracon will develop and implement a Social Impact Management Plan (SIMP) for the Revised Project in consultation with DSC, the CCC, affected local communities (including Martins Creek and Paterson) and other interested stakeholders (to the greatest extent practicable). The SIMP will:
 - identify negative social impacts resulting from the development both locally and regionally
 - specify adaptive management and mitigation measures to avoid, minimise, and/or mitigate negative social impacts
 - identify opportunities to secure and enhance positive social impacts of the development, including opportunities to:
 - assist in maintaining community services and facilities
 - improve the way of life, wellbeing, and social cohesion within the local community

- include a program to monitor, review, and report on the effectiveness of these measures, including:
 - identifying representative parameters or indicators to be monitored, how and when data is to be collected, and who is responsible for collecting it
 - ongoing analysis of social risks
 - undertaking additional research, if necessary, to reduce uncertainties
- include a Stakeholder Engagement Plan to guide the evaluation and implementation of social impact management and mitigation measures.

- 1.4.3** Daracon will update and implement the existing quarry complaints response and management program as part of the Revised Project.
- 1.4.4** As part of the current VPA negotiations with DSC, Daracon has offered to implement a dedicated Martins Creek Quarry *Community Benefits and Wellbeing Fund to the value of \$40,000 per annum (based on the current proposed production and road haulage volumes)* that strategically focuses the allocation of contributions and donations and allows the company to work with the local community to effectively manage the negative impacts of the operation and to enhance any potential benefits of the quarry.
- 1.4.5** *If the Revised Project is approved, for the first 12 months following project approval, Daracon will commit part of the abovementioned Community Benefits and Wellbeing Fund to provide access for the local community to the Daracon Employee Assistance Program (EAP) service, or independent EAP service. Effectively, this would provide those who identify as a community member proximate to the quarry or proposed haul route, with confidential access to up to 3 sessions with a qualified psychologist. The benefit of this mitigation measure will be reviewed at 12 months, having regard to the level of usage of the service, in consultation with the CCC.*
- 1.4.6** Daracon will implement a local employment and procurement policy. The policy will seek to:
- increase employment opportunities for those within the local community who are interested in pursuing employment with Daracon by advertising locally
 - offer apprenticeships and traineeships to local youth
 - maximise the use of local suppliers in procurement activities at the quarry where feasible.
- 1.4.7** Daracon will continue to employ a Community Liaison Representative to manage the ongoing engagement associated with the Revised Project and monitoring and management commitments relating to social impacts as detailed in the SIMP and other environmental management plans.
- 1.4.8** *Daracon will continue to employ an Environmental Representative to manage the ongoing environmental monitoring, management and compliance requirements associated with the Revised Project.*
- 1.4.9** Daracon will undertake regular and ongoing consultation with local bus companies to allow for the identification and implementation of reasonable and feasible measures to manage interactions between buses and quarry trucks such as the identification of bus stops along the haul route and education of truck drivers as to the location of these to further increase awareness and enhance safe driving practices in their vicinity.

- 1.4.10** Daracon will investigate implementation of a system to identify rural bus stop pick up points i.e. stencil or paint markers as physical reminder to drivers that there is potential for children and parents to be close/adjacent to the road at school bus times.
- 1.4.11** Daracon will undertake a school visit program to encourage road safety awareness.
- 1.4.12** As part of the VPA with DSC, Daracon will provide a monetary contribution for the installation of four (4) covered bus shelters in the township of Paterson and accompanying signage (one existing location, one opposite and two at the local park). Note: all VPA commitments referenced in this section are subject to final negotiation with Council, and are based on approval of the Revised Project, as currently proposed.
- 1.4.13** *Daracon will investigate potential options for two (2) stopping bays on the haul route in consultation with DSC, MCC and the CCC. Subject to relevant approvals from DSC or MCC, Daracon will contribute to the establishment of the two (2) additional stopping bays on the haul route.*
- 1.4.14** Daracon will provide community and key stakeholders (e.g. DSC and the EPA) advice in accordance with any emergency response plan enacted by the relevant State or National authority in the event that Daracon is called upon to assist in providing quarry material in response to an emergency event.
- 1.4.15** Daracon will maintain regular communications with Hanson to identify ongoing issues of community concern, possible cumulative issues and as appropriate, any joint responses to manage cumulative impacts.

1.5 Traffic and Transport

- 1.5.1** Daracon commit to constructing a new access road on Dungog Road to allow heavy vehicle access via Dungog Road directly onto the quarry, effectively bypassing Martins Creek Village. Detailed concept design for the new access road and new intersection on Dungog Road will be prepared in consultation with Dungog Shire Council (DSC) and Australian Rail Track Corporation (ARTC). The proposed main access, including the bridge over the rail line, will be designed, and constructed generally in accordance with Austroads, Transport for NSW (TfNSW) and ARTC standards as applicable.
- 1.5.2** To maintain and improve the capacity, efficiency and safety of the road network used by the Revised Project, intersection and road upgrades are also proposed at the following locations:
 - intersection of Dungog Road and Gresford Road
 - intersection of King and Duke Streets (within the village of Paterson)
 - approach to Gostwyck Bridge.

The detailed design of the proposed upgrades will be completed in consultation with DSC and/or TfNSW and generally in accordance with Austroads Standards.
- 1.5.3** *If development consent is granted for the Revised Project, Daracon will fund the design and installation of a 200mm x 200mm timber kerb on Gostwyck Bridge maintaining a 3.5 m travel lane. The final design of the kerb will be subject to TfNSW approval.*

- 1.5.4** Daracon will prepare and implement a Construction Traffic Management Plan (CTMP) in consultation with DSC. This will be prepared in accordance with RMS Traffic Control at Work Sites manual and will include specific Traffic Control Plans (TCPs) to control traffic through and in/out of the construction site.
- 1.5.5** Daracon will also prepare and implement a Traffic Management Plan in consultation with TfNSW, DSC and Maitland City Council (MCC), should the Revised Project be approved. The Traffic Management Plan will include:
- the haulage route and traffic types to be used for the Revised Project
 - the measures to be implemented to:
 - ensure compliance with the traffic operating conditions committed to by Daracon
 - minimise traffic safety issues and disruption to local road users, including minimising potential for conflict with school buses
 - minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles exiting the quarry
 - confirm truck speed limits through Paterson, Bolwarra and Martins Creek
 - participate in transport management investigations initiated by DSC or MCC
 - the Driver Code of Conduct.
- 1.5.6** Daracon commit to the continued implementation of existing operational traffic controls and a review and update of these controls for the Revised Project, including:
- continued rigorous assessment and pre-qualification process prior to the engagement of any transport subcontractors, including thorough review of subcontractor's relevant management processes and procedures to ensure compliance with the Heavy Vehicle National Law (HVNL) and associated Chain of Responsibility (CoR)
 - all drivers attending the quarry are required to sign and adhere to the Driver Code of Conduct. The Drivers Code of Conduct will:
 - be reviewed and updated annually and as the need arises
 - require drivers to report any substantial road pavement irregularities along the haul route, with these reports being passed on councils for attention
 - reinforce truck speed limits, including:
 - 40 km/hr through Paterson and Bolwarra
 - 20 - 25 km/hr at the intersection of King and Duke Street, Paterson
 - 20 km/hr on Station Street, Martins Creek
- 1.5.7** Daracon will undertake regular audits of transport subcontractors to ensure compliance with the HVNL and CoR.
- 1.5.8** Daracon will conduct regular monitoring, spot checks and observation of driver behaviour.
- 1.5.9** Daracon will investigate all complaints and potential breaches of Daracon's Traffic and Transport policies and procedure to the fullest extent practicable, and initiate disciplinary action as required.

- 1.5.10** Daracon will continue planning to expand rail markets and seek to gain access to rail unloading capacity, in order to enable greater transportation of product by rail, where feasible.
- 1.5.11** If Daracon is called upon to assist in providing quarry material in response to an emergency event it will: advise the community, DSC and the Environment Protection Authority (EPA), at the soonest possible opportunity, in accordance with any emergency response plan enacted by the relevant State or National authority.
- 1.5.12** Daracon will explore additional opportunities to further monitor driver conduct and truck conveying, as suggested by the community, including fleet management technologies as they become available and GPS monitoring for non-Daracon vehicles.
- 1.5.13** Daracon will investigate the use of additional radar variable message signs in consultation with DSC and the CCC. There are currently 5 in operation along the haul route, of which 4 Daracon either maintain or have contributed to the installation or maintenance.
- 1.5.14** Daracon will undertake regular monitoring of driver conduct and commission independent and random monitoring of driver behaviour and adherence to the Code of Conduct three times per year in the first year of operation, with guidance sought from the CCC by the independent auditor on the key focus for this independent monitoring.
- 1.5.15** Daracon will install a Camera Monitoring Station at the intersection of King and Duke Streets to enable identification of trucks through Paterson to allow for the company to effectively confirm and resolve truck related interactions associated with the quarry (including Daracon and contractor trucks) by correlation of number plates with weighbridge records. Outcomes of camera monitoring in response to a complaint will be communicated to the complainant and to the community via the CCC.
- 1.5.16** Monthly reporting of truck numbers over the weighbridge on the Daracon website for the first two years of operation with the regularity of this requirement after two years to be reviewed in consultation with the CCC and reduced to quarterly (depending on identified need).
- 1.5.17** Daracon will monitor truck routes to ensure that Haul Route 1 is used as the primary haul route.
- 1.5.18** *Daracon will be supportive of contributing to the establishment of a pedestrian crossing in Paterson or other works to upgrade pedestrian amenity, should DSC approve it as a part of the VPA considerations, and TfNSW approve these measures, as relevant. Further, Daracon have offered to contribute to upgrade of the footpaths in King and Duke Streets, Paterson, as part of VPA considerations.*

1.6 Noise

- 1.6.1** Daracon commit to the preparation and implementation of a Construction Noise Management Plan (CNMP) in accordance with the requirements of the Interim Construction Noise Guideline (ICNG). The CNMP would outline the standard reasonable and feasible mitigation measures required to reduce the noise impact from construction activities. Where standard mitigation measures have been implemented and the noise levels still exceed the noise management levels, as part of the Stakeholder Engagement Strategy, the following additional mitigation measures will be adopted:
 - Notification letterbox drop or equivalent to provide advanced warning of works detailing work activities, times over which these will occur, impacts and mitigation measures.

- Specific notifications to identified stakeholders to provide additional information when relevant and informative to more highly affected receivers than covered in general letterbox drops.
- Phone calls and individual briefings detailing relevant information made to identified/affected stakeholders providing tailored advice and to provide the opportunity for stakeholders to comment on the proposed work and specific needs.
- Individual briefings to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented, with the opportunity to comment on the project. Where the resident cannot be met with individually then an alternative form of engagement will be used.
- Periodic verification measurement to check noise levels and follow up reasonable complaints.

1.6.2 Daracon commit to the review and update of the existing Noise Management Plan (NMP), within 6 months of project approval. The NMP will detail the monitoring and management controls to be implemented to manage noise impacts associated with the Revised Project including ongoing implementation of the proactive and reactive management protocols in response to noise trigger levels defined in the plan.

1.6.3 Daracon commit to the implementation of the following physical noise controls as part of the Revised Project to assist in managing noise emissions from the quarry:

- a 4 metre noise barrier adjacent to the primary dump hopper and part of the internal haul road between the West Pit and East Pit
- noise barrier adjacent to the primary crusher
- noise attenuation of the primary surge bin
- 8-m noise barrier around the southern boundary of the existing East Pit processing plant area to overlap an augmented landform adjacent the existing wheel wash bay
- new cladding of the secondary screen and crusher building including a mass layer for the roof, northern, southern and western walls. Additionally, cladding of the existing open areas at the base of the building for the northern, western and southern facades.
- attenuated replacement of the tertiary crusher and tertiary surge bin
- 3-m noise barrier around the southern boundary of the Southern Stockpile Area
- installation of a fence between the western boundary of the Southern Stockpile Area and adjacent rail siding.

1.6.4 Daracon commit to implement both proactive and reactive noise control strategies informed by real-time noise and meteorological monitoring systems. The proactive noise management approach will include:

- implementation of a system to provide environmental personnel with a daily forecast of expected conditions in the vicinity of the operation, particularly with regard to the potential for noise enhancing meteorological conditions
- using noise forecasts for daily operational planning

- modifying the planned quarrying activities, as appropriate, to minimise or avoid the potential noise impacts including but not limited to:
 - to enable the continued progression of the quarry area topsoil and overburden will be stripped using a bulldozer, excavator and dump trucks on a campaign basis
 - machines working on the higher, more exposed benches in the West Pit will be relocated during periods of noise-enhancing meteorological conditions
 - quarrying activity on the higher benches to be scheduled for times when the dominant prevailing weather conditions do not enhance the noise propagation towards the receivers to the west and north of the West Pit. Quarrying activity on the higher benches to be prioritised when the appropriate conditions occur
 - reducing the number of machines operating in the West Pit, moving a specific machine into a location that is acoustically shielded so that other machines can continue to operate, or the complete shut down of the West Pit
 - managing the West Pit activities to compliment the truck movements on the access road through Lot 5 to Dungog Road. During periods of high truck movement and weather conditions that enhance the noise propagation, this may include shutting down some or all activities within the West Pit
 - re-scheduling drilling in exposed locations for periods when the weather conditions do not enhance the noise impacts.

1.6.5 Daracon commit to implement reasonable and feasible receiver-based noise mitigation measures which may include measures such as double glazing, insulation or air conditioning for relevant residences in to meet the requirements of the Voluntary Land Acquisition and Management Policy (VLAMP) and any relevant development consent conditions, based on monitoring results and upon written request of the landowners.

1.6.6 Daracon commit to expand the noise monitoring network for the Revised Project by installing two new real-time noise monitors and five new attended monitoring locations as part of the updated noise monitoring network.

1.6.7 *If agreements with the relevant significantly affected Station Street residents can't be reached prior to commencement of work under a new approval, Daracon will construct a barrier along the northern end of Station Street within the Project Area in order to further mitigate potential noise impacts associated with rail loading activities. The noise barrier will be approximately 180 metres in length and 4 metres in height, located between the locomotives on the rail siding and the receivers along the northern end of Station Street. The noise barrier would be an earthen bund constructed approximately 1.2 to 1.5 metres in height with a timber lapped and capped fence of approximately 2.5 to 2.8 metres.*

1.7 Air Quality

1.7.1 Daracon commit to the continued implementation of the current air quality monitoring consisting of four dust deposition gauges, one high volume air sampler (HVAS) and one meteorological station. Daracon will continue to publish the air quality monitoring data on the Daracon website.

- 1.7.2** Daracon commit to effectively manage the air quality impacts associated with the Revised Project by implementing a range of dust management measures for the key dust generating activities, including:
- all trucks travelling between the pits and stockpiles, or between stockpiles and crushers, will be restricted to clearly marked haul routes
 - a water truck will be operated to reduce dust lift-off from internal roads and stockpile areas
 - all vehicles travelling on internal unsealed roads will be limited to a speed appropriate for the conditions and safety, i.e. less than 20 km/hr
 - the location and scale of activities which generate dust emissions will be modified and limited during periods of dry and windy weather
 - mobile crushing will cease to be undertaken within the West Pit area
 - water sprays will be applied at transfer points on mobile crushing and screening undertaken within the processing area
 - the following components of the fixed plant will have cladding applied:
 - primary screen and secondary crusher building
 - primary crusher
 - surge bin
 - attenuated replacement of the tertiary crusher
 - water will be applied to relevant stockpiles and hardstand surfaces to prevent dust lift-off
 - establishment of a new bitumen sealed quarry access road up to the wheel wash
 - all trucks leaving the quarry will make use of the wheel wash facility to limit dust tracking onto the public road network
 - trucks entering and leaving the quarry that are carrying loads will be covered at all times, except during loading and unloading.
- 1.7.3** *Daracon will install a camera at the weighbridge to ensure that trucks entering and leaving the quarry that are carrying loads are covered.*
- 1.7.4** *Daracon will undertake an additional two respirable crystalline silica (RCS) monitoring events in the first 12 months from project approval to validate the concentrations recorded for the AQIA are below the 3 µg/m³ criterion at the site boundary.*

1.8 Blasting

- 1.8.1** Daracon will implement the appropriate blast management controls necessary to meet the relevant criteria for private residential receivers, heritage items and infrastructure.
- 1.8.2** Daracon will continue to manage blasting practices for the Revised Project within a reduced blasting window. That is, between the hours of 11.00 am and 3.00 pm Monday to Friday, with no blasts being fired on weekends or public holidays.
- 1.8.3** Daracon will continue to undertake blasting for the Revised Project in accordance with a detailed blast design process that considers operational, geological and environmental constraints, with the design and size of each blast determined to meet these constraints and meet blasting criteria.

- 1.8.4** Daracon will develop a Blast Management Plan in consultation with the EPA, should the Revised Project be approved. The Blast Management Plan will:
- describe the measure that will be implemented to:
 - ensure compliance with the blasting criteria and operating conditions
 - avoid blasting during unfavourable climatic conditions
 - detail the monitoring program for evaluating and reporting on compliance with the relevant conditions
 - include a protocol for identifying any blast-related exceedance, incident or non-compliance and for notifying DPIE and relevant stakeholders of these events
 - include public notification procedures to enable members of the public, particularly surrounding residents, to get up-to-date information on the proposed blasting schedule
 - include a protocol for investigating and responding to blast-related complaints.
- 1.8.5** Daracon commit to independent blast monitoring to be undertaken for three blasts within the first year of the Revised Project by an independent qualified person, and in consultation with the EPA. Daracon will consult with the CCC and/or representative of DSC in relation the monitoring times and locations.
- 1.8.6** Daracon will continue to implement the existing blast monitoring regime at three locations, as established under EPL 1378, and will review and update the blast monitoring as required to cover the sensitive receivers located in the vicinity of the Project Area.
- 1.8.7** Daracon will continue to consult with residents via letter box drops to inform them of the blast time the following day as well as an SMS or email on the day of the blast notifying neighbours of the time of day the blast is to occur.
- 1.8.9** *Daracon commit to structural assessment of any privately-owned land within 500 metres of the approved quarry pit to establish the baseline condition of any buildings and structures on their land, if a written request is received from the owner. Daracon will commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:*
- *establish the baseline condition of any buildings and other structures on the land*
 - *identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures*
 - *give the landowner a copy of the property inspection report.*
- If there is a dispute over the selection of the suitably qualified, experienced and independent person, or Daracon or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Planning Secretary for resolution.*

1.9 Greenhouse Gas and Energy

- 1.9.1** Daracon will implement reasonable and feasible energy management controls as part of the Revised Project, including:
- investigating and considering the use of alternative fuels such as Biodiesel, CNG or Hydrogen where practicable
 - considering fuel efficient equipment as new equipment is purchased

- energy efficiency will be an important selection criterion when purchasing new equipment. The existing tertiary crusher will be replaced with new plant which is more efficient
- designing blasting strategies to improve extraction efficiency
- limiting the length of material haulage routes
- optimising ramp gradients for fuel efficiency
- maximising haul truck payloads
- maintenance of roads to improve vehicle efficiency
- optimising the number of haul trucks on site to eliminate queuing and minimise idle time. Loaders will be selected to load in the most efficient time.

1.10 Water Resources

1.10.1 Daracon will prepare and implement a comprehensive Water Management Plan (WMP) in consultation with DPIE Water, should the Revised Project be approved. The WMP will include a:

- Site Water Balance that:
 - includes details of:
 - sources and security of water supply
 - water use and management on the site
 - any off-site discharges or water transfers
 - reporting procedures, including the annual preparation of a site water balance
 - minimises clean and potable water use on the site
- Surface Water Management Plan, that includes:
 - baseline data on surface water flows and water quality
 - surface water impact assessment criteria, including trigger levels for investigating any potentially adverse impacts, and surface water management performance measures
 - a detailed description of the surface water management system on the site, including the:
 - clean water diversion system
 - erosion and sediment controls
 - dirty water management system
 - water storages
 - a program to monitor and report on:
 - any surface water discharges
 - the effectiveness of the water management system
 - surface water flows and quality in watercourses and/or waterbodies that could potentially be impacted by the development

- a protocol for identifying and investigating any exceedances of the surface water impact assessment criteria and for notifying DPIE and relevant stakeholders of these events
- Groundwater Management Plan, that includes:
 - baseline data of groundwater levels, yield and quality for groundwater resources potentially impacted by the Revised Project
 - a description of the groundwater management system
 - groundwater performance criteria, including trigger levels for investigating any potentially adverse groundwater impacts
 - a groundwater monitoring program
 - a protocol for identifying and investigating any exceedances of the groundwater performance criteria and for notifying DPIE and relevant stakeholders of these events.

- 1.10.2** Daracon will continue to implement the existing groundwater monitoring network and monitoring regime consisting of seven bores, each fitted with a continuously recording datalogger, to be monitored with the dataloggers and data downloaded every six months. As the extraction area extends, relevant bores will be decommissioned and replaced beyond the extent of the quarry. In addition, as the future quarrying may extend below the local water table, additional monitoring downgradient of MW01 will be undertaken, to detect and quantify potential drawdown.
- 1.10.3** Surface water quality monitoring at sites upstream and downstream of the quarry will be continued to enable the development of site-specific water quality trigger values in accordance with ANZG 2018.
- 1.10.4** All runoff captured within the quarry will continue to be treated through the water management system (WMS) (which includes flocculation, coagulation and pH correction) prior to discharge to ensure the water quality criteria of the EPL continues to be met.
- 1.10.5** Erosion and sediment controls (ESCs) will continue to be implemented in accordance with Landcom's Managing Urban Stormwater Volume 1 (Landcom, 2004) and Volume 2E Mines and Quarries (DECC, 2008) (the Blue Book) during stripping/development of new extraction areas or any other ground disturbing activities.
- 1.10.6** In the event of water source restrictions, Daracon will limit production to ensure environmental controls, i.e. dust suppression, are maintained as a priority with the available water supply.
- 1.10.7** A potable water usage reduction strategy will be included in the revised WMP following approval and a program for implementation of water savings measures developed within 12 months of commencement of operations. Ongoing potable water usage reduction performance will be reported as part of the Annual Review process.
- 1.10.8** Potable water from the amenities water reticulation system will be sampled on a biannual basis and analysed to ensure the water meets the requirements of the ADWG (National Health and Medical Research Council, 2011). The amenities water supply tank will be inspected monthly for any potential contamination with organics or other materials.

- 1.10.9** *Daracon will undertake quarterly monitoring of the metals species listed in Table 4.6 of the Submissions Report in quarry discharges from Dam 1 and Dam 3, as well as at the Paterson River Upstream and downstream monitoring locations for a period of 12 months should the Revised Project be approved. Following 12 months of monitoring, Daracon will commission a review, detailing the monitoring results, and consult with EPA in regard to the need or otherwise, for ongoing monitoring.*
- 1.10.10** *Daracon will undertake to implement the following works as part of a pollution reduction study should the Revised Project be approved:*
- *Monitoring of Total Nitrogen (TN), Nitrite (NO₂) and Nitrate (NO₃) in controlled discharges and in the waterways downstream of the quarry licensed discharge points on a monthly basis during discharge at each licensed discharge point*
 - *Monitoring of Total Nitrogen (TN), Nitrite (NO₂) and Nitrate (NO₃) in the waterways downstream of the quarry licensed discharge points both during natural runoff events (i.e. with no quarry discharge) on a quarterly basis*
 - *Inspection of the waterways downstream of the quarry licensed discharge points to identify any evidence of eutrophication on a quarterly basis*
 - *Following 12 months of monitoring, preparation of a report by a suitably qualified and experienced person detailing the monitoring undertaken and any identified impacts that can be attributed to quarry discharges containing nitrogen compounds*
- Should the monitoring undertaken demonstrate minimal impacts associated with quarry discharges containing nitrogen compounds, the monitoring being undertaken for the investigation would cease.*
- 1.10.11** Daracon will obtain appropriate surface water access licences to cover licensable take from the Paterson/Allyn Rivers water source prior to lateral extension of the quarry that results in the interception of additional undisturbed catchment.
- 1.10.12** As part of the quarry closure planning process, Daracon will consult with DPIE Water regarding the surface water licensing associated with the final voids and ensure that sufficient surface water entitlement is maintained in accordance with the relevant legislative requirements and policies in place at the time of closure.
- 1.10.13** The WMP will be updated to reflect monitoring, metering and management measures to report on groundwater and surface water take and potential impacts to water sources due to the activity.
- 1.10.14** Daracon will report on water take at the quarry each year (direct and indirect) in the Annual Review. This will include water take where a water licence is required and where an exemption applies. Where a water licence is required, the water take will be reviewed against existing water licences.

1.11 Biodiversity

1.11.1

Daracon will prepare and implement a Biodiversity and Rehabilitation Management Plan (BRMP) in consultation with Biodiversity Conservation Division (BCD) and DSC, should the Revised Project be approved. The BRMP will:

- describe the short, medium, and long-term measures to be undertaken to:
 - implement a Biodiversity Offset Strategy (BOS), including how impacted species under the EPBC Act would be suitably offset
 - retain and manage the remnant vegetation and fauna habitat on the site
 - ensure compliance with the rehabilitation objectives
- include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, including triggers for remedial action, where these performance or completion criteria are not met
- include a detailed description of the measures to be implemented on the site to:
 - minimise impacts on fauna, including undertaking pre-clearance surveys
 - supervision of clearing works to be undertaken by a qualified and experienced ecologist
 - manage potential indirect impacts on threatened plant and animal species
 - minimise the amount of clearing within the approved disturbance area where reasonable and feasible
 - protect vegetation and fauna habitat outside the approved disturbance area
 - control weeds and feral pests, with consideration of actions identified in relevant threat abatement plans
 - control erosion
 - control unrestricted access
 - progressively rehabilitate the site and minimise disturbance areas
- include a seasonally-based program to monitor and report on the effectiveness of the above measures, progress against the detailed performance and completion criteria, and any progressive improvements that could be implemented to improve biodiversity outcomes
- monitor and report on the impacts of the development on groundwater dependent ecosystems and riparian vegetation, and identify trigger levels for the remediation of any material impacts to these ecosystems
- identify the potential risks to the successful implementation of the final rehabilitation, and include a description of the contingency measures to be implemented to mitigate against these risks
- include details of who would be responsible for monitoring, reviewing, and implementing the plan.

1.11.2 Daracon is committed to delivering a BOS that appropriately compensates for the unavoidable loss of ecological values as a result of the Revised Project. The BOS will be further developed in consultation with the BCD and DPIE and based on the credits required to be retired to offset the impacts of the Revised Project as specified in the BAR and the offset options available under the BC Act:

- land based offsets (determined in accordance with the BAR and the offset rules in the BC Regulation) through the establishment of new Stewardship Sites
- purchasing credits from the market, and/or
- paying into the Biodiversity Conservation Fund.

1.11.3 *Daracon commits to the preparation of a Koala Plan of Management, or equivalent, for the quarry in accordance with the State Environmental Planning Policy (Koala Habitat Protection) 2020.*

1.12 Aboriginal Cultural Heritage

1.12.1 Within 12 months of an approval, an Aboriginal Cultural Heritage Management Plan (ACHMP) will be prepared for the quarry in consultation with Heritage NSW and Registered Aboriginal Parties (RAPs), should the Revised Project be approved. The ACHMP will describe the measures to:

- ensure all workers receive suitable Aboriginal cultural heritage inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or Aboriginal places
- protect, monitor and/or manage identified Aboriginal objects
- protect Aboriginal objects located outside the disturbance area from impacts of the development
- manage the discovery of human remains and any new Aboriginal objects or Aboriginal places, including detailed provisions for burials, over the life of the development.

1.12.2 RAPs will be consulted and further survey completed, to inform any further mitigation measures required as part of the final design and construction process for the new access road, prior to the commencement of clearing of land (initial ground works).

1.12.3 In the unlikely event that suspected human remains are encountered during construction, all work in the area that may cause further impact, must cease immediately and:

- the location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm
- the NSW Police must be contacted immediately
- no further action is to be undertaken until the NSW Police provide written notification to Daracon
- if the skeletal remains are identified as Aboriginal, Daracon or their agent must notify the Heritage NSW, RAPs and cease works in the area.

1.13 Historic Heritage

- 1.13.1 Daracon commit to contribute to road maintenance costs associated with truck haulage and these funds will enable DSC to ensure road conditions within Paterson are appropriately maintained.
- 1.13.2 Insertion of a requirement in the Driver Code of Conduct to report any substantial road pavement irregularities in Paterson, with these reports being passed on the DSC for attention.
- 1.13.3 Directions to be given to drivers alerting them of any identified road irregularities to enable them to minimise speeds where these occur when driving through Paterson.
- 1.13.4 All kerb and other road infrastructure will be reinstated following the proposed works within the Paterson Village Heritage Conservation Area (HCA) to replicate that removed to allow for the King and Duke Street intersection works.
- 1.13.5 In the unlikely event that unexpected historic (non-Aboriginal) archaeological remains are discovered during works associated with the Revised Project they will be managed in accordance with the existing process for management of unknown heritage sites/items as detailed within the existing IFMP which will be included in the EMP.

1.14 Visual

- 1.14.1 Progressive rehabilitation to reduce the duration of visible soil exposure, including the use of temporary rehabilitation as appropriate.
- 1.14.2 All vegetated areas outside of the proposed disturbance footprint would be retained and preserved.
- 1.14.3 All outdoor lighting will be installed and operated in accordance with AS4282 (INT) 1995 – Control of the Obtrusive Effects of Outdoor Lighting, including measures such as directing lighting downwards towards work areas and not toward private residences and roads, and where appropriate, using shields to limit the emission of light off site.
- 1.14.4 *In consultation with affected Station Street residences, Daracon commit to selective screen planting along the proposed noise barrier at the northern end of Station Street.*

1.15 Waste

- 1.15.1 Daracon will update the existing waste minimisation and recycling measures in the EMP, and implement for the Revised Project.
 - Waste streams will be managed in accordance with the principles of the waste hierarchy, with emphasis on reduce, reuse, recycle prior to disposal of its wastes.
- 1.15.2 General waste generated by the quarry personnel during operation of the Revised Project will be accommodated through the existing waste collection service for the quarry or via a licensed contractor for disposal/recycling at an appropriate waste management facility.

1.16 Hazard, Risk and Bushfire

- 1.16.1** Daracon will review and update the Pollution Incident Response Management Plan (PIRMP), Environmental Inspection Report checklist, Incident Reporting and Investigation procedure and the quarry Safety Management Plan. These documents will be updated in relation to the Revised Project to ensure:
- hazardous materials are managed on site to minimise the risk of harm to people and the environment
 - that all foreseeable emergency events involving hazardous materials are considered and adequate site-specific systems are put in place to ensure site personnel and equipment are ready and able to deal with an emergency.
- 1.16.2** No explosives will be stored on site, with all explosives brought onto the quarry site as needed and loaded directly into the drill hole.
- 1.16.3** Diesel tanks and refuelling systems will be designed and maintained in accordance with relevant Australian Standards and codes.
- 1.16.4** Surface drainage systems will be designed and maintained to prevent spills or runoff from hazardous materials storage areas entering surrounding land/waterways.
- 1.16.5** Dangerous goods will be stored in dangerous goods compliant stores (in accordance with relevant Australian Standards) with appropriate segregation of incompatible dangerous goods.
- 1.16.6** Daracon will review and update the Bushfire Emergency Response Procedure to consider the relevant aspects of the Revised Project with an ongoing commitment to review and revise the procedure if necessary, as the Revised Project progresses.

1.17 Rehabilitation and Closure

1.17.1 Progressive Rehabilitation

- 1.17.1.1** Daracon will prepare a BRMP to guide rehabilitation management practices across the quarry (as discussed in **Section 1.11**).
- 1.17.1.2** Daracon will implement a natural landform approach to the design and development of the final landform, outside of the final void areas. The final landform will be designed to:
- be safe, stable and non-polluting
 - incorporate natural landform design features (i.e. micro relief)
 - incorporate drainage lines consistent with topography and natural drainage where reasonable and feasible
 - sustain the intended land use for the post-quarrying domains
 - minimise the visual impacts of the development
 - be in keeping with the natural terrain features of the area.
- 1.17.1.3** Daracon will progressively rehabilitate disturbed areas over the life of the Revised Project, that is, as soon as reasonably practicable following disturbance. All reasonable steps will be taken to minimise the total area exposed at any time.

- 1.17.1.4** Daracon will use interim stabilisation and temporary re-vegetation strategies when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.
- 1.17.1.5** Prior to use for rehabilitation purposes, topsoil material will be analysed at a NATA registered laboratory to determine the application requirements for any soil ameliorants, if necessary.
- 1.17.1.16** Topsoil management techniques will be implemented to maintain the quality of topsoil for subsequent use in rehabilitation.

1.17.2 Quarry Closure

- 1.17.2.1** A Conceptual Closure Plan will be developed as part of the implementation of the Revised Project and will be incorporated into the BRMP. The Conceptual Closure Plan will be developed in consideration of the approach outlined in the ADA, subject to requirements of the Revised Project approval conditions.
- 1.17.2.2** Daracon commit to continue to investigate potentially feasible final void options during the life of the Revised Project as part of preparing a detailed final landform and final void strategy for the Revised Project.
- 1.17.2.3** A detailed quarry closure plan will commence at least three years prior to the anticipated quarry closure date (e.g. cessation of quarrying) with the closure plan being finalised at least two years prior to this date.
- 1.17.2.4** A Final Void Management Plan will be developed and included in the Final Closure Plan.

1.17.3 Final Land Use

- 1.17.3.1** Daracon commit to further investigating supplementary post quarrying land uses, including potential uses for the final voids, as part of developing the detailed closure plan for the quarry.
- 1.17.3.2** Daracon will prepare a Final Land Use Strategy for the quarry as part of the Quarry Closure Plan.

1.18 Voluntary Planning Agreement

- 1.18.1** Should the Revised Project be approved, Daracon will make relevant financial and/or in-kind contributions to both DSC and MCC in the form of a Voluntary Planning Agreement (VPA).
- 1.18.2** As part of the VPA, Daracon will contribute towards road maintenance and pavement upgrades for impacts on the road pavement resulting from the transport of product from the Revised Project, should the Revised Project be approved.
- 1.18.3** *While negotiations have not yet been completed, Daracon has offered to contribute to road maintenance of Station Street under the proposed VPA with DSC, including carrying out overlay works at the commencement of operations and an ongoing contribution towards maintenance of the road.*

1.19 Annual Review

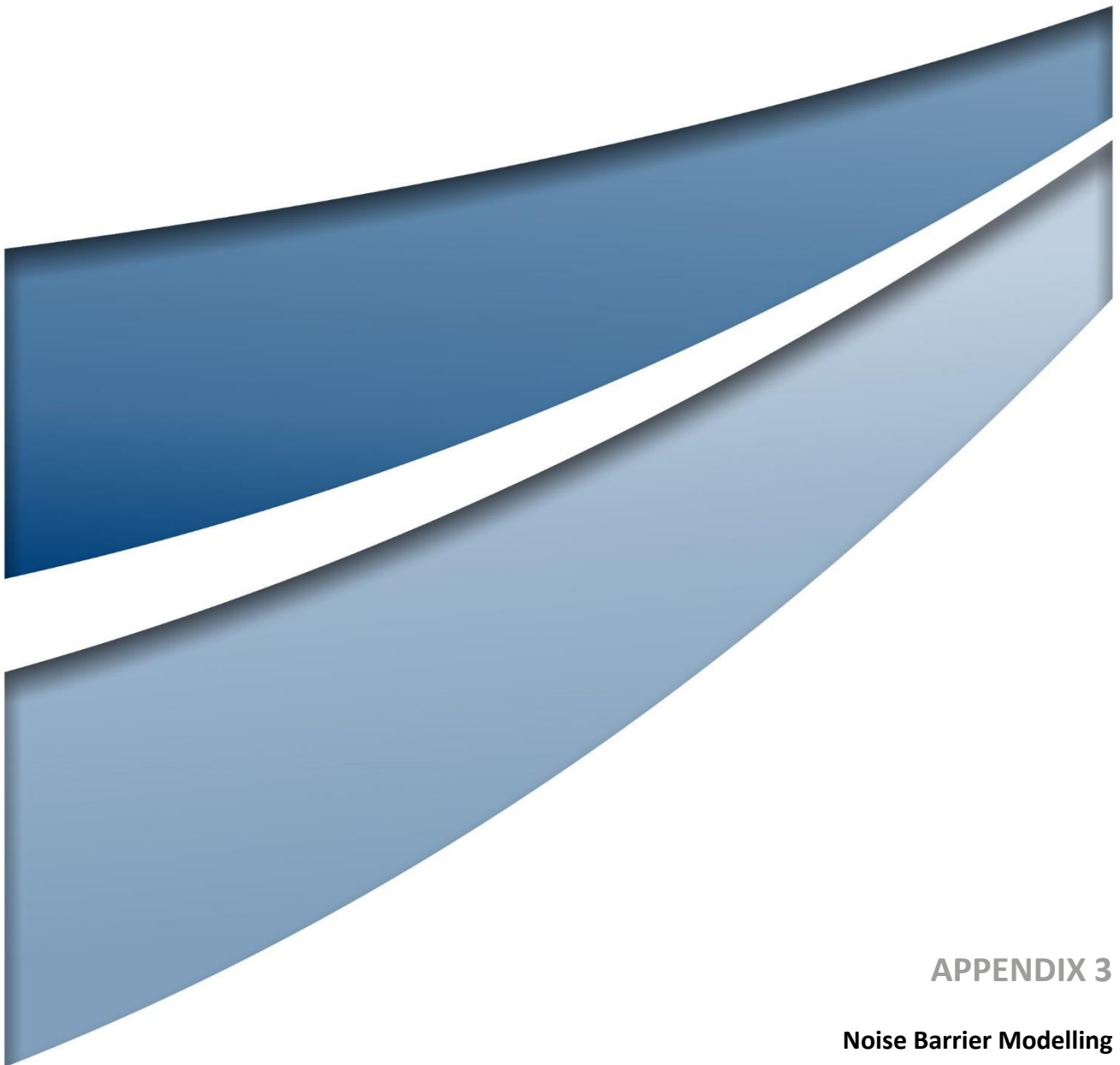
- 1.19.1** Daracon will complete an Annual Review each year which will review the environmental performance of the development. Among other things, the Annual Review will include:
 - a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year

- identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.
- All reporting required by the development consent will be made publicly available on the quarry website.

1.20 Access to Information

1.20.1 Daracon will make the following information and documents publicly available on its website:

- all current statutory approvals
- all approved strategies, plans and programs required under conditions of a development consent
- minutes of CCC meetings
- regular reporting on the environmental performance and comprehensive summaries of the monitoring results
- contact details to enquire about the development or to make a complaint
- a complaints register, updated monthly
- copies of Annual Reviews and audit reports prepared as part of any Independent Environmental Audit of the Revised Project and Daracon's response to the recommendations in any audit report.



APPENDIX 3

Noise Barrier Modelling

14 November 2021

Kirsty Davies
Principal Environmental Consultant
Umwelt (Australia) Pty Limited

E | kdavies@umwelt.com.au

Dear Kirsty

RE: Martins Creek Quarry Extension Project – Potential Noise Barrier

The Martins Creek Quarry (the quarry) is operated by Buttai Gravel Pty Ltd, which is part of the Daracon Group (hereafter referred to as Daracon). The quarry is an existing hard rock quarry situated within the Local Government Area (LGA), approximately 7 kilometres (km) north of Paterson and 28 km north of Maitland, New South Wales (NSW). Daracon is seeking development consent under the Environmental Planning and Assessment Act 1979 (EP&A Act) to expand the quarry operations at the Martins Creek Quarry.

The Amended Development Application (ADA) and Response to Submissions (RTS) Report (ADA Report) for the Martins Creek Quarry Extension Project (Umwelt, 2021) was placed on public exhibition from 2 June 2021 to 31 July 2021.

The NSW Environment Protection Authority (EPA), in its submission on the Revised Project, requested that Daracon assess and advise if any other operational management measures can be implemented during the transitional time until year 4 when the new access road from Dungog Road is built. The ADA Report proposes rail loading during the 4 transitional years will be limited to day-time only. The noise predictions presented in the Noise Impact Assessment (NIA) indicate rail loading with the existing facility could result in 12 receivers experiencing noise levels greater than 5 dB above the respective nominated project noise trigger levels (PNTL).

Further investigation has been undertaken on potential reasonable and feasible noise mitigation measures for the Revised Project, should agreements with potentially affected residences not be reached.

Expectation of Section of the NPfI

The methodology used to assess the noise impacts from the East Pit processing area is based on the requirement of Section 6 of the Noise Policy for Industry (NPfI) where it acknowledged that existing industrial sources were designed for higher noise emission levels than the project noise trigger levels outlined in the NPfI. The methodology in Section 6 of the NPfI notes:

- there is no 'one-size-fits-all' approach to determine the impact from an existing industry

- that the project noise trigger levels should not be applied as mandatory noise limits
- for existing industry that has been operating for more than 10 years and exceeds the project amenity noise level, the project amenity noise level may be adopted as the project noise trigger level
- where the project noise trigger levels are exceeded all feasible and reasonable noise mitigation strategies should be assessed
- the agreed programs of work to reduce high existing noise levels to acceptable levels take time to implement
- agreed programs of work provide for flexibility in the choice of noise reduction measures
- the significance of residual noise impacts should be addressed on a case-by-case basis.

There are four aspects that have been considered in the iterative design of the Revised Project in relation to the loading of rail wagons on the quarry spur line. These are as follows:

- the proximity of the railing loading facility to the receivers in Station Street
- the noise level generated by the loading facility as an existing industrial source that is old and includes no noise mitigation measures
- the location of the existing rail wagon loading facility requires the locomotives to use a section of the rail siding opposite dwelling Station Street during the wagon loading
- the transit of trains along the rail siding.

The iterative design of the Revised Project considered options such as:

- attenuate the existing rail loading facility. This included adding a noise barrier along the rail siding opposite the residence in Station Street so locomotives could use the line during wagon loading
- attenuate and relocate the existing rail loading facility and conveyor system further north along the existing rail spur
- ceasing rail loading altogether.

The preferred design option is to extend the rail spur into the northern section of the East Pit processing area increasing the distance attenuation of the wagon loading activities to the receivers in Station Street. The rail spur would be approximately 10 metres below the floor level of the existing East Pit processing area/stockpiles adding additional barrier attenuation between wagon loading activities to the receivers in Station Street. The extension of the spur will be with loaders with the existing conveyor and bin being left in the original position.

The proposed extension of the rail spur meets the objectives of Section 6 of the NPfI. The request by the EPA to investigate other noise mitigation measures that could be implemented during the transitional time until year 4 has been considered by Daracon.

The ADA Report proposes rail loading during the 4 transitional years will be limited to day-time only. The noise predictions presented in the NIA indicate rail loading with the existing facility could result in 12 receivers experiencing noise levels greater than 5 dB above the respective nominated PNLT, during these daytime activities. The noise mitigation strategy considered attenuation of the noise from the wagon loading activities (wagon loading and filling the wagon loader bin) and the installation of a barrier between the locomotives on the rail siding and the receivers along the northern end of Station Street.

Noise Barrier Attenuation on Station Street

The calculation of the attenuation due to the presence of a barrier is based on the method described in CONCAWE. The noise emanating from a locomotive has been broken into three components where 50% is from the top of the locomotive (exhaust), 25% from the side of the locomotive (fans) and 25% from the bottom of the locomotive (engine). The nominated barrier height is from the top of the railhead and it is assumed the top of the locomotive is 3.6 metres above the top of the railhead. The barrier model and subsequent transmission paths from the three source locations is shown diagrammatically in **Figure 1**.

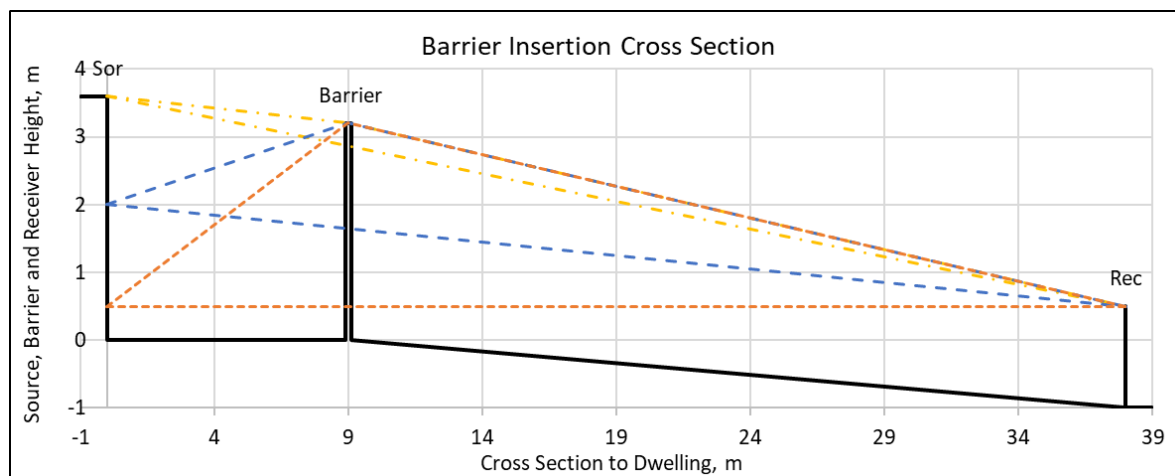


Figure 1 Barrier Insertion Cross Section

It has been assumed the sound power of the locomotive while at low idle during wagon loading can be represented by the 64Hz frequency band. The effectiveness of the barrier at different heights is shown in the following chart:

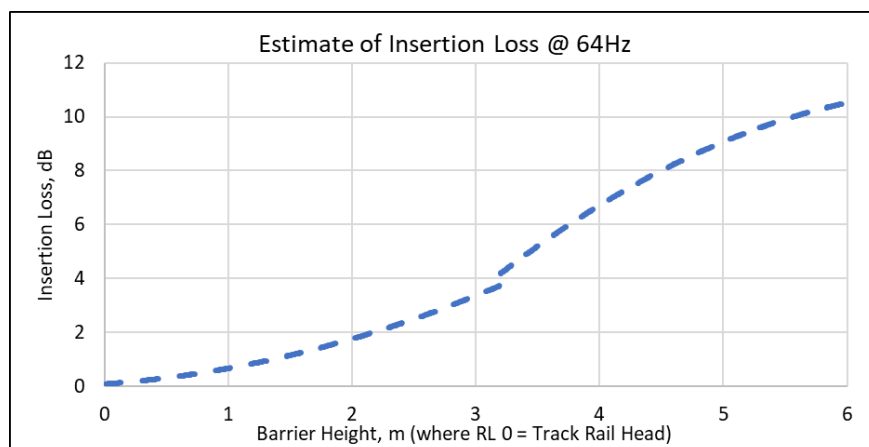


Figure 2 Estimate of insertion loss at 64Hz

Analysis of Year 2 Rail Loading Modelled Scenarios with different Barrier Heights

The base scenario is the existing Rail Loading operating with the existing approved extraction in the West Pit, operation of the Processing Plant and the filling and dispatch of road trucks.

The Year 2 modelled scenarios in **Table 1** are:

- Scenario 1:** Full operations without Rail Loading but with extraction in the West Pit, full operation of the Processing Plant and the filling and dispatch of road trucks
- Scenario 2:** Scenario 1 plus Rail Loading operating in the current format
- Scenario 3:** Scenario 2 and additional noise control around the rail loader (-6dB) and no noise barrier, a 3 metre noise barrier or a 4 metre noise barrier between the locomotives on the rail siding shunting the wagons during loading and the receiver along the northern end of Station Street
- Scenario 4:** Scenario 3 and shut down extraction in the West Pit
- Scenario 5:** Scenario 4 and shutdown primary and secondary processing and ancillary activities
- Scenario 6:** Scenario 5 but shutdown tertiary processing and the filling and dispatch of road trucks.

Table 1 Modelling Scenarios of Year 2 Operations

Year 2 Scenario	Rail Loading	Extraction from West Pit	Primary and Secondary Processing Plant	Tertiary Processing	Dispatch of Road Transport
1	-	X	X	X	X
2	X ¹	X	X	X	X
3	X ¹	X	X ²	X	X
4	X ¹	-	X ²	X	X
5	X ¹	-		X	X
6	X ¹	-	-	-	=

Notes ¹ Attenuation applied to the rail loading facility

² Additional attenuation of the secondary building by closing in the openings on the south side and west side of the building

The predicted day-time noise levels at the residential receiver locations during Years 2 are presented in **Table 2**, **Table 3** and **Table 4** for no barrier, a 3 metre barrier and a 4 metre barrier, respectively. The modelled meteorological conditions are:

- calm neutral conditions
- 1.7 m/s wind from the easterly
- 3.0 m/s wind from the southerly
- 3.0 m/s wind from the north-westerly.

The legend to **Table 2**, **Table 3** and **Table 4** is as follows:

Legend	
67	Greater than 5 dB above PNTL
nn	Could increase to greater than 5 dB above PNTL due to locomotive location
44	Up to 5 dB above the PNTL
39	Less than or equal to the PNTL

Table 2 Predicted Noise Levels – No Noise Barrier, dB(A)

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
Calm neutral conditions (B0001)										
R001	23 Station St	NAG01	64	58	54	64	59 ¹	59 ¹	58 ¹	58 ¹
R002	21 Station St	NAG01	65	58	54	65	61 ¹	60 ¹	60 ¹	60 ¹
R003	19 Station St	NAG01	66	58	52	66	62 ¹	62 ¹	62 ¹	61 ¹
R004	17 Station St	NAG01	67	58	48	67	64	64	64	64
R005	15 Station St	NAG01	64	58	47	63 ¹	61 ¹	61 ¹	61 ¹	61 ¹
R019	1-3 Grace Ave	NAG05	39	40	34	39	36	35	34	30
R041	249 Dungog Rd	NAG06	48	40	33	38	34	33	32	29
R055	221 Dungog Rd	NAG06	42	40	35	39	37	36	34	31
R066	223 Dungog Rd	NAG06	37	40	33	36	34	33	31	27
R070	199 Dungog Rd	NAG06	43	40	36	41	38	38	35	33
R034	338 Dungog Rd	NAG09	42	40	42	42	42	24	21	16
R076	170 Dungog Rd	NAG14	47	40	36	42	38	38	37	34
1.7 m/s wind from the easterly (B0044)										
R001	23 Station St	NAG01	65	58	55	64	60 ¹	60 ¹	59 ¹	58 ¹
R002	21 Station St	NAG01	66	58	55	66	61 ¹	61 ¹	60 ¹	60 ¹
R003	19 Station St	NAG01	66	58	54	66	62 ¹	62 ¹	62 ¹	62 ¹
R004	17 Station St	NAG01	67	58	50	67	64	64	64	64
R005	15 Station St	NAG01	64	58	49	64	61 ¹	61 ¹	61 ¹	61 ¹
R019	1-3 Grace Ave	NAG05	46	40	40	46	42	41	39	37
R041	249 Dungog Rd	NAG06	48	40	43	46	43	42	39	38
R055	221 Dungog Rd	NAG06	48	40	43	47	44	43	41	39
R066	223 Dungog Rd	NAG06	48	40	44	48	45	44	41	40
R070	199 Dungog Rd	NAG06	48	40	44	48	46	45	42	40
R034	338 Dungog Rd	NAG09	47	40	46	47	46	28	25	19
R076	170 Dungog Rd	NAG14	47	40	40	46	42	42	40	38
3.0 m/s wind from the southerly (B0070)										
R001	23 Station St	NAG01	63	58	51	63 ¹	58 ¹	58 ¹	57 ¹	57 ¹
R002	21 Station St	NAG01	65	58	51	65	60 ¹	60 ¹	60 ¹	59 ¹
R003	19 Station St	NAG01	66	58	50	66	62 ¹	62 ¹	61 ¹	61 ¹
R004	17 Station St	NAG01	66	58	46	66	64	64	64	64
R005	15 Station St	NAG01	63	58	44	63 ¹	60 ¹	60 ¹	60 ¹	60 ¹
R019	1-3 Grace Ave	NAG05	40	40	34	40	36	36	34	32
R041	249 Dungog Rd	NAG06	48	40	34	39	35	34	33	32
R055	221 Dungog Rd	NAG06	40	40	34	38	35	34	33	29
R066	223 Dungog Rd	NAG06	36	40	32	36	33	32	30	29
R070	199 Dungog Rd	NAG06	40	40	35	39	36	35	32	30
R034	338 Dungog Rd	NAG09	44	40	44	44	44	29	27	21
R076	170 Dungog Rd	NAG14	47	40	32	36	32	32	30	27
3.0 m/s wind from the north-westerly (B0073)										
R001	23 Station St	NAG01	63	58	52	62 ¹	58 ¹	58	57	57
R002	21 Station St	NAG01	65	58	53	64	60 ¹	60	59	59
R003	19 Station St	NAG01	65	58	52	65	61 ¹	61	61	61
R004	17 Station St	NAG01	66	58	48	66	64	63	63	63
R005	15 Station St	NAG01	63	58	47	63 ¹	60 ¹	60	60	60

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
R019	1-3 Grace Ave	NAG05	35	40	32	35	33	31	30	25
R041	249 Dungog Rd	NAG06	48	40	33	36	32	29	28	25
R055	221 Dungog Rd	NAG06	39	40	33	36	34	33	31	27
R066	223 Dungog Rd	NAG06	34	40	31	33	31	29	28	22
R070	199 Dungog Rd	NAG06	39	40	35	39	36	35	32	29
R034	338 Dungog Rd	NAG09	22	40	36	36	36	19	16	11
R076	170 Dungog Rd	NAG14	47	40	41	47	43	42	41	40

Notes: ¹ Exceedance of PNTL in the modelling results related to location of the locomotive while shunting and could also affect receivers R001 to R005

Table 3 Predicted Noise Levels – 3 metre Noise Barrier, dB(A)

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
Calm neutral conditions (B0001)										
R001	23 Station St	NAG01	64	58	54	64	59	59	58	58
R002	21 Station St	NAG01	65	58	54	65	61	61	61	61
R003	19 Station St	NAG01	66	58	52	66	62	62	62	62
R004	17 Station St	NAG01	67	58	48	67	63	63	63	63
R005	15 Station St	NAG01	64	58	47	63	60	60	60	59
R019	1-3 Grace Ave	NAG05	39	40	34	39	36	35	34	30
R041	249 Dungog Rd	NAG06	48	40	33	38	34	32	31	27
R055	221 Dungog Rd	NAG06	42	40	35	39	37	36	34	31
R066	223 Dungog Rd	NAG06	37	40	33	36	34	33	31	27
R070	199 Dungog Rd	NAG06	43	40	36	41	38	38	35	33
R034	338 Dungog Rd	NAG09	42	40	42	42	42	24	21	16
R076	170 Dungog Rd	NAG14	47	40	36	42	38	38	36	34
1.7 m/s wind from the easterly (B0044)										
R001	23 Station St	NAG01	65	58	55	64	60	60	59	58
R002	21 Station St	NAG01	66	58	55	66	62	62	61	61
R003	19 Station St	NAG01	66	58	54	66	63	63	62	62
R004	17 Station St	NAG01	67	58	50	67	64	63	63	63
R005	15 Station St	NAG01	64	58	49	64	60	60	60	60
R019	1-3 Grace Ave	NAG05	46	40	40	46	42	41	39	37
R041	249 Dungog Rd	NAG06	48	40	43	46	43	41	39	39
R055	221 Dungog Rd	NAG06	48	40	43	47	44	43	41	39
R066	223 Dungog Rd	NAG06	48	40	44	48	45	44	41	40
R070	199 Dungog Rd	NAG06	48	40	44	48	46	45	42	40
R034	338 Dungog Rd	NAG09	47	40	46	47	46	28	25	19
R076	170 Dungog Rd	NAG14	47	40	40	46	42	41	40	38
3.0 m/s wind from the southerly (B0070)										
R001	23 Station St	NAG01	63	58	51	63	58	58	57	57
R002	21 Station St	NAG01	65	58	51	65	61	61	61	61
R003	19 Station St	NAG01	66	58	50	66	62	62	62	62
R004	17 Station St	NAG01	66	58	46	66	63	63	63	63
R005	15 Station St	NAG01	63	58	44	63	59	59	59	59
R019	1-3 Grace Ave	NAG05	40	40	34	40	36	35	34	31
R041	249 Dungog Rd	NAG06	48	40	34	39	34	33	32	29

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
R055	221 Dungog Rd	NAG06	40	40	34	38	35	34	33	29
R066	223 Dungog Rd	NAG06	36	40	32	36	33	32	30	26
R070	199 Dungog Rd	NAG06	40	40	35	39	36	35	32	29
R034	338 Dungog Rd	NAG09	44	40	44	44	44	29	27	21
R076	170 Dungog Rd	NAG14	47	40	32	36	32	32	30	27
3.0 m/s wind from the north-westerly (B0073)										
R001	23 Station St	NAG01	63	58	52	62	58	58	57	57
R002	21 Station St	NAG01	65	58	53	64	61	61	60	60
R003	19 Station St	NAG01	65	58	52	65	62	62	61	61
R004	17 Station St	NAG01	66	58	48	66	63	62	62	62
R005	15 Station St	NAG01	63	58	47	63	59	59	59	59
R019	1-3 Grace Ave	NAG05	35	40	32	35	33	31	30	25
R041	249 Dungog Rd	NAG06	48	40	33	36	30	28	27	23
R055	221 Dungog Rd	NAG06	39	40	33	36	34	33	31	27
R066	223 Dungog Rd	NAG06	34	40	31	33	31	29	28	22
R070	199 Dungog Rd	NAG06	39	40	35	39	36	35	32	29
R034	338 Dungog Rd	NAG09	22	40	36	36	36	19	16	11
R076	170 Dungog Rd	NAG14	47	40	41	47	43	42	41	40

Table 4 Predicted Noise Levels – 4 metre Noise Barrier, dB(A)

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
Calm neutral conditions (B0001)										
R001	23 Station St	NAG01	64	58	54	64	58	58	57	57
R002	21 Station St	NAG01	65	58	54	65	59	59	58	58
R003	19 Station St	NAG01	66	58	52	66	60	60	59	59
R004	17 Station St	NAG01	67	58	48	67	60	60	60	60
R005	15 Station St	NAG01	64	58	47	63	57	57	57	57
R019	1-3 Grace Ave	NAG05	39	40	34	39	36	35	33	29
R041	249 Dungog Rd	NAG06	48	40	33	38	34	32	30	26
R055	221 Dungog Rd	NAG06	42	40	35	39	37	36	34	30
R066	223 Dungog Rd	NAG06	37	40	33	36	34	33	31	26
R070	199 Dungog Rd	NAG06	43	40	36	41	38	37	35	32
R034	338 Dungog Rd	NAG09	42	40	42	42	42	24	21	15
R076	170 Dungog Rd	NAG14	47	40	36	42	38	37	36	33
1.7 m/s wind from the easterly (B0044)										
R001	23 Station St	NAG01	65	58	55	64	60	59	58	58
R002	21 Station St	NAG01	66	58	55	66	60	60	59	59
R003	19 Station St	NAG01	66	58	54	66	61	60	60	59
R004	17 Station St	NAG01	67	58	50	67	61	60	60	60
R005	15 Station St	NAG01	64	58	49	64	58	58	57	57
R019	1-3 Grace Ave	NAG05	46	40	40	46	41	41	39	36
R041	249 Dungog Rd	NAG06	48	40	43	46	42	41	38	36
R055	221 Dungog Rd	NAG06	48	40	43	47	43	43	41	39
R066	223 Dungog Rd	NAG06	48	40	44	48	45	44	41	39
R070	199 Dungog Rd	NAG06	48	40	44	48	46	45	42	40

Rec ID	Location	Ass. Grp	Existing Approved	Day PNTL	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6
R034	338 Dungog Rd	NAG09	47	40	46	47	46	28	25	18
R076	170 Dungog Rd	NAG14	47	40	40	46	42	41	40	38
3.0 m/s wind from the southerly (B0070)										
R001	23 Station St	NAG01	63	58	51	63	57	56	56	55
R002	21 Station St	NAG01	65	58	51	65	58	58	58	58
R003	19 Station St	NAG01	66	58	50	66	59	59	59	58
R004	17 Station St	NAG01	66	58	46	66	60	60	59	59
R005	15 Station St	NAG01	63	58	44	63	56	56	56	56
R019	1-3 Grace Ave	NAG05	40	40	34	40	35	35	33	29
R041	249 Dungog Rd	NAG06	48	40	34	39	33	32	31	27
R055	221 Dungog Rd	NAG06	40	40	34	38	35	34	32	28
R066	223 Dungog Rd	NAG06	36	40	32	36	33	32	30	25
R070	199 Dungog Rd	NAG06	40	40	35	39	36	35	32	29
R034	338 Dungog Rd	NAG09	44	40	44	44	44	29	27	20
R076	170 Dungog Rd	NAG14	47	40	32	36	32	31	29	26
3.0 m/s wind from the north-westerly (B0073)										
R001	23 Station St	NAG01	63	58	52	62	57	57	56	56
R002	21 Station St	NAG01	65	58	53	64	59	58	58	57
R003	19 Station St	NAG01	65	58	52	65	59	59	58	58
R004	17 Station St	NAG01	66	58	48	66	59	59	59	59
R005	15 Station St	NAG01	63	58	47	63	56	56	56	56
R019	1-3 Grace Ave	NAG05	35	40	32	35	32	31	29	24
R041	249 Dungog Rd	NAG06	48	40	33	36	30	28	27	21
R055	221 Dungog Rd	NAG06	39	40	33	36	34	33	31	26
R066	223 Dungog Rd	NAG06	34	40	31	33	31	29	28	22
R070	199 Dungog Rd	NAG06	39	40	35	39	35	35	32	28
R034	338 Dungog Rd	NAG09	22	40	36	36	36	19	16	10
R076	170 Dungog Rd	NAG14	47	40	41	47	43	42	41	40

Discussion of Modelling Results

Where there is no noise barrier in place (refer to **Table 2**), the results indicate:

- **Scenario 2:** the existing rail loading could result in 12 receivers experiencing noise levels greater than 5 dB above the respective PNTL
- **Scenario 3:** the additional noise mitigation of the existing rail loader reduces the number of receivers experiencing noise levels greater than 5 dB above the respective PNTL to 7. It is noted that Scenario 3 includes additional noise mitigation of 6 dB for the existing rail loader. The engineering designs have not been completed for this work and would need to be validated
- **Scenario 4:** with the inclusion of shut down extraction in the West Pit, noise levels at 2 receivers to the west of the West Pit will be reduced. This occurs because acoustic space can be provided for the rail loader by shut down extraction in the West Pit
- **Scenario 5 and 6:** neither scenario noticeably alter the acoustic environment at the receivers along the northern end of Station Street. This is due to the locomotives working on the rail siding shunting the wagons during the loading activity.

The noise mitigation strategy considered in **Table 3** and Table 4 investigated the attenuation of the noise from the locomotives working on the rail siding by installing a noise barrier between the locomotives on the rail siding and the receivers along the northern end of Station Street. The results in Table 4 indicate a 4 metre barrier (measured from the railhead) could reduce the number of receivers experiencing noise levels greater than 5 dB above the respective daytime PNTL to 2 residences. Scenario 4 in Table 4 demonstrates that with shutting down extraction in the West Pit whilst train loading, this scenario could result in no receivers experiencing noise levels greater than 5 dB above the respective PNTL.

Yours sincerely

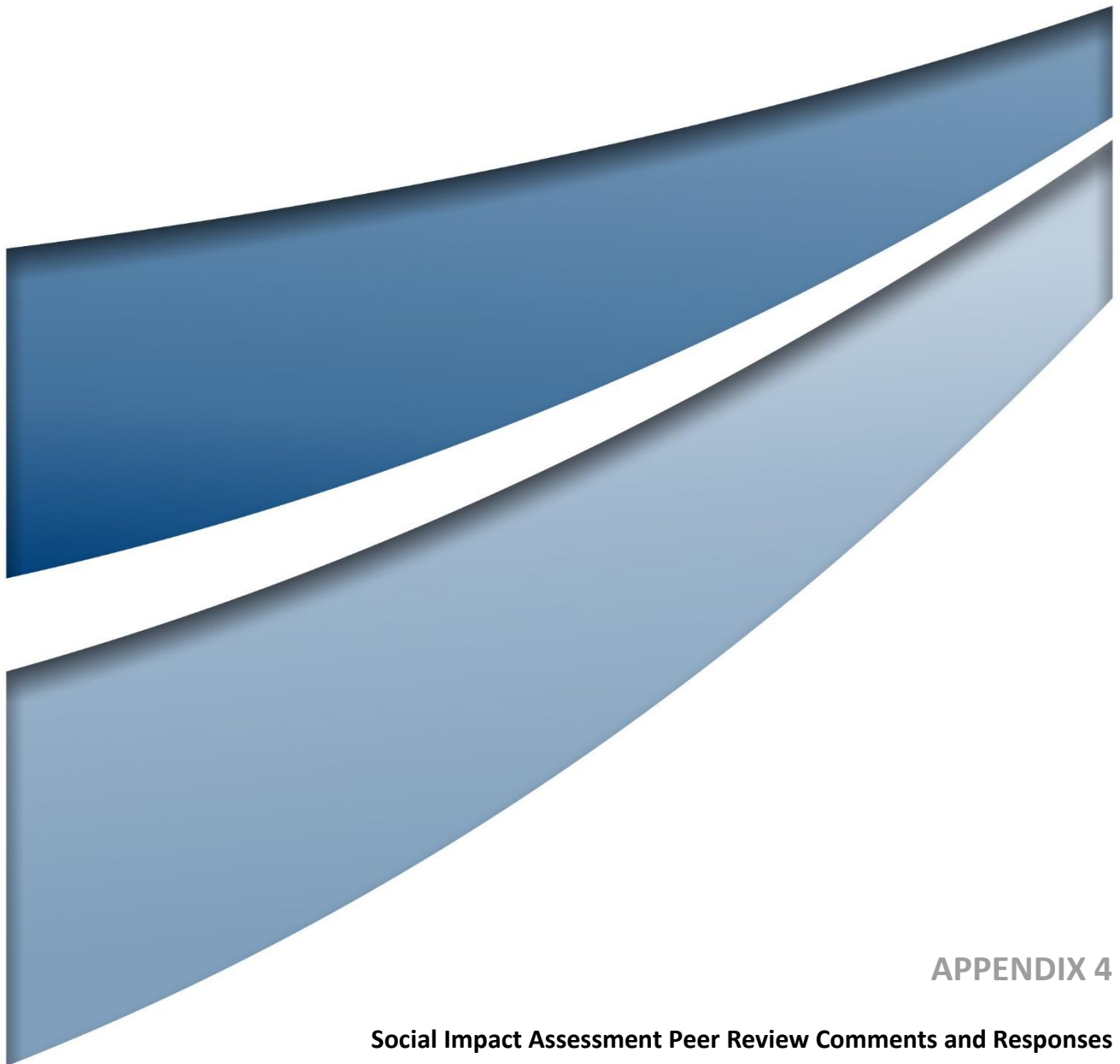
A handwritten signature in black ink, appearing to read 'Tim Procter', with a stylized flourish at the end.

Tim Procter

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APPENDIX 4

Social Impact Assessment Peer Review Comments and Responses

Social Impacts – Peer Reviews

The Amended Development Application (ADA) and Response to Submissions (RTS) Report (ADA Report) for the Martins Creek Quarry Extension Project (Umwelt, 2021) was placed on public exhibition from 2 June 2021 to 31 July 2021. A Submission Report has been prepared to address the key issues raised in the submissions received during the public exhibition period.

A number of submissions were received from members of the public and organisations relating to the potential social impacts of the Revised Project. In addition to these submissions, two separate and independent peer reviews of the Social Impact Assessment (SIA) were also undertaken on behalf of:

- Dungog Shire Council (DSC) (Judith Stubbs and Associates, September 2021)
- Martins Creek Quarry Action Group (MCQAG) (Dr Hedda Haugen Askland and Dr Louise Askew, July 2021)

As there are some common themes raised within each of these SIA peer reviews, they have been responded to collectively in the sections below under the following heading themes:

- Lived Experiences
- Social Baseline and Baseline Impacts
- Social Impact Matrix and Risk Assessment Process
- Risk Assessment Process (including application of the framework and outcomes)
- Proposed Mitigation and Management Strategies.

A selection of comment examples with regards to each of these themes are also included in the sections below.

1.1 Lived Experiences

Representative comment(s):

Findings

The lived experience of social impacts by the community are not adequately taken into account as part of the assessment.

Recommendation

The unique nature of this case enables measurement of the lived impacts of the proposed development and its implications for people's sense of place, belonging, rural character and amenity. Rather than forwarding this as 'perceived' social impacts that can attain a prediction of significance, the significance can and should be measured based on the lived experience of living with the impacts of the proposed development. This 'lived experience' must be taken into account when revising the risk assessment process and ratings.

It [the SIA] also significantly understates the ‘lived experiences’ of the proposed project features that have been experienced by local communities during an extended period of unlawful operations. Although the research and consultation process contained in the SIA is rigorous, it has been used in ways that have led to misleading and inaccurate assessments of impacts, risks and management options.

SIA is an approach to predicting and assessing the likely consequences of a proposed action in social terms and developing options and opportunities to improve social outcomes. Best practice SIA is participatory and involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense, to provide a complete picture of potential impacts, their context and meaning (Ross, 1992).

The SIA prepared for the Revised Project has sought to identify the potential social impacts that matter to different stakeholder groups through:

- analysis of outcomes of historical engagement outcomes from activities preceding the involvement of Umwelt
- direct engagement with a range of stakeholders, in the very early stages and during the SIA program.

As identified at the methodology presented at Section 3 of the SIA (refer to Appendix O of the ADA Report), the SIA has also drawn on a range of secondary data to inform the development of the social environment and to provide a basis for the assessment and evaluation of potential impacts. The SIA has utilised data from a range of sources that addresses the scale and nature of the project, stakeholders likely to be affected, values and aspirations of key stakeholders, natural and built features, demographic, social and cultural trends, previous development in the locality and related projects and local history.

As outlined at Section 3.4.1 of the SIA, a key first step of the planning phase for the SIA was an extensive review and analysis of the 887 submissions made by both government agencies and the broader public on the Environmental Impact Statement (EIS) for the Original Project which was on public exhibition between 13 October and 24 November 2016.

The reviewed submissions documented the way in which community stakeholders had been affected by the quarry’s activities to date and perceptions with regards to significance of these existing experiences and the extent to which potential impacts were likely to be felt in the future.

The review of submissions considered stakeholder identified issues by both location and frequency (refer to Figures 4.6 and 4.7 of the SIA) with the following quotes providing some examples of the lived experiences documented within these submissions.

“I live about 700 metres from Paterson Road at Bolwarra and am regularly woken early by trucks using their exhaust brakes on the roundabout at the junction of Flat Road. To increase the number of trucks and to start sending them even earlier will have a severe impact on the people who live in this area.” – EIS submission (referred to at Section 6.3.1.4, SIA)

“In 24 months, 2014 to 2015, my vehicle sustained two smashed windscreens, both from gravel that bounced off trucks as they exited the quarry. This has been reported to Daracon. It has also increased my insurance premiums.” – EIS submission (referred to at Section 6.4.1, SIA)

“Current traffic levels are already proving to be unsafe with the speed and volume of heavy vehicles moving through the built-up community, passing by a school and retail shops and residential homes.” – EIS Submission referred to at Section 6.4.1, SIA)

“There is no pedestrian crossing in the township for pedestrians to safely cross while up to 80 trucks per hour pass through the town. – EIS Submission referred to at Section 6.4.1, SIA)

In addition to this, the SIA also considered the outcomes of a Community Attitudes Survey undertaken by the MCQAG between April to August 2015 (MCQAG, 2015) which sought to document community perceptions and attitudes towards the Original Project (referred to as the proposed project within that survey report) and Daracon as a company. Specific identified objectives of that survey were to:

- Determine how Daracon and the Martins Creek Quarry operations were perceived by the community.
- Identify key perceived issues and impacts associated with the proposed project (Original Project).
- 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.
- 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.

Importantly, the survey identified a prioritised list of potential social impacts of the quarrying operations as identified by community stakeholders at that time (presented in the SIA as Figure 4.9), important local community values, potential mitigation and management strategies and documentation of the ways in which normal activities within the area had already been affected as a result of Daracon’s activities.

‘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’ – MCQAG Community Survey

‘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 are very nervous on the roads because of the trucks’ - MCQAG Community Survey

In addition to the review of the above, engagement to allow for the collection of primary data to inform the SIA was also undertaken over two main rounds between June and August 2019 and again between July and December 2020 with the objective of these discussions being to:

- Confirm issues of community concern as documented in the submissions and ensure the SIA project team fully understood these and how they may have been experienced by different community members.
- Further explore issues of concern associated with the project and possible mechanisms for addressing the potential impacts identified.

As required by the 2017 SIA Guideline, this primary data collection has allowed the SIA team to confirm the outcomes of desktop research and validate people’s reports of their lived experiences and perceptions.

The methodology (and number of stakeholders directly consulted) for the SIA is outlined in Section 3.5 of the SIA (refer to Appendix O of the ADA Report). The outcomes of this direct engagement is presented in

Section 6 of the SIA including a summary of the frequency of the perceived impacts as identified through engagement with stakeholders (refer to Figure 6.1 of the SIA), and in doing so provides an indication of the level of importance of each impact theme from a stakeholder perspective.

Many of the interviews held during the above consultation activities referred to how issues and impacts had been experienced to date and are the lived experiences of community members with these experiences documented throughout SIA (refer to Section 6 and 7 of Appendix O). The differences in the way in which the community expressed their concerns between Round 1 and Round 2 of engagement (when the quarry operations had not been above approved levels) was also noted.

“I have the lived experience and the fear that the lived experience will come back and other people will also have to experience it.” – Round Two

“The break from the trucks has shown the village what the village should be like. They have their rural amenity back.” – Round Two

“The lived experience is not consistent with levels being recorded. Monitoring requirements are basically 1980's level. – Round Two

“The physical presence of trucks on a road every minute of every day, will cause and has caused impacts to amenity and the physical presence of the trucks divides the village in two and provides a continual reminder to me, my household and the village residents that they are living in a village that is transected by a quarry haul road that was at the time operating illegally. That impact was unacceptable to me and my household.” – Round Two

A series of Collaborative Assessment Forums (CAFs) held throughout the SIA process sought to present the draft outcomes of various technical assessments of the proposed quarry operation and collect further community feedback issues of concern, proposed mitigation measures, and to allow for the suggestion of additional strategies; also allowed for the further collection and documentation of community concerns and lived experiences to date.

“The readings mean nothing to us, the numbers don’t help us, and we are living with it.” - Air Quality and Blasting CAF

Each of the above activities provided the SIA research team with an in depth understanding of the:

- existing operation and community context
- community stakeholder views with regards to the proposed project and towards Daracon
- how quarry operations had impacted community stakeholders to date, and
- how impacts associated with the quarry had changed over time.

The identified lived experiences of the community are subsequently documented throughout the SIA and more specifically and extensively throughout Section 6. Existing community values and perceptions towards Daracon are also documented at Section 5.

Given that it is stakeholders lived experiences that has informed their perceptions of significance of impacts, stakeholder views of how they have experienced impacts of the quarry to date has in turn

therefore informed the assessment of potential social impacts and associated risk ranking tables presented throughout Section 7 of the SIA. Section 7.1 of the SIA notes that the assessment and prediction of potential social impacts has included consideration of stakeholder reported views of potential social impacts.

In summary, the evaluation of potential social impacts presented throughout Section 7 of the SIA has drawn on consideration of community experiences to date and reported experiences, views and perceptions as provided through direct engagement for the SIA as well as a range of other data sources including outcomes of the EIS studies for the Revised Project and social baseline data.

Each of the identified potential impacts have been further assessed and their significance evaluated taking into consideration who is expected to be affected (including their level of concern relating to the potential impact), the timing in the Revised Project that such a potential impact may be experienced, the extent, duration, severity and sensitivity of the potential impact, and the consequence of the potential social impact and its likelihood of occurring. Consequence definitions have also been provided to assist this evaluation (refer to Table 7.3 of the SIA). Refer to **Section 1.3** for further discussion of the risk assessment process.

The peer review provided by Askannd and Askew (July 2021) notes that the significance can and should be measured based on the lived experience of living with the impacts of the proposed development with this 'lived experience' being taken into account when revising the risk assessment process and ratings.

As documented above, these lived experiences have in fact formed a large component of the determination of significance as presented at Section 7 of the SIA.

The use of terminology such as *stakeholder perceptions* and the fact that the SIA puts forward stakeholder identified potential impacts as "*perceived*" intends to no way diminish the significance of these lived experiences.

The term "*perception*" does not mean that the lived experience is not real, with the definition of perception being:

The ability to see, hear, or become aware of something through the physical senses (Cambridge Dictionary)

In psychology and cognitive sciences, perception refers to:

...the process of acquiring, interpreting, selecting and organizing sensory information in interpersonal and social environments. The word perception comes from the latin capere, meaning "to take", the prefix per- meaning "completely". So it is that part of perception that allows people to understand the individuals and groups of their social world, and thus an element of social cognition (E. R. Smith, D. M. Mackie (2000). Social Psychology. Psychology Press, 2nd ed., p. 20).

Simply, perception is the way in which people understand and interpret the world around them. Therefore, stakeholder identified potential impacts are still reported as perceptions in that the way and the extent to which each individual stakeholder has been affected by these will be different depending on their own personal circumstances. While the risk assessment process attempts to account for these differences by reporting the differences in potential impact by location and timing of these (e.g project timing), each impacted individual will still have a different view as to the significance of these potential impacts.

1.2 Social Baseline and Baseline Impacts

Representative comment(s):

The SIA demonstrates some confusion regarding baseline impacts, and seems to consider the baseline for the purpose of assessment of impacts to be the levels of impact experienced when the quarry was operating illegally, rather than operations under existing consents. The degree to which this incorrect baseline may have affected the assessment of the magnitude levels for potential social impacts has not been assessed in this review.

The appropriate baseline impacts can be determined from the Decision in *Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2)* [2018] NSWLEC 153, which sets out the uses allowable on the site under existing consents.

Overall, the expert review demonstrates that the SIA is misleading in its use of a comparative baseline for the project that does not reflect the currently approved operations. It also significantly understates the 'lived experiences' of the proposed project features that have been experienced by local communities during an extended period of unlawful operations. Although the research and consultation process contained in the SIA is rigorous, it has been used in ways that have led to misleading and inaccurate assessments of impacts, risks and management options.

Findings

An incorrect baseline is used to undertake the assessment.

- The SIA incorrectly uses the EIS exhibited in 2016 as a baseline for current operations and for the proposed 2021 amended Development Application (DA) project features. This baseline, which establishes the comparative measure for impact to that during the period of unlawful operation, significantly skews the evaluation of risk and impacts and leads to misleading proposals for mitigation and management.
- The incorrect baseline renders the assessment invalid and misleads the public by presenting proposed project features as 'reductions' 'restrictions', 'amendments' (see pages 6-9) – when they are, in large part, increases to the current approved operations.

Recommendation

We recommend that the SIA is assessed as invalid, and a request made to resubmit. The revised SIA should use the existing social research presented in the report to reassess impacts against the current approved operational baseline.

Findings

The current operations and project history are misrepresented.

The SIA report overlooks the current approved operations by using the misleading baseline (as described above).

Recommendation

The context and project background should be rewritten as part of the revised SIA to accurately represent current and historical operations and the project history.

Peer review commentary referring to lived experiences has been addressed above at **Section 1.1** and has been highlighted in that section, given that it is stakeholders lived experiences that has informed their perceptions of significance of potential impacts, stakeholder views of how they have experienced impacts of the quarry to date has in turn therefore informed the assessment of potential social impacts and associated risk ranking tables presented throughout Section 7 of the SIA (refer to Appendix O of the ADA Report) and the mitigation measures proposed with regards to changes to quarrying operations.

This is consistent with both the 2016 SEARs for the Original Project (SSD 6612) were provided to Daracon on 4 August 2016 by the Department of Planning and Environment (now the Department of Planning, Industry and the Environment) and advice subsequent provided post the exhibition phase of the Original Project from the DPE that a revised SIA be submitted as part of the Response to Submissions phase which at a minimum includes and / or adheres to the requirements outlined in the Table 0.1 (DPE request for Response to Submissions letter, dated 12 December 2016).

Table 0.1 Minimum SIA Requirements by DPE (DPE, 2016)

DPIE Requirement	Location in SIA
A comprehensive stakeholder identification or map with particular emphasis on potentially vulnerable groups	Section 3.0
Researches, analyses and qualitatively describe first-hand views (i.e., opinions, concerns and aspirations) of community members regarding the proposal	Section 6.0
Investigates and documents the views of other interested parties regarding the proposal	Section 6.0 and Project Social Pinpoint Page
Considers and assesses the different ways in which the project might affect various groups in the community, with particular attention to distributive equity and hard-to-reach community members	Section 7.0
Conducts a thorough assessment of potential social impacts, directly informed by insights gained through community engagement	Sections 6.0 & 7.0
Considers the potential significance of these impacts, in terms of: i) duration – when the impact will occur and over what period; ii) extent – in terms of both geography and number of people potentially affected; iii) severity – the intensity of the potential impact on different groups; iv) sensitivity – the social value placed on the impact by different groups, and their capacity to adapt to change; and v) level of concern/interest – the degree to which the impact is viewed as significant by different groups in the community (based on outcomes from engagement)	Section 7.0

DPIE Requirement	Location in SIA
Proposes how positive impacts might be secured or enhanced	Section 7.0
Proposes responses to significant negative impacts (avoid, minimise or, lastly, mitigate)	Section 7.0 & 8.0
Provides a comprehensive monitoring plan for social impacts, including appropriate responses for unanticipated impacts	Section 8.0
The DPE also noted that as a mechanism to support and inform a revised SIA, the SCIR (Appendix E) would require further work including:	
Prioritisation and identification of significance of issues to determine the importance of each issue to different parts of the community	Section 7.0
A discussion of whether the Applicant's responses to issues actually address the concerns (e.g., does restricting in-pit quarrying operations to between 6am and 6pm Monday to Saturday address community concerns around noise from this activity?)	Section 7.0 and Appendix 7
Identifying the relationships between the issues raised and the parts of, or groups in, the community to whom they relate	Section 6.0
Shifting the focus of engagement so that, as well as informing people of the Applicant's operational intentions, there is genuine, inclusive engagement around impacts on the social fabric and intangible dimensions of the community	Section 3.3, 3.4, Section 6.0 Project Social Pinpoint Page
A description of proposed mitigation and management measures that are not discussed in relevant impact assessment reports elsewhere in the EIS (eg. relating to road noise mitigation measures, on-site truck parking and consultation with residents in View Street). The Department requests that any description of mitigation and management measures is properly considered in relevant impact assessments and clearly outlined in a consolidated section of the RtS.	Section 7.0 & 8.0

With regards to the legally approved operations, it is acknowledged that the SIA has not discussed the legal proceedings and outcomes of *Dungog Shire Council v Hunter Industrial Rental Equipment Pty Ltd (No 2) [2018] NSWLEC 153* in detail given that the outcomes of these proceedings and implications of these had been addressed in depth within the ADA Report. The SIA seeks to assess the Revised Project on its merits compared to the approved operations and Original Project.

The outcomes of proceedings and significance of these have not been ignored within the SIA. Section 4 of the SIA describes the operational context of the Revised Project including the perceptions of Daracon as a company and the quarry more specifically. Throughout Section 6, the SIA also acknowledges community sentiment with respect to Daracon's historical operations and stakeholder views that they had been operating dishonestly by not operating in accordance with the original consent conditions. See for example below community stakeholder quotes presented within the SIA:

It's hard to trust them when they've been trading illegally – Round One

The original quarry footprint was mined to its limits many years ago. Daracon blatantly continue to operate illegally outside those boundaries thinking they are above the law costing our shire money with court costs etc – Round Two

Section 5.5 of the SIA also seeks to build a picture of both the development context of the area and also an understanding of the process of social change and communities' response to this change with Figure 5.4 documenting a series of significant events and developments that have occurred over time dating back to the issuing of consent by the DSC in 1991 up until the submission of the SIA in July 2020. Each of these events had been considered of relevance to the SIA.

The SIA does not consider the baseline for the assessment of the Revised Project to be the Original Project, as proposed in 2016. The comparison of potential impacts of the Revised Project to the Original Project were included by necessity, given that the SIA was part of an Amended Development Application, but that comparison does not seek to imply that the Original Project is the baseline for the assessment.

It is also important to note that the SIA considers the relevant technical studies in the consideration of potential impacts, which have used either the 1991 consent or a more conservative approach of no operations, as the baseline. This is not inconsistent with the SIA's consideration of the communities feedback in Rounds 1 and 2 of engagement, with Round 2 providing extensive feedback on community perception of lived experience with the quarry operating in limited operations.

The 2017 SIA Guideline requires that the SIA includes the social baseline documenting conditions and trends *without the project*. Section C1 of the Guideline also requires that the social baseline study should document the existing social environment, conditions and trends relevant to each of the potential social impacts.

Most significantly, the Guideline also requires that the social baseline study should draw on a range of primary and secondary data sources with the primary data to be *recent* and *relevant to the project* and its *area of social influence* and sourced from established methods for public participation including for example surveys and interviews with primary data collected during earlier community engagement activities for the project also able to be used.

The complexity with this SIA as has been noted within the provided peer reviews and as discussed at **Section 1.1**, the history of the quarry in the community has been long and hence the assessment of potential impacts has not been straight forward for a number of reasons. These including:

- information gathered for the approved operations preceded any assessment work on the Revised Project, in an era in which there was no government requirement for formal social impact assessment or monitoring for such operations. Documentation of the social environment and community sentiment regarding the quarry as existed at that time is therefore limited
- when engaging with the community to collect primary data to identify stakeholder issues and concerns for this SIA, discussions have (understandably) largely centred on the *lived experiences* with quarrying operations over its more recent history when aspects of the operations have been well in excess of those that had been approved. Notably these quarrying activities had also been well in excess of those being put forward in the current assessment process adding a further dimension of complexity.

Despite the above, and to counteract the prevalence in discussions with regards to the existing quarrying operations and the impacts of these, the engagement program also sought to collect primary data with regards to the importance that the community placed on their social environment and what they valued most about living in the community in order to assess the significance of the potential impacts that had been identified.

Community values identified are presented at Section 5.12.4 of the SIA, more specifically **Figure 5.45** and are reproduced below:

- sense of community
- quality of life

- access and infrastructure
- culture and heritage
- natural environment
- economic stability.

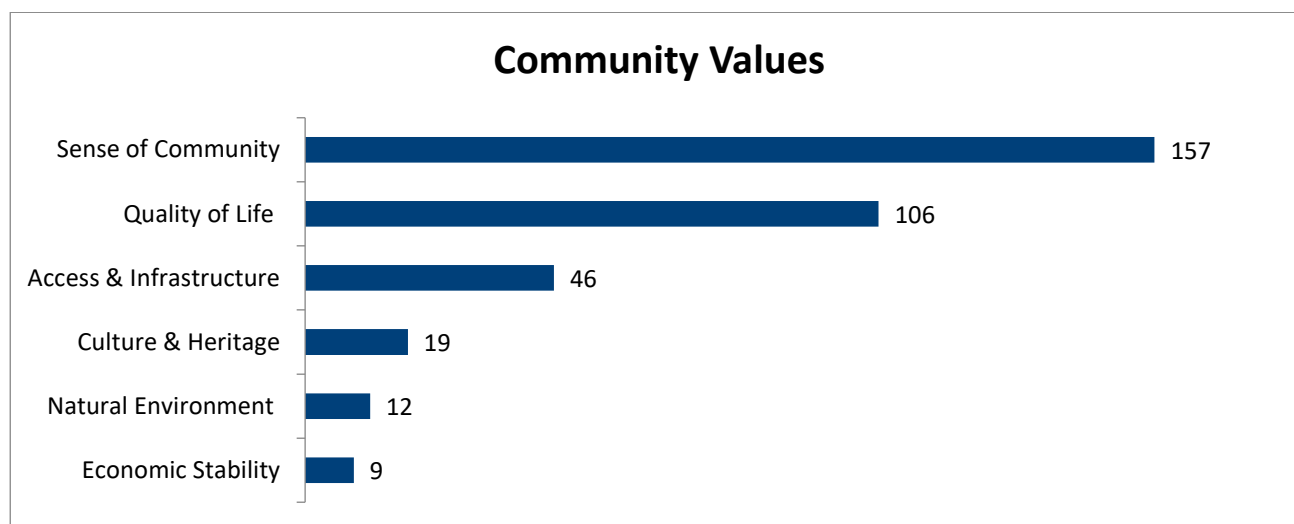


Figure 0.1 What do you Most Value about Living in this Community? Frequency

Source: Umwelt (2018)

Note: Multiple responses allowed

As indicated in **Section 1.1**, stakeholder views of changes in how they were experiencing impacts associated with the quarry between Round 1 and Round 2 were also recorded.

All of the above context has been included and considered within the assessment of potential social impacts. The evaluation of risk and impacts have not been skewed as evidenced by the high proportion of the identified potential impacts which have still been assessed as high (for some within the community), post mitigation.

By necessity, as part of the ADA process, the proposals for mitigation and management as put forward throughout Section 7 of the SIA include changes to the Original Project. Clear documentation of proposed mitigation measures is also consistent with the 2017 SIA Guideline which requires that applicants should make clear how negative potential social impacts will be managed, particularly those evaluated as significant and in the first instance, applicants should consider measures to avoid the potential impact by amending the project design. If avoidance is not possible, measures to reduce the potential impact or to limit its influence.

Changes to project design and parameters as originally put forward in the Original Project EIS have formed a key component to the proposed mitigation and management of potential social impacts in line with other technical assessments that have been included in the ADA.

1.3 Risk Assessment Process, Application of the Framework and Outcomes

Representative comment(s):

Findings

The process of risk assessment is not transparent.

- The process of undertaking the risk assessment ratings is not transparent in the report so it is difficult to understand who was involved and how the process was undertaken. In addition, there is not enough detail in describing why the ratings were prescribed for 'perceived' or 'mitigated' impacts, as evidenced by the fact most (65%) of the identified impacts have no 'comments/assumptions' attached in the risk assessment table.
- In addition, it appears that the risk assessment process has not involved consultation with stakeholders as advised under good Social Impact Assessment practice.

Recommendation

As above – and include a description of how the process was undertaken and more clarity around any change in ratings. In addition, consult with stakeholders as part of the risk assessment process.

Findings

Final risk assessment scores are understated and not well-evidenced.

The social research undertaken to inform the risk assessment is rigorous and includes submissions (887 submissions) and consultation (285 stakeholders) from the original and amended EIS process. However, the risk assessment scores do not adequately or accurately represent the baseline operations, the lived experience of these social impacts, cumulative impacts from other nearby quarries, or the mitigation measures.

Recommendation

The risk assessment is redone using existing research, the accurate baseline, with particular attention paid to 'lived experiences' and cumulative impacts and greater transparency in the process of evaluation (the arguments underpinning the resulting risk and significance score).

A description of the risk assessment rating and process undertaken to evaluate the significance of potential social impacts is provided at Section 7.2 of the SIA.

In particular, Section 7.2 of the SIA notes that an important component of the SIA has been the integration of technical assessment outcomes with the risk ranking of a project factor or potential impact as identified by consulted stakeholders during engagement activities.

In summary the social risk assessment process for the current SIA, has therefore involved four main steps:

1. **Determining the consequence.** The risking approach adopted for this SIA requires the determination of the worst-case (but reasonable) consequence of a project factor. These consequences are assessed against impact-specific consequences and are categorised as ‘catastrophic’, ‘massive’, ‘major’, ‘moderate’, ‘minor’ or ‘minimal’ (Table 7.2 of the SIA reproduced below).

Magnitude Level	Meaning and examples
Transformational*/Catastrophic	Substantial change experienced in community wellbeing, livelihood, amenity, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	No noticeable change experienced by people in the locality.

2. **Determining the likelihood.** To understand the risks presented by a project factor, the magnitude of a consequence has been cross-referenced with the likelihood of it occurring. Table 7.3 of the SIA (reproduced below) presents the likelihood definitions that were used to assess the likelihood of social impact consequences associated with the Revised Martins Creek Quarry Project, categorised as ‘almost certain’, ‘likely’, ‘possible’, ‘unlikely’, or ‘rare’.

Likelihood Category	Definition
Almost certain	Common repeating occurrence, ongoing Will occur in most circumstances
Likely	Will probably occur in most circumstances There is at least a 50% chance that it may happen
Possible	Might occur at some time Could occur but not often 5% chance it could happen
Unlikely	Unusual occurrence Unexpected
Rare	May occur only in exceptional circumstances Unheard of in the industry

3. **Assessing the technical risk.** To assess the overall social risk, the consequence determined in step one are cross-referenced with the likelihood determined in step two to determine an overall risk assessment rating (i.e. *low*, *moderate*, *high*, or *extreme*) (refer to Table 7.1 in the SIA, reproduced below). Importantly in the case of some potential impacts, this risk assessment has involved reference to the relevant technical reports of the ADA (e.g. traffic, noise, blasting, air quality etc.), however the associated potential social impacts have been assessed through the social risking process. Importantly, the resulting social risk ratings represent the risk post implementation of mitigation measures, with mitigation measures also including relevant management based operational or technical approaches to each of the technical aspects that may reduce the likelihood of the potential social impact occurring.

		Consequence Level				
		1	2	3	4	5
		Minimal	Minor	Moderate	Major	Catastrophic
Likelihood category	A. Almost certain	HIGH	HIGH	EXTREME	EXTREME	EXTREME
	B. Likely	MODERATE	HIGH	HIGH	EXTREME	EXTREME
	C. Possible	LOW	MODERATE	HIGH	EXTREME	EXTREME
	D. Unlikely	LOW	LOW	MODERATE	HIGH	HIGH
	E. Rare	LOW	LOW	MODERATE	HIGH	HIGH

Source: NSW SIA Guidelines (DPE 2017)

- 4. Ranking the stakeholder identified risk.** An important component of the SIA has been the integration of technical results with the risk ranking of a project factor or potential impact as identified by consulted stakeholders i.e. the sensitivity/susceptibility/vulnerability of people to adverse changes caused by the potential impact and/or the importance placed on the relevant social matter. Consequently, stakeholder ratings of risk were determined by assessing potential impacts identified through SIA consultation activities – the resulting ranking (i.e. *low*, *moderate* and *high*) have been determined by the frequency that an issue was raised by a particular stakeholder group in the engagement process. This is why there are no ‘extreme’ rankings for perceived potential impacts. The justification for each stakeholder ranking is highlighted in the discussion within each respective impact section with reference to the discussion of perceived issues and potential impacts as presented at Section 6 of the SIA as appropriate. It should be noted that stakeholder perception rankings as identified during consultation are not ‘residual risk’ rankings as they do not reflect all the management measures that had put in place. This is particularly important in the context of this project in which changes to the proposed project have been ongoing with responses to potential impacts iteratively identified by the Daracon and Umwelt project team (many of which have been informed by engagement activities) throughout the assessment process.

Stakeholder views and perceptions regarding the significance of risk/impact is considered an independent and no less valid component of risk. It is often the case that stakeholder perceptions of a potential impact may be quite different to an independent assessor’s perception and can be driven by a range of individual factors including fears, aspirations, lack of information and/or knowledge or awareness of particular impacts (Sandman 1997). Stakeholder perceptions vary between individuals and groups – e.g. some social factors such as ‘amenity’ can be subjective in nature with individuals placing different values on potential impacts within these factors depending on their own personal circumstances with no single perception more important than another.

Stakeholder input into the risk assessment process is therefore reflected in the columns entitled: *Perceived Social Impact/ Sensitivity* of the risk matrix tables.

It is also important to note that while tables of the risk assessment outcomes have been provided throughout Section 7 and in combined summary format at Table 7.35, these should not be read in isolation as further justification, logic, evidence and assumptions used to complete the evaluation for each individual potential social impact has also been provided throughout the discussions under each identified potential impact in Section 7 with reference back to the discussion of perceived issues and potential impacts as presented at Section 6 as appropriate.

Finally, the resulting risk outcomes that are provided in Table 7.35 under the column - **Social Impact Ranking (Mitigated)** are residual potential impacts after consideration of the proposed responses to potential social impacts and identified mitigation and management measures.

Given the peer review commentary with regards to final risk assessment scores being understated, it is also important to note that the new 2021 revised SIA Guideline (which was available in draft form at the time this SIA was prepared) has significantly reduced the emphasis on high and extreme risks compared to the 2017 Guideline with 9 out of 25 risk rankings (36%) across the matrix being identified as high or very high. Despite this the 2017 SIA Guideline, which provides greater emphasis on high and extreme risks, with 16 out of 25 risk rankings (64%) across the matrix being identified as high or extreme, was applied to this SIA.

While it is recognised that the SIA Guideline requires the evaluation of significance of each potential negative social impact both with and without mitigation in place, it is explained within Section 7 of the SIA that as there had been numerous iterative changes in project parameters and design throughout the assessment and accompanying consultation process, the evaluation took into consideration identified mitigation measures, including project refinements.¹

Nevertheless, for completeness, the summary of potential project impacts from the SIA has been reproduced with an assessment of the approved operations, Original Project and Revised Project. As shown in **Table 1.2**, the resulting residual impacts assessed in the SIA do not change.

The SIA takes a risk assessment approach to the evaluation of the magnitude of social impacts. This approach requires each potential social impact to be assessed with regard to probability of occurrence and the consequence of occurrence. The approach is commonly used in risk assessment frameworks, such as under AS/NZS ISO 31000:2009 Risk Management and has the advantage of transparency.

The matrix itself is quite flawed and this can be seen from some examples.

As a consequence of these various flaws, we have undertaken an independent assessment of the potential social impacts identified in the SIA using the Social Risk Matrix in Figure 8.3 above and correctly applying the criteria in tables 7.2 and 7.3 of the SIA, noting the amendment of the definition of the criterion for minor magnitude level. We have assumed a consequence level of moderate as being acceptable without further mitigation.

The categorisation in Table 7.2 of the SIA can also be difficult to apply as the magnitude has three dimensions: magnitude of impact, size of affected group and duration of impact. An event that affects many people but that has a short duration could be categorised as either major or minor. This can be addressed by rewriting the criterion for minor as:

Mild deterioration/improvement, for a reasonably short time, or affecting a small number of people who are generally adaptable and not vulnerable.

¹ The 2017 SIA Guideline which requires that applicants should make clear how negative social impacts will be managed and in the first instance, applicants should consider measures to avoid the impact by amending the project design. If avoidance is not possible, measures to reduce the impact or to limit its influence.

The risk assessment process as applied in the SIA has been described above (refer to **Section 1.3**). As highlighted in the representative comment provided above, it is asserted in the peer review prepared for the DSC (Judith Stubbs and Associates, 2021) that the risk matrix that has been used in the evaluation of potential social risks is flawed and leads to illogical social outcomes. A number of specific examples of problems with the application of the matrix are subsequently provided regarding flaws in the matrix.

If an impact is posited that is almost certain to occur, such as amenity impacts due to noise from crusher operation in the quarry, but that has minimal consequence as the distance to the nearest receiver means noise will be imperceptible, then the matrix rates the impact as high even though it is of no consequence. Logically the matrix should denote such a risk as low.

As required within the 2017 NSW SIA Guideline (DPE, 2017), and as described above, the SIA has included an evaluation of the significance of each identified potential negative social impact. The social risk matrix that has been applied within the SIA (Umwelt, 2021) to determine this significance, and has been queried within this peer review, is reproduced again below.

		Consequence Level				
		1	2	3	4	5
		Minimal	Minor	Moderate	Major	Catastrophic
Likelihood category	A. Almost certain	HIGH	HIGH	EXTREME	EXTREME	EXTREME
	B. Likely	MODERATE	HIGH	HIGH	EXTREME	EXTREME
	C. Possible	LOW	MODERATE	HIGH	EXTREME	EXTREME
	D. Unlikely	LOW	LOW	MODERATE	HIGH	HIGH
	E. Rare	LOW	LOW	MODERATE	HIGH	HIGH

Source: NSW SIA Guidelines (DPE 2017)

It should be noted that the matrix that has been applied is the matrix included within the relevant SIA Guideline in use at the time of the assessment (provided at Figure 6 of the 2017 SIA Guideline and reproduced for transparency below):

Figure 6: Social risk matrix³⁶

			Consequence Level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Catastrophic
Likelihood Level	A	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5
Social Risk Rating							
	Low		Moderate		High		Extreme

A recommended alternative matrix is subsequently provided within the peer review to allow for an alternative assessment of the potential social impacts and a review of the adequacy of the mitigations (refer below).

		Consequence Level				
		1	2	3	4	5
		Minimal	Minor	Moderate	Major	Catastrophic
Likelihood Category	A. Almost Certain	Low	Moderate	High	Extreme	Extreme
	B. Likely	Low	Moderate	High	Extreme	Extreme
	C. Possible	Low	Low	Moderate	Extreme	Extreme
	D. Unlikely	Low	Low	Moderate	High	Extreme
	E. Rare	Low	Low	Low	High	Extreme

Figure 6.3: Social Risk Matrix

Source: ISA 2021

The peer review appears to question the policy guidance provided by the 2017 SIA Guideline and the SIA consultant's application of this. While it is acknowledged that:

- the alternative matrix put forward by Judith Stubbs and Associates is more consistent with (although not identical to) that which is included within the Technical Supplement of the latest 2021 SIA Guideline (refer below), and
- the social risk matrix from NSW SIA Guideline (DPE, 2017) provides greater emphasis on high and extreme risks, with 16 out of 25 risk rankings (64%) across the matrix being identified as high or extreme,

the SIA has applied the Guideline (and associated risk matrix) relevant at the time of this assessment.

Table 6 Social impact significance matrix

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very High	Very High
B	Likely	Low	Medium	High	High	Very High
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

With regards to the peer review comment regarding the definitions of criterion for *magnitude* and *likelihood*, traditionally, the technical risk assessment process has not been very amenable to the inclusion of potential social and health impacts with an absence of a set of socially adapted consequence and likelihood definitions.

The 2017 SIA Guideline requires that where possible, the consequence scale should be based on established measures and standards. Therefore, in the context of this SIA, definitions for consequence (magnitude) and likelihood were largely sourced from the Technical Supplement prepared to support then draft revised 2020 SIA Guideline which was available in draft at that time (refer to Tables 7.2 and Table 7.3 of the SIA).

It should be noted that the definition utilised to describe *minor* impacts within the SIA, is consistent with the current definition of *minor* that exists in the final 2021 SIA Guideline.

The assessment of social impacts at Section 7 of the SIA is flawed for two reasons. Firstly, the matrix used for the assessment of risk (the conjunction of likelihood and severity) is flawed.

Secondly, the matrix has been incorrectly applied. The author of the SIA appears to have confused an assessment of likelihood with the consequence level, noting that this may have been a result of an intuitive response on the part of the SIA author to the matrix overrating the consequences of minor impacts. Further confusion is likely to have arisen from the characterisation of impacts as social impacts rather than as potential social impacts, with the latter carrying a connotation of assessment rather than description. We will address two examples below, noting that these represent a flaw found in all analyses in the SIA.

In table 7.7 of the SIA, the residual impact of product haulage on Quarry near neighbours is shown as C3 high, that is a moderate impact that has a possible likelihood. The correct assessment should be as a moderate impact that is almost certain to occur, as it is difficult to envisage operation of the proposed quarry without haulage of the product. Using the SIA matrix, the rating should be A4, extreme, and so requiring further mitigation. In table 7.34 of the SIA, the residual impact of presence of operations on Heritage and Culture for Paterson residents is assessed as D2 low, that is a minor impact that is unlikely to occur. The correct assessment should be as a minor impact that is almost certain to occur, as it is difficult to envisage operation of the proposed quarry without the presence of operations. Using the SIA matrix, the rating should be A2, high, but acceptable and so not requiring further mitigation.

Judith Stubbs and Associates (2021) have asserted that the matrix has been incorrectly applied and there is confusion in the assessment of *likelihood* and *consequence*, with regards to the two examples that have been provided.

The matrix has been applied to the potential impact arising from the relevant project aspect in question, not the project activity itself. Using the examples provided in the peer review specifically as a means to demonstrate:

- In Table 7.7 of the SIA, the potential impact being considered is the social amenity and surroundings of quarry near neighbours as a result of truck volumes associated with product haulage. It is shown as C3 high, i.e. a *moderate* impact that has a *possible* likelihood. The potential impact for which likelihood is being assessed is social amenity, not the product haulage itself, which of course is certain to occur.

Using the risk assessment framework as described, it was considered that post the application of mitigation and management measures (including project design changes) that it was still *possible* that potential impacts on social amenity would occur with a moderate level of consequence. It is not being questioned whether or not product haulage is likely to occur.

- In Table 7.34 of the SIA, the potential impact being assessed is damage to historical heritage buildings and values due to the presence of operations. This is assessed as D2 low (i.e. *minor* impact that is *unlikely* to occur) as again the SIA is not questioning the presence of the operations or the operation of the quarry but potential impacts on heritage values and it is considered that post the implementation of relevant mitigation measures, the likelihood of the potential impact is low with a minor impact.

The assessment has been carried out as a residual risk assessment, as it is likely that many of the assessments in the SIA, such as dust impacts, are based on the implementation of appropriate controls such as watering of roads and screening of crushing plant. The SIA is not clear on this matter. A more rigorous analysis would consider the risk in the absence of controls and propose mitigation in the form of controls. The risk would then be assessed as a residual risk in the presence of controls.

While it is recognised that the SIA Guideline requires the evaluation of significance of each potential negative social impact both with and without mitigation in place, it is explained within Section 7 of the SIA that as there had been numerous iterative changes in project parameters and design throughout the assessment and accompanying consultation process as a mechanism to address identified potential impacts, including social impacts, the evaluation has taken into consideration identified mitigation measures, including project refinements.² The Revised Project could not operate without the recommended mitigation measures from relevant technical assessments in order to meet relevant standards and criteria in most instances. **Table 1.2** has been completed that assesses the approved operations, Original Project and Revised Project.

1.4 Risk Assessment Outcomes

Drawing on the material presented in the SIA it is our assertion that the risk assessment and evaluation of significance of social impacts are inadequate, with likelihood level and consequence level underestimated. From the submissions analysed and based on the amended project parameters and mitigations, a number of residual social risks should be more correctly rated as "Almost Certain" to occur, having a "Major" social impact that will result in an "Extreme or Very High-risk rating". We are of the opinion that the mitigations exhibited are inadequate and the residual negative social impacts, based on lived experiences, will be unacceptable to a significant cohort of the impacted population.

As discussed in Section 7 of the SIA, it is important to acknowledge that the ratings of both likelihood and consequence or magnitude – and therefore overall significance – typically have both subjective and objective components, as this depends on a combination of people's individual experiences and/or perceptions as well as the outcomes of technical evaluations. When discussing the draft outcomes of the

² The 2017 SIA Guideline requires that applicants should make clear how negative social impacts will be managed and in the first instance, applicants should consider measures to avoid the impact by amending the project design. If avoidance is not possible, measures to reduce the impact or to limit its influence.

SIA with community representatives at the Social CAFs there was a level of dissatisfaction and disagreement expressed with a number of the resulting risk significance levels due to differing opinions with the project team as to either the likelihood of the potential impact occurring and/or the consequence should it occur. These opposing views were confirmed in follow up communications from MCQAG (MCQAG letter to Umwelt dated 11 March 2021 that has been included within the SIA).

While “lived experiences” are relevant, it is important to note that in contrast to past operations, the Revised Project will involve additional mitigation measures and noise impacts will be monitored and regulated under any new approval.

Stakeholder perceptions have been identified separately in tables as perceived social impact/sensitivity and the resulting rankings have been determined largely by the frequency with which an issue was raised in engagement activities.

1.5 Tolerance of Residual Risk Rankings

The risk matrix takes an approach commonly used in risk assessment, such as under AS/NZS ISO 31000:2009 Risk Management. The underlying method is to articulate a threshold level of risk which is acceptable to the decision maker. For example in the matrix above, levels of risk include low, moderate, high and extreme. Such a table would typically be accompanied by a statement of risk tolerance. An example could be: the organisation will mitigate any risk with a rating of high or extreme so that the residual risk rating (the rating following the application of mitigations) is no more than moderate.

The SIA does not state a threshold for risk tolerance, but an examination of the various assessment tables in Section 7 of the SIA suggests that the SIA takes a risk of high to be acceptable, as many of the residual risk ratings (rating after mitigation) are high. On the face of it, this level of acceptance of risk appears to be unduly sanguine, and a mitigation to an impact of moderate might be more reasonable.

As noted in the SIA Guideline (DPE, 2017), strategies may differ in their effectiveness and/or ability to alleviate potential social impacts, with some residual social impacts remaining in the case of potential negative impacts. As outlined above, the SIA presents the mitigated or residual social impact ranking.

The SIA acknowledges that there is still a potential residual impact remaining post the implementation of identified mitigation measures with the mitigated social risk in relation to a number of identified potential impacts still high – for example - those associated with changes to existing amenity for quarry near neighbours and residents of, and visitors to, Paterson.

The SIA has intentionally not stated a threshold for risk tolerance as risk tolerance depends on subjective and personal judgments with the perception of what is acceptable vs unacceptable risk varying significantly from individual to individual, community to community. However, as required within the 2017 SIA Guideline, the SIA has also included lengthy discussion as to the extent to which identified mitigation measures in the form of identified project refinements are acceptable to those who are expected to be affected (refer to Appendix 7 of the SIA).

It is also intended that the proposed Social Impact Management Plan (SIMP) will allow for the ongoing monitoring and adaptive management of potential negative social impacts, and for enhancing potential positive impacts, to continuously evaluate whether the potential social impacts and opportunities identified within the SIA have occurred, i.e. are the potential impacts occurring in the way that was initially predicted? Has the project created any negative or positive impacts that were unanticipated during the assessment process?

As stated in the SIA Guideline, the SIA informs the decision-making process. The consent authority will consider the relative significance of the potential negative social impacts with the proposed mitigation, suitability of the proposed mitigation measures and monitoring and management framework. In making a decision on the whether the project is approved, and if so, the relevant approval conditions, the consent authority will consider the balance of residual potential negative social impacts when considered with potential positive social impacts along with all other environmental and economic considerations.

1.6 Proposed Mitigation and Management Strategies

Findings

Mitigation and management strategies do not appropriately target key risks and impacts, or community concerns.

- **Of the 15 proposed mitigation/management measures, only 3 directly address the operational features causing the key social impacts, and of these, the measures are presented as ‘reductions’ and ‘restrictions’ against the original DA not the approved legal operations. These do not adequately represent the ‘lived experiences’ of the local community or the suggestions on management and mitigation put forward repeatedly by the community – thereby further reinforcing already very low confidence levels in the company.**
- **Some of the mitigation/management measures are not specific or measurable – for example, “regular consultation with local bus companies”. In addition, several measures seem vague or impractical to implement – for example “investigation of use of radar variable message signs”, “reduced speed limits for quarry trucks through Paterson village” (pages iv-v)**
- **Most of the mitigation measures are a standard part of any SIA (e.g. Social Impact Management Plan) or part of normal operations for a project of this scale (e.g. Community Contributions Scheme, Community Engagement Strategy, Voluntary Planning Agreement).**

Recommendation

Mitigation and management strategies are reviewed as part of a revised SIA to provide more targeted measures that directly address the identified social impacts and reflect the views and ‘lived experiences’ of local community. The SIA must translate into the risk assessment and mitigation management strategies, and a no-development scenario must be established.

As highlighted in the preceding sections above, the 2017 NSW SIA Guideline states that applicants should make clear how potential negative social impacts will be managed, with a particular focus on those that are evaluated as significant. In the first instance, applicants should consider measures to avoid the potential impact by amending the project design. If avoidance is not possible, measures to reduce the potential impact (for example, change how the project is designed, constructed, operated or decommissioned) or to limit its influence. The resulting mitigation measures can be:

- performance based
- prescriptive
- management based

The Guideline suggests a range of factors that should be considered when developing mitigation measures, including the extent to which the mitigation measure is acceptable to those who are expected to be affected by the potential negative social impact.

As noted in the SIA Guideline (DPE, 2017), some potential impact strategies may differ in their effectiveness and/or ability to alleviate potential impacts, with some residual potential social impacts remaining. Furthermore, certain measures may collectively address a number of different potential negative social impacts and potentially enhance a number of potential positive impacts.

As identified at Section 3.5.1 of the SIA, Daracon have continued to complete further project feasibility investigations, detailed quarry design refinements and explored potential additional mitigation measures, taking into consideration the outcomes of engagement activities as they have been available. Refinements and mitigation measures have also been identified via a review of similar projects as outlined in Section 5.5.1 of the SIA.

As identified throughout Section 7 of the SIA, a number of mitigation and enhancement measures were proposed by the community during the engagement activities and were subsequently explored by the project team to address potential project impacts. Consequently, a number of further iterative refinements have been made to the project based on community feedback. Where community identified mechanisms have not been adopted, the reasons why this has not been possible has also been outlined as relevant in Section 7, with this elaboration on explanations already provided during various engagement activities, most notably the topic specific CAFs.

As discussed at Section 7.3.1.3 of the SIA, key community identified mitigation measures that had been identified during the review of submissions, historical engagement and engagement specific to this SIA included:

- an increase in the utilisation of rail as a means of transporting product, and / or
- for a bypass road to be constructed to remove the need for trucks to travel through Paterson.

With respect to rail, as discussed in the SIA, while Daracon has committed to increasing the amount of quarry product transported by rail, there are a number of factors that influence the ability to increase rail transport including the:

- availability of train paths during daylight hours
- amenity impacts on surrounding residents associated with loading and dispatching trains during the evening and night period

- lack of suitable rail unloading sites, with a potential site identified by Daracon for the Sydney Metropolitan site, but not for the Hunter Region market.

With regards to the community identified mitigation of a bypass road for Paterson, again as noted within the SIA, discussions with relevant government agencies have indicated that a bypass of Paterson had previously been proposed but was removed from DSC's planning documents in 2002 and is no longer supported. The former proposed route is now subject to other land uses and no longer available as a viable option and there is no other viable route for traffic associated with the quarry to bypass the village of Paterson.

Given that the majority of the identified Revised Project potential impacts on the community are intrinsically linked to the proposed movements of trucks, a key component of the approach to the minimisation of potential impacts has been the ongoing refinements of the project and its associated truck movements. As such, in order to reduce the extent to how the community potential impacts associated with the Revised Project will be felt by the community, peak truck movements have been restricted to 140 laden trucks per day (280 movements) for up to 50 days per year, otherwise 100 laden trucks per day (200 movements) with the hourly peak consisting of:

- 20 laden trucks per hour (40 movements), Monday to Friday between 7.00 am and 3.00 pm
- 15 laden trucks per hour (30 movements), Monday to Friday between 3.00 pm and 6.00 pm.

To continually allow for the monitoring and adaptive management of potential negative social impacts, and for enhancing potential positive impacts, the SIA has specifically included provision for a SIMP to continuously evaluate whether:

- Social impacts and opportunities identified within the SIA have occurred, i.e. are the impacts occurring in the way that was initially predicted? Has the project created any potential negative or positive impacts that were unanticipated during the assessment process?
- The proposed management/enhancement measures addressed potential social impacts in the way that was intended. Are they sufficient? Are further management measures required?

A key component of the SIMP will be the identification of appropriate monitoring, reporting and review mechanisms, including the purpose of monitoring and the parameters that will be monitored and how and when monitoring data will be collected.

While a high-level overview of a monitoring framework is provided within the SIA, it is intended that the proposed framework and associated indicators to allow for the measurement of its success would be further developed in consultation with Daracon, the DPIE, the CCC and other key stakeholders.

Table 1.2 Summary Comparison of Evaluation Results for Negative Social Impacts

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Presence of operation – product haulage	Way of Life Surroundings Access to and use of infrastructure, services and facilities Community Health and Well Being	Impacts on social amenity and surroundings due to truck volumes and disruptions	Martins Creek SSC Paterson SSC Vacy SSC Localities along the haulage route, i.e. Tocal SSC Woodville SSC Mindaribba SSC Paterson SSC Bolwarra SSC Bolwarra Heights SSC Duns Creek SSC Dungog LGA Maitland LGA	Year 1 - 2	Quarry near neighbours including Station St residents	Moderate (C2)	Extreme (A3)	Iterative changes and revisions to proposed project Capped number of truck movements Truck speed limits in built up areas Reduced hours of quarry operation No trucks through Paterson prior to 6.45am No product haulage on Saturdays or from 24 December until 7am 2 January/or whatever is first working day after New Year (unless required for declared emergencies) Revised Driver Code of Conduct Traffic Management Plan including provision for regular monitoring of driver behaviour Road maintenance contributions via VPA to improve and maintain existing road conditions and extent to which impacts may be felt Community Contributions Program designed to enhance amenity in the local community where possible Planning quarry activities around extra traffic days, e.g. community significant events Reduced truck movements between 3-6pm weekdays to avoid higher community traffic/ school pick up times	High	High (C3)
				Year 2 onwards	Quarry near neighbours including Station St residents	Moderate (C2)	Extreme (A3)	As above Construction of a new access road	High	Moderate (D3)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
				Year 1 - 2	Dungog Road residents proximal to new access road	Moderate (C2)	Extreme (A3)	Iterative changes and revisions to proposed project Capped number of truck movements Truck speed limits in built up areas Reduced hours of quarry operation No trucks through Paterson prior to 6.45am No product haulage on Saturdays or from 24 December until 7am 2 January / or whatever is first working day after New Year (unless required for declared emergencies) Revised Driver Code of Conduct Traffic Management Plan including provision for regular monitoring of driver behaviour Road maintenance contributions via VPA to improve and maintain existing road conditions and extent to which impacts may be felt Community Contributions Program designed to enhance amenity in the local community where possible Planning quarry activities around extra traffic days, e.g. community significant events Reduced truck movements between 3-6pm weekdays to avoid higher community traffic / school pick up times	High	High (C3)
				Year 2 onwards	Dungog Road residents proximal to new access road	Moderate (C2)	Extreme (A3)	As above	High	High (C3)
				Project life	Visitors / users/ residents of Paterson village Paterson businesses	Moderate (C2)	Extreme (A3)	As above No trucks through Paterson prior to 6.45 am Reduced truck movements between 3-6pm weekdays to avoid higher community traffic/ school pick up times Truck speed limits of 20-25 km/hr when travelling through the intersection of King and Duke Streets in Paterson Provision of Camera Monitoring Station at the King and Duke St Intersection to enable truck identification as required	High	High (B3)
				Project life	Residents along the proposed haul route to Melbourne Street, East Maitland	Low (C1)	Extreme (A3)	As above	High	High (C3)
				Project life	Other road users along the proposed haul route – Maitland & Dungog LGAs	Low (D1)	High (B3)	Road maintenance contributions via VPA to improve existing road conditions	Moderate	Moderate (C2)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
	Way of Life Surroundings Access to and use of infrastructure, services and facilities Community Health and Well Being	Impacts on social amenity and surroundings due damage to infrastructure from trucks	Martins Creek SSC Vacy SSC Tocal SSC Woodville SSC Mindaribba SSC Paterson SSC Bolwarra SSC Bolwarra Heights SSC Duns Creek SSC Dungog LGA Maitland LGA	Project life	Road users along the proposed haul route	Low (D1)	High (B3)	All loaded trucks entering and leaving the quarry will always be covered, except during loading and unloading. Road maintenance contributions via VPA to improve road condition Driver Code of Conduct requires reporting of road maintenance issues.	Moderate	Low (D2)
	Way of Life Surroundings Community Health and Well being	Impacts on social amenity and surroundings due trucks movements causing public safety risks (interactions with people and vehicles)	Paterson SSC	Project life	Visitors / users/ residents of Paterson village	Low (D2)	Extreme (C4)	Reduced truck movements between 3-6pm weekdays to avoid higher community traffic/ school pick up times No product haulage on Saturdays or from 24 December until 7am 2 January/or whatever is first working day after New Year (unless required for declared emergencies) Planning quarry activities around extra traffic days/ community events Truck speed limits of 20-25 km/hr when travelling through the intersection of King and Duke Streets in Paterson Reduced speed through Paterson village and other built up areas Provision of Camera Monitoring Station at the King and Duke St Intersection to enable truck identification as required. Regular consultation with local bus companies School visit program to encourage road safety awareness Reduced truck movements Investigation of the use of radar variable message signs Code of Conduct – driver training relating to buses	High	Moderate (D3)
			Haul route localities		Other road users, pedestrians, cyclists along the haul route	Low (D2))	Extreme (C4)		High	Moderate (D3)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
	Way of Life Surroundings Access to and use of infrastructure, services and facilities Community Health and Well Being	Impacts on social amenity and surroundings due cumulative impacts of trucks movements	Dungog LGA Maitland LGA	Project life	Local road and regional users on the Haul route	Low (D1)	Extreme (C4)	Removal of haul route 2 as primary haul route Maintaining regular communications with Hanson via its Daracon Community Liaison Officer with the equivalent role within Hanson to identify ongoing issues of community concern, possible cumulative issues and joint responses to these. Reduced truck movements between 3-6pm weekdays to avoid higher community traffic/ school pick up times No product haulage on Saturdays or from 24 December until 7am 2 January/or whatever is first working day after New Year (unless required for declared emergencies) Planning quarry activities around extra traffic days/ community events	Moderate	Low (C1)
Product haulage	Way of Life Surroundings Livelihood Community Health and Well Being	Impacts on social amenity and surroundings - truck noise	Vacy SSC Paterson SSC Paterson SSC Tocal SSC Woodville SSC Mindaribba SSC Bolwarra SSC Bolwarra Heights SSC Duns Creek SSC Dungog LGA Maitland LGA	Project life	Residents along the proposed primary haul route	Low (C1)	Extreme (B4)	Road maintenance contributions via VPA to improve road condition Reporting of any identified substantial road pavement irregularities Capped number of truck movements Truck speed limits in built up areas	High	High (C3)
				Project life	Visitors/users/residents of Paterson village Paterson businesses	Moderate (C2)	Extreme (B4)		High	High (C3)
				Year 1-2 of Project	Station St residents	Moderate (C2)	Extreme (B4)		High	High (B3)
					Dungog Road residents proximal to new access road	Moderate (C2)	Moderate (C2)		High	Moderate (C2)
				Year 2 onwards	Station St residents	Moderate (C2)	Extreme (B4)	Construction of a new access road	High	Low (E2)
					Dungog Road residents proximal to new access road	Moderate (C2)	Moderate (C2)		High	High (B3)
				Project life	Other residents immediately proximal to the quarry	Low (D2)	Extreme (B4)	Capped number of truck movements Reduced hours of operations Reduced truck speed limits in built up areas A Noise Management Plan to be prepared to detail the implementation of management and monitoring controls to be utilised to manage residual noise impacts associated with the Quarry operations.	High	Moderate (C2)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Onsite quarry operations	Way of Life Health and Well-being Surroundings Community	Impacts on social amenity from quarry noise, e.g. use of equipment, plant operations and train loading affecting social amenity	Martins Creek SSC Vacy SSC Dungog LGA	Project life	Residents proximal to the quarry	Moderate (C2)	Extreme (B4)	Reduced hours of operation No product haulage on Saturdays Real time noise monitoring, reporting and response protocol Noise attenuation, e.g. bund, walls, barriers Relocation of train loading facilities to the northern end of the East Pit by extending the rail spur Use of new smaller quieter trucks onsite Relocation of machinery and stockpiles Revised pit design Noise barrier	High	High (C3)
				Year 1-4 of Project	Residents within Station Street, Cory Street Grace Avenue and along Dungog Road	Moderate (C2)	Extreme (B4)	As above, but excluding the extension of rail spur and new access road	High	High (B3)
				Year 4 onwards	3 Station St residents (night time exceedances due to train loading)	Moderate (C2)	Extreme (B4)	Additional noise mitigation measures specific to these properties	High	High (C3)
				Year 4 onwards	Residents within Station Street, Cory Street, Grace Avenue and along Dungog Road	N/A	Extreme (B4)	Reduced hours of operation New access road and upgraded rail spur in place	High	Moderate (C2)
Onsite quarry operations - blasting	Way of Life Health and Well-being Surroundings Community	Social amenity impacts due to blasting noise and vibrations	Martins Creek SSC Vacy SSC Dungog LGA	Project life	Residents proximal to the quarry	Moderate (C2)	High (B3)	Reductions of operating hours Reduced blasting windows and frequency Updated Blast Management Plan Installation of additional permanent blast monitor Ongoing implementation of detailed blast design processes Independent monitoring of blasting activities and publishing of results Proactive noise management system	High	Moderate (C2)
					Wider Dungog LGA	Low (E1)	Low (E1)	As above	Low	Low (E1)
Product haulage	Way of Life Health and Well-being Surroundings Community	Social amenity impacts due to changes to air quality from truck movements	Martins Creek SSC Vacy SSC Localities along the haul route	Project life	Residents proximal to the quarry Residents along the haul route	Low (D1)	Moderate (C2)	As above New bitumen sealed quarry access road up to the wheel wash All trucks leaving the quarry will use wheel wash facility All loaded trucks entering and leaving the quarry will always be covered, except during loading and unloading	High	Low (D2)

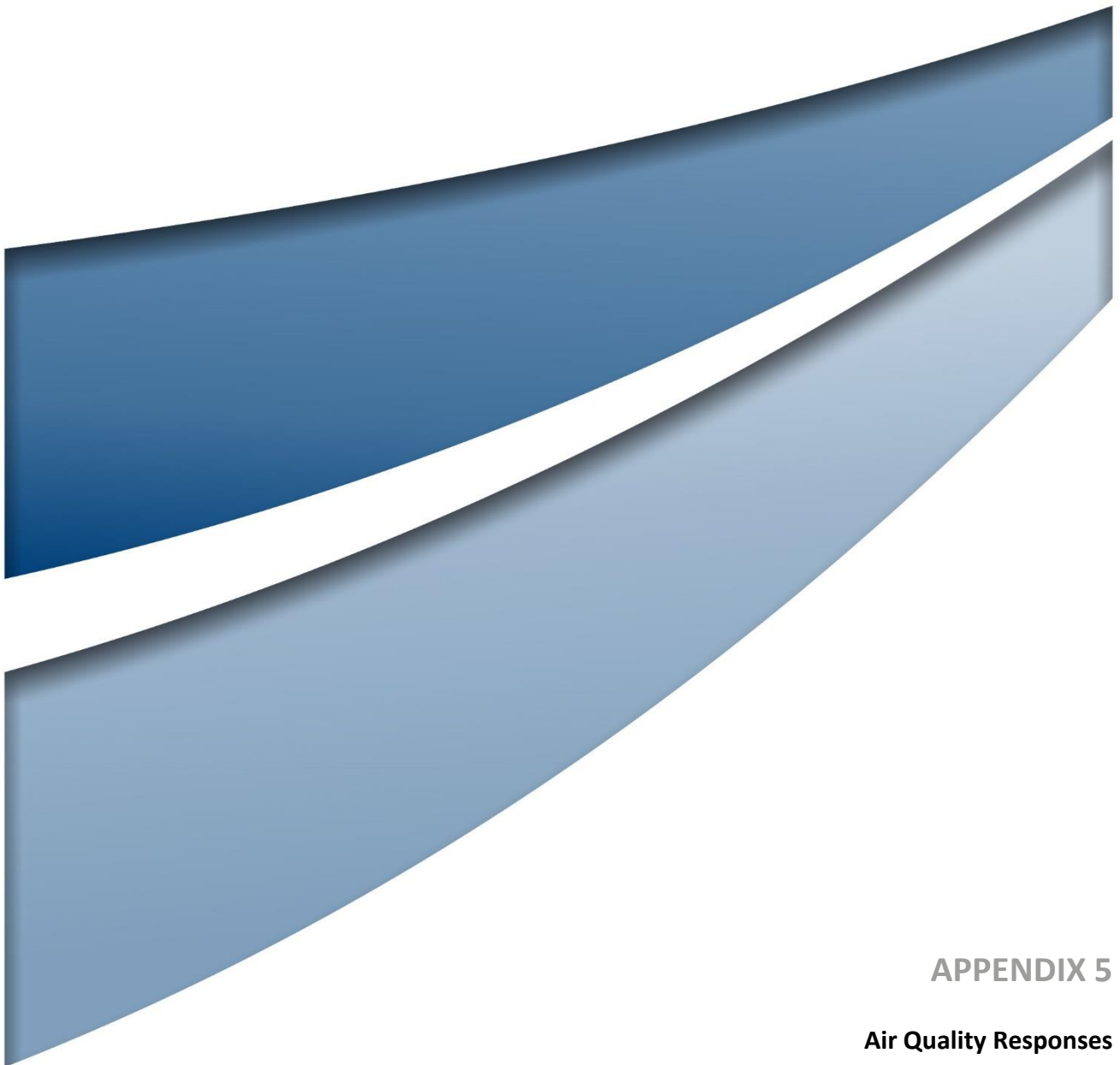
Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Onsite quarry operations (including blasting)	Way of Life Health and Well-being Surroundings Community	Social amenity impacts due to changes to air quality from onsite operational activities	Martins Creek SSC Vacy SSC Dungog LGA	Project life	Residents proximal to the quarry	Low (D2)	Moderate (C2)	As above. Reduced quarry operating hours Process that considers operational, geological and environmental constraints, with the design and size of each blast determined to meet these constraints and meet blasting criteria. Independent monitoring Use of blasting methods to minimise air overpressure and flyrock, e.g. not firing the blast if the wind speed is greater than 2m/s, smaller hole diameters, blasts maximum 5 to 6 rows deep and orientation of faces so not directly facing nearest residences and fire blasts away from potentially affected residences. Reductions of operating hours Reduced Quarry footprint Progressive rehabilitation activities Updates to existing onsite air quality management, e.g. enclosure of fixed plant, use of watersprays, covered truck loads Additional dust deposition gauge	High	Low (D2)
Presence of the quarry - construction of new access road	Way of Life Health and Well-being Surroundings Access to and use of infrastructure, services and facilities	Surroundings and social amenity – noise and dust	Martins Creek SSC Vacy SSC	1 year	Dungog Road residents proximal to new access road	N/A – access road proposed as part of Revised Project	N/A – access road proposed as part of Revised Project	Construction methodology Construction hours Keeping people informed	Low	High (B2)
Presence of the operation – product haulage	Way of Life Health and Well-being Surroundings Livelihood	Sense of community – Cohesion, character, sense of place, rural lifestyle due to truck movements / product haulage	Paterson SSC	Project life	Residents / businesses of Paterson village	Low (C1)	High (B3)	Reductions in truck movement and quarry operating hours Community sponsorship program to focus on community and amenity enhancement projects Community Engagement Strategy Monitoring and evaluating the success of mitigation measures via a SIMP No product haulage on Saturdays and further reductions I truck movements between 3 and 6pm on weekdays Community monitoring diary	High	High (C3)
Presence of the operation – product haulage	Way of Life Health and Well-being Surroundings Livelihood	Sense of community – Cohesion, character, sense of place, rural lifestyle due to truck movements/ product haulage	Martins Creek SSC Localities / communities along the haul route	Project life	Proximal quarry neighbours Localities/communities along the haul route	Low (C1)	High (B3)	As above	High	High (C3)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Presence of the operation – onsite quarrying activities	Way of Life Health and Well-being Surroundings	Sense of community – Cohesion, character, sense of place, rural lifestyle	Martins Creek SSC Vacy SSC	Project life	Proximal Quarry neighbours	Low (C1)	High (B3)	As above	High	High (C3)
Presence of the quarry	Way of Life Health and Well -being Livelihood	Presence of the quarry and its activities creating increased levels of stress and anxiety	Paterson SSC Martins Creek SSC Vacy SSC	Project life (possibility for decline over time for some)	Paterson residents and businesses Residents proximal to the Quarry	Low (D1)	Extreme (B4)	As above re reduced quarry operating hours and truck movements Community Engagement Strategy	High	High (B3)
			Localities along the haul route	Project life (possibility for decline over time for some)	Residents along the haul route	Low (C1)	High (C3)	Establishing regular ongoing community engagement in relation to impact monitoring and management activities Improved information provision and community involvement, e.g. monitoring outcomes	High	High (C3)
			Broader Dungog / Maitland LGAs	Early Project stages	Broader community	Low (C1)	Low (C1)	Establishment of a Community Consultative Committee Designated community liaison officer – open door policy Access to the local community to Daracon's EAP service	Low	Low (C1)
Presence of the quarry	Way of Life Health and Well-being Surroundings	Impacts on health and well-being - exposure to emissions from truck movements/ traffic	Martins Creek SSC Paterson SSC Localities along the haul route	Project Life	Residents proximal to the Quarry Residents / businesses along the haul route	Low (C1)	Moderate (D3)	Reductions of operating hours Reduced Quarry footprint Progressive rehabilitation activities	Moderate	Low (D2)
	Way of Life Health and Well-being Surroundings	Impacts on health and well-being - exposure to emissions to air due from quarrying activities	Martins Creek SSC Vacy SSC	Project life	Residents proximal to the Quarry Quarry employees and contractors	Low (C1)	Moderate (D3)	Updates to existing onsite air quality management, e.g. enclosure of fixed plant, use of watersprays, covered truck loads Additional dust deposition gauge Proactive air quality management	Moderate	Low (D2)
			Workforce			Low(C1)	Moderate (D3)	Onsite Work Health and Safety measures in place at Quarry for employees	Moderate	Moderate (D3)
Presence of the quarry	Way of Life Personal and property rights	Declining property values due to Quarry operations and ongoing presence of trucks	Martins Creek SSC Vacy SSC	Project Life	Property owners proximal to the Quarry	Moderate (C2)	High (C3)	Reductions of operating hours Extensive noise, air quality and blast controls Reduced truck movements Ongoing monitoring of concerns regards to this issue via the Community Engagement Strategy Ongoing monitoring of property values via the SIMP	High	Moderate (C2)
			Localities along the haul route	Project Life	Property owners along the haul route	Moderate (C2)	High (C3)		High	Moderate (C2)
			Dungog LGA Maitland LGA	Project Life	Broader regional LGA	Low (D1)	Low (D1)		Low	Low (D1)

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Presence of the quarry	Way of Life Personal and property rights	Property damage due to blasting	Martins Creek SSC Vacy SSC	Project life	Property owners proximal to quarry	Low (D2)	Moderate (D3)	Property inspections Reduced blasting window Independent monitoring will be conducted 3 times in the first year, every 5 years thereafter. Implementation of Blast Management Plan On written request, property inspections of any privately-owned land within 500 metres of an approved extraction area to establish the baseline condition of any buildings and structures or to have a previous property inspection updated in response to a written request from the owner.	High	Low (D2)
		Property damage due to truck movements	Haulage route	Project life	Road users along the haulage route	Low (D1)	High (C3)	Reduced truck movements and travel speeds All loaded trucks entering and leaving the quarry will always be covered, except during loading and unloading. Road maintenance contributions via VPA	High	Low (D2)
Presence of the quarry	Way of Life Personal and property rights	Economic livelihood – impacts on local businesses	Paterson SSC	Project life	Paterson businesses	Low (D1)	Extreme (B4)	Reduced quarry operations and truck movements No product haulage on Saturdays Reduced truck movements between 3-6pm weekdays Speed limit reductions in built up areas Local investment in key community enhancement projects that support local business, tourism	High	Moderate (D3)
			Haulage route	Project life	Businesses along the haul route	Low (D1)	High (C3)		Moderate	Low (D2)
Presence of the quarry	Way of Life Personal and property rights	Economic livelihood and employment opportunities	Dungog, Maitland Port Stephens LGAs	Project life	Local/regional residents	Moderate + (C2)	Low+ (C1)	Local employment and procurement policy to enable supporting businesses and recruiting locally where possible	Low (positive)	Moderate + (C2)
					Local business / suppliers	Moderate + (C2)	Low + (C1)		Low (positive)	Moderate +(C2)
			Lower Hunter region	Project life	Regional business/suppliers/ Employees	High+ (B3)	Moderate + (C2)		Moderate (positive)	High +(B3)
		Delivery of key materials to infrastructure Projects	Broader Hunter region NSW	Project life	Regional and NSW construction industry	Low+ (D2)	High+ (B3)		Moderate (positive)	High+(B3)
Project assessment process	Decision- making systems	Engagement, communication and information provision Distrust of Daracon and processes	Martins Creek SSC Paterson SSC Vacy SSC Localities along the haul route	Project life	Proximal residents/ community members to the Quarry and haul route	Low (D2)	High (B3)	Engagement of new consultants for ADA process Revised reports and assessment documentation Establishment of new CCC Ongoing employment of a dedicated Community Liaison Officer Improved accessibility and delivery information provision such as monitoring outcomes Trialling of a Community Impact Monitoring Diary Community engagement plan and implementing	High	High (B2)
			Broader Dungog and Maitland LGA communities	Project life	Broader Dungog and Maitland LGA communities	N/A – uncertainties in confirming levels of trust in quarry operators at this time	Moderate (C2)	As above	Moderate	Moderate (C2)

Table 1.2 - SummaryOfProjectImpactsTable_RtS Phase_FINAL

Impact Description						Approved Operations (as per Court Proceeding outcomes)	Original Project (2016 EIS)	Revised Project - ADA		
Project Aspect	Relevant Social Impact Category	Social Impact	Extent	Duration	Affected Parties			Key Mitigation Measures	Perceived Social Impact/ Sensitivity (Revised Project)	Revised Project Social Impact Ranking (Mitigated)
Presence of the operation	Surroundings	Ecological impacts – biodiversity and land management	Martins Creek SSC	Project life	Residents proximal to the Quarry	Low (D2)	High (B2)	Reduction in Quarry footprint / reduced disturbance area	High	Low (D2)
					Wider Dungog and Maitland LGAs	Low (D2)	High (B2)	Flora and Fauna Management Plan Biodiversity and Offset Management Plan Rehabilitation Management Plan Staged clearing Progressive rehabilitation	High	Low (D2)
Presence of operations	Surroundings Way of life Water – surface and ground	Water - Access to surface and ground water	Martins Creek SSC Broader Dungog LGA	Project life	Residents proximal to the Quarry Paterson River visitors and users Bore users	Low (D2)	Moderate (C2)	Revised Water Management Plan	Low	Low (E2)
Presence of operations	Culture Community Surroundings	Damage to historical heritage buildings and values	Paterson SSC	Project life	Paterson residents, users and businesses	Low (D1)	Moderate (C2)	Reduced quarrying operations Contribution to road maintenance costs via the VPA Reporting of substantial road pavement irregularities Community Contributions and Sponsorship program	High	Low (D2)
Presence of operations	Culture Community Surroundings	Aboriginal cultural heritage and values	Martins Creek SSC	Project life	Aboriginal stakeholders	Low(D1)	Low (D2)	Implementation of a Cultural Heritage Management Plan	Low	Low (D2)



APPENDIX 5

Air Quality Responses

17 November 2021

Attention: Kirsty Davies
Umwelt (Australia) Pty Ltd
75 York Street Teralba NSW 2284

Project Name: Martins Creek Quarry Extension Project
Project Number: IA167900

Dear Kirsty

Air Quality Information for EPA Advice and Public Queries on Submissions Report

Thank you for providing a copy of the EPA's advice and public queries on the submissions report which includes information relating to air quality. The EPA document, dated 2 July 2021, has been reviewed and attached is information to address the relevant requests and queries. Additional queries from members of the Martins Creek Quarry Action Group (MCQAG) have also been considered.

Reference is made to the following documents:

- "Martins Creek Quarry Extension Project – Air Quality Impact Assessment". Report prepared by Jacobs Group (Australia) Pty Ltd for Buttai Gravel Pty Ltd. Final, Revision 1, dated 17 November 2020. Hereafter referred to as the "AQIA".
- "EPA Advice on Submissions Report – Martins Creek Quarry Extension Project (SSD-6612)". EPA letter to the Department of Planning, Industry and Environment". Dated 2 July 2021. Hereafter referred to as the "EPA Advice".

Yours sincerely

Shane Lakmaker
Principal (Air Quality)

1. Requested Information (EPA)

Further mitigation measures and controls are required to reduce predicted large increments

Modelling results exhibited in the AQIA show that large daily and annual increments (project-only) are predicted due to the proposal. For instance, based on Table 1 below, maximum predicted concentrations can be up to 100 % of the EPA's impact assessment criteria.

Table 1: Summary of the maximum predicted concentrations due to the proposal.

			PM ₁₀ 50	PM _{2.5} 25
Criteria	predicted	24-hr		
Maximum increment (Percentage of the EPA's criterion)			50 (100 %)	8.1 (32 %)
Criteria	predicted	Annual	25	8
Maximum increment (Percentage of the EPA's criterion)			19.1 (76 %)	3.1 (39 %)

These results are based on an annual throughput and a revised worst-case modelling scenario based on maximum daily material handling (including the proposed maximum truck movements) is likely to result in higher project-related increments.

In light of the above and considering the proximity to the most impacted receptors, a detailed review of best practice dust control measures is necessary to demonstrate that the proponent has evaluated and/or committed to all reasonable and feasible mitigation measures to prevent and minimise air pollution. Emphasis should be given to the largest emissions sources and the sources that contribute to the predicted incremental ground level concentrations.

Information Required

3. The proposed mitigation and management measures are benchmarked against best practice.
4. The AQIA takes incorporates all reasonable and feasible best practice mitigation and management measures. Justification must be provided for any identified best practice mitigation measures that are not proposed for implementation.
5. Consider project alternatives and/or further mitigation measures to manage any predicted significant incremental or cumulative impacts resulting from any revisions to the AQIA.
6. Any revised predicts significant incremental/cumulative impacts the proponent must consider project alternatives and/or further mitigation measures to manage those predicted impacts

It is relevant to consider the historical air quality performance of the previous operations at the quarry as well as the proposed changes to operations when determining an appropriate level of mitigation and management.

Monitoring of particulate matter (as PM₁₀) has been carried out at the Station Street monitor since at least 2013. This monitor is located within 200 m of the quarry operations (Figure 4 of the AQIA). The monitor is suitably located to capture the near maximum air quality impacts to off-site and residential locations from previous quarry operations (noting that this production was beyond the terms of the 1991 consent).

Figure 6 from the AQIA presented the measured PM₁₀ concentrations from the Station Street monitor. This data did not highlight any occasions when activities at the existing quarry caused adverse off-site air quality impacts with respect to PM₁₀ based on measured concentrations which did not exceed the relevant EPA criteria. In summary the data (from when the quarry was

operating at its previous production) showed that between 2013 and 2020 and not including extraordinary events:

- Maximum 24-hour average PM₁₀ concentrations (including contributions from previous operations) were 38 µg/m³. This is well below the EPA's criterion of 50 µg/m³ and below the investigation level that is referred to in EPL 1378; 40 µg/m³.
- Annual average PM₁₀ concentrations in the representative year (including contributions from previous operations) were 13 µg/m³. This is well below the EPA's criterion of 25 µg/m³.

The Revised Project proposes an extraction limit of 1.1 million tonnes per annum (Mtpa). This would represent an increase in activity over previous operations of approximately 20 percent (i.e. 1.1 Mtpa vs 900 ktpa). The change in production may influence emissions from various site activities including haulage, crushing and processing. Buttai Gravel Pty Ltd (Buttai Gravel) has therefore reviewed and identified a range of site mitigation and management measures to be commensurate with the historical air quality performance of the quarry and the proposed change in activity relative to previous operations. These measures include:

- Drilling. Water sprays. Minimising activities when excessive visible dust is generated.
- Hauling on unsealed roads. Use of water carts for haul road dust suppression. Restricting vehicular speed within the quarry and processing areas. Clearly marked internal haul roads. Minimised haul distances. Road maintenance.
- Processing plant. Enclosure of the primary, secondary and tertiary crushers and screening plant in the processing area.
- Fixed crushing plant. Automated water sprays.
- Under-belt stockpiles. Automated water sprays.
- Mobile crushing. No mobile crushing in west pit.
- Transport of product off-site. Covered loads. Wheel wash before leaving site.

There are no known publications that define best practice mitigation and management measures which are specific to the quarry industry in NSW. A review of literature related to a range of extractive industries including quarrying has therefore been carried out. Two relevant references have been identified:

- Katestone, on behalf of the EPA, conducted an extensive review of best practice measures for minimising particulate matter emissions from coal mining, as outlined in *"NSW Coal Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining"* (Katestone, 2011). The best practice measures from Katestone (2011) would be beyond those typically expected for the Revised Project given that they consider operations that were producing in the order of 10 Mtpa or more of saleable product.
- Lynwood Quarry is a hard rock quarry currently being constructed by Holcim (Australia) Pty Ltd (Holcim) to the west of Marulan in the Southern Tablelands Region of New South Wales (NSW). It has approval to produce up to 5 Mtpa of saleable quarry product, much larger than that proposed for the Revised Project (which is 1.1 Mtpa).

The mitigation and management measures identified by Katestone (2011) representing best practice for NSW coal mines and Holcim (2020) representing measures at a large quarry are

shown in Table 1. These measures have considered and, where appropriate, adopted as mitigation and management measures for the Revised Project.

Table 1 Particulate matter emission management measures

Activity	Measures identified by Katestone (2011) and Lynwood Quarry (Holcim, 2020)	Emission management measures for Revised Project	Assumed emission control (%)*	Comments on consistency with best practice at coal mines or other large quarry
Drilling	Katestone (2011): Water injection / sprays Fabric filter Cyclone Holcim (2020): Water sprays or dry dust collection	Water sprays. Minimising activities when excessive visible dust is generated.	70	Katestone (2011): Water sprays are consistent with best practice at NSW coal mines. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Blasting	Katestone (2011): Delay shot to avoid unfavourable weather conditions Minimising the area blasted Holcim (2020): Adequate stemming in blast holes Review conditions prior to blasting	Pre-blast checks including review of meteorological conditions and delaying shot in unfavourable weather conditions. Adequate stemming.	0	Katestone (2011): Pre-blast checks and review are consistent with best practice on NSW coal mines. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Hauling on unsealed roads	Katestone (2011): Watering or suppressants Speed limits to 40 km/h Well-defined haul routes Minimising haul distance Grading Use of larger trucks Holcim (2020): Water haul roads Keeping haul roads lengths to a minimum	Watering of unsealed haul routes Restricting vehicle speeds as per traffic management plan Clearly marked haul routes Minimised haul distances Road maintenance	75	Katestone (2011): The measures proposed are consistent with best practice on NSW coal mines. 75% control is a conservative estimate based on measurement results from NSW coal mines where 85% control or more is regularly achieved. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Primary and secondary crushing	Katestone (2011): Closest comparable activity is handling coal at the ROM pad / CHPP. Control measures for this process are not specifically identified. Holcim (2020): Dust extraction system (note, Annual Review indicates that this system currently not considered to be effective)	Enclosure Water sprays Belt scrapers	90	Katestone (2011): Not applicable Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.

Activity	Measures identified by Katestone (2011) and Lynwood Quarry (Holcim, 2020)	Emission management measures for Revised Project	Assumed emission control (%)*	Comments on consistency with best practice at coal mines or other large quarry
	Dust suppression sprays Enclosure of majority of plant			
Screening	Katestone (2011): Closest comparable activity is handling coal at the ROM pad / CHPP. Control measures for this process are not specifically identified. Holcim (2020): Dust extraction system Dust suppression sprays Enclosure of majority of plant	Enclosure	70	Katestone (2011): Not applicable Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Loading product stockpiles	Katestone (2011): Bypass coal stockpiles Variable height stack Boom tip water sprays Telescopic chute with water sprays Holcim (2020): Water sprays on stockpiles	Water sprays as required	70	Katestone (2011): Water sprays are consistent with best practice on NSW coal mines. Other measures are not applicable to quarrying. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.
Wind erosion from product stockpiles	Katestone (2011): Bypass coal stockpiles Water sprays, Chemical wetting agents, Surface crusting agent Carry over wetting from load in Silo with bag house Cover storage pile with a tarp during high winds Vegetative wind breaks Reduced pile height, pile shaping Wind screens 3-sided enclosure Holcim (2020): Water sprays on stockpiles	Water sprays as required	50	Katestone (2011): Water sprays are consistent with best practice on NSW coal mines. Holcim (2020): Revised Project incorporates approved practices at other, larger quarry.

* NPI (2012), Katestone (2011)

The comparison in Table 1 shows that the proposed measures are consistent with best practice dust mitigation measures for NSW coal mines as well as those adopted at an approved, large NSW quarry.

Haulage of rock from the quarry pit to the processing plant has been identified as the largest potential emission source from the operation (Table 13 from the AQIA). Katestone (2011) also identifies wheel generated dust as the major source at NSW coal mines. The proposed measures

for haulage (Table 1) are consistent with best practice on NSW coal mines. In addition, for all key activities at the quarry, there is at least one mitigation or management measure that is consistent with best practices on NSW coal mines as well as those adopted and approved at a much larger NSW hard rock quarry.

Information to address items 5 and 6 from the EPA Advice is provided below.

The methodology adopted for assessing cumulative impacts has not been conducted in accordance with the Approved Methods for the Assessment and Modelling of Air Pollution in NSW

The AQIA states that a Level 1 assessment has been undertaken for assessing potential cumulative impacts. A Level 1 assessment requires that the maximum background concentration of the pollutant being assessed is added to the maximum 100th percentile dispersion model prediction to obtain the total impact for each averaging period.

Section 8 of the AQIA briefly discusses the methodology adopted for assessing cumulative impacts, however, is limited on information describing the method in detail. The EPA assumes that maximum PM₁₀ (24 hour) background levels are captured with the ambient air monitoring data recorded at the 'Station Street Monitor'. This monitor is a high-volume air sampler (HVAS) that records PM₁₀ concentrations. The HVAS is a non-continuous monitoring instrument that only collects 24-hour averaged PM₁₀ data every 6 days. The HVAS data collection cycle only covers approximately 17 % of the days within a year. A cumulative assessment method based on 1 monitoring location, conducted on a limited cycle, is not robust for adequately assessing potential worst-case cumulative impacts.

The maximum 100th percentile dispersion model prediction at each receptor is not used to estimate cumulative impacts as required for a Level 1 assessment. Instead, the predicted incremental change (i.e. difference between maximum predicted impacts from operations in 2015 and proposed operations) is used to estimate cumulative impacts. This approach is not consistent with a Level 1 assessment method and is not consistent with the cumulative assessment methods contained in Approved Methods for Modelling and Assessment of Air Pollutants in NSW.

The EPA cannot interpret the potential for exceedances of the EPA's cumulative impact assessment criteria. However, given the predicted significant project increments, it is likely that cumulative exceedances of the impact assessment criteria would be predicted.

Information Required

7. Provide a detailed cumulative impact assessment as per the Approved Methods.

The increment of the Project is consistent with the information in the *"Approved Methods for the Modelling and Assessment of Air Pollutants in NSW"* (Approved Methods) (EPA, 2016) based on:

- Section 7.1.2 of the Approved Methods which refers to an incremental impact.
- Section 11.2.3 of the Approved Methods which provides an example of a Level 1 assessment and notes that "24-hour average and annual increments of PM₁₀ have been predicted at each sensitive receptor".
- Monitoring that was occurring when the quarry was operating.

Consideration of the incremental impact of a project is important if the project represents a modification of an existing, or previous contributor, to the local air quality. Assessing the incremental impact avoids the potential for double-counting. Adding maximum background concentrations (which include contributions from the source being modelled) to maximum model results from the same source (as modified) is not appropriate because this would result in the double-counting of quarry contributions to air quality.

It is appropriate to consider, and use modelling to determine, the potential incremental change in air quality due to the proposed operational change relative to that which has historically occurred and is reflected in historical monitoring data from the site. This is because the previous operations are likely to have contributed to the local air quality environment. Further analysis of monitoring data has been carried out to confirm that the previous quarry operations would have contributed to the PM₁₀ measurements at the Station Street monitor.

It is acknowledged that a high volume air sampler (HVAS) collects 24-hour average concentrations every 6 days and that other monitoring methods are available to collect more continuous records. However, this method of monitoring is approved under the EPA's *"Approved Methods for the Sampling and Analysis of Air Pollutants in NSW"* (DEC, 2007) and should therefore be acceptable for the purposes of impact assessment. Specifically, DEC (2007) refers to:

- AM-18. Particulate matter – PM₁₀ – high volume sampler with size-selective inlet. AS 3580.9.6-1990.

As shown in Figure 4 of the AQIA (Jacobs, 2020) the monitoring of particulate matter (as PM₁₀) is carried out on Station Street. This monitor is located between 50 and 200 m of the properties along Station Street and within 200 m of the quarry operations. The monitor is suitably located to capture the near maximum air quality impacts to off-site and residential locations from previous quarry operations.

Figure 1 shows the annual wind-rose based on wind speed and wind direction data collected from the Station Street meteorological station in the identified representative year, 2015. Based on the position of the HVAS relative to the quarry, this wind-rose shows that winds from the direction of the quarry towards the HVAS (i.e. NNW, N, NNE, NE and ENE) occurred for approximately 18 percent of the time. This means that the HVAS monitor would have captured any contributions that the quarry (operating at the time) may have made to off-site PM₁₀ concentrations at the nearest residential properties.

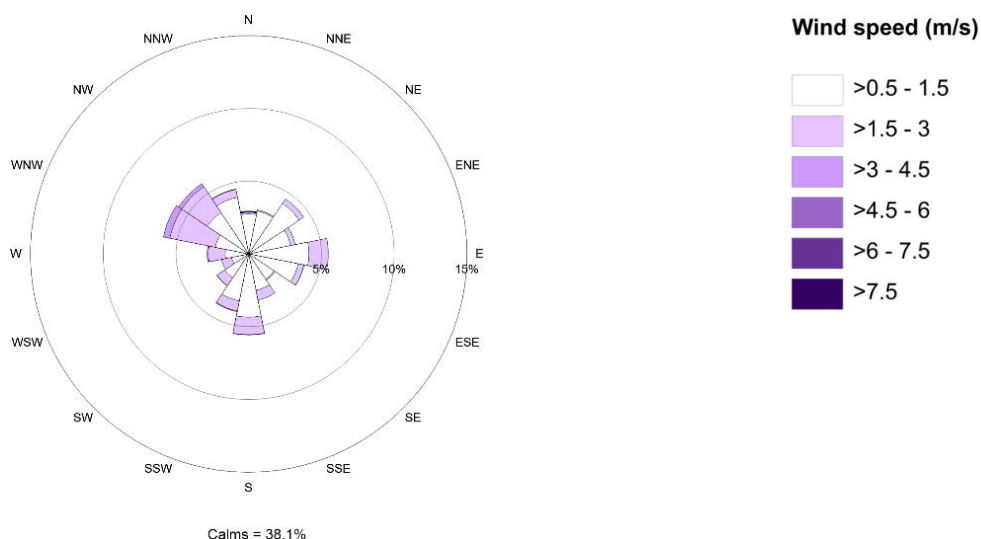


Figure 1 Wind-rose from data collected in 2015 at the Station Street meteorological station

Figure 6 from the AQIA presented the measured PM₁₀ concentrations from the Station Street monitor. This data did not highlight any occasions when activities at the existing quarry caused adverse off-site air quality impacts with respect to PM₁₀ based on measured concentrations which did not exceed the relevant EPA criteria. In summary the data (from when the quarry was operating at its previous production) showed that between 2013 and 2020 and not including extraordinary events:

- Maximum 24-hour average PM₁₀ concentrations (including contributions from previous operations) were 38 µg/m³. This is well below the EPA's criterion of 50 µg/m³ and below the investigation level that is referred to in EPL 1378; 40 µg/m³.
- Annual average PM₁₀ concentrations in the representative year (including contributions from previous operations) were 13 µg/m³. This is well below the EPA's criterion of 25 µg/m³.

Table 2 reproduces the PM₁₀ model results from the AQIA with the information more closely aligned to the presentation in the Approved Methods. Specifically the Revised Project 24-hour average and annual increments of PM₁₀, relative to previous operations, have been added to the monitored levels during previous operations to determine the maximum impact at each sensitive receptor. In some cases the Review Project increment decreases relative to the historical 900ktpa operation. This decrease is primarily due to the reduced use of mobile crushing arrangements as well as the progression of the active quarry pit further away from the Station Street properties. This approach enables a relative assessment of impacts to historically measured levels.

The modelling shows that the maximum impacts at each receptor are unlikely to exceed the 24-hour or annual average impact assessment criteria. Therefore no further assessment of specific mitigation measures at individual properties is required.

Potential decreases in concentrations at nearby properties in earlier years are due to the additional controls proposed for implementation as well as quarry operations that would move progressively to the west. Potential increases in concentrations at nearby properties in later years are due to changes in the location of extraction and the extraction activities are in the East Pit, with the fixed processing plant decommissioned and replaced with mobile plant during this final phase.

Table 2 Modelled PM₁₀ concentrations at the nearest private sensitive receptors

ID	Monitored level near the quarry during previous operations	Revised Project increment relative to previous operations			Cumulative			Criteria
		Year 2	Year 10	Year 20	Year 2	Year 10	Year 20	
Maximum 24-hour average PM ₁₀ (µg/m ³)								
R1	34	-5.9	-8.5	11.0	28	25	45	50
R5	34	-3.2	-3.9	6.0	31	30	40	50
R10	34	-2.1	-2.9	4.2	32	31	38	50
R12	34	-3.1	-4.4	6.8	31	30	41	50
R16	34	-1.9	-1.9	1.9	32	32	36	50
R25	34	-4.4	-3.3	-0.3	30	31	34	50
R31	34	-1.4	0.4	2.2	33	34	36	50

ID	Monitored level near the quarry during previous operations	Revised Project increment relative to previous operations			Cumulative			Criteria
		Year 2	Year 10	Year 20	Year 2	Year 10	Year 20	
R32	34	0.6	0.0	5.2	35	34	39	50
R34	34	-0.1	0.3	3.3	34	34	37	50
R46	34	-1.5	-0.1	2.0	33	34	36	50
R48	34	-3.8	-4.6	3.0	30	29	37	50
R60	34	0.6	0.3	1.7	35	34	36	50
R63	34	-2.7	-0.7	1.4	31	33	35	50
R67	34	0.1	0.1	1.2	34	34	35	50
R68	34	0.2	0.3	1.9	34	34	36	50
R74	34	0.2	-0.1	1.0	34	34	35	50
Annual average PM ₁₀ (µg/m ³)								
R1	13	-1.9	-2.2	4.7	11	11	18	25
R5	13	-1.2	-1.3	2.6	12	12	16	25
R10	13	-0.8	-0.8	1.6	12	12	15	25
R12	13	-1.2	-1.3	1.9	12	12	15	25
R16	13	-1.0	-0.6	0.8	12	12	14	25
R25	13	-1.3	-0.7	0.2	12	12	13	25
R31	13	-1.0	-0.5	0.1	12	12	13	25
R32	13	-0.1	-0.2	0.7	13	13	14	25
R34	13	-1.6	-0.8	-0.1	11	12	13	25
R46	13	-0.3	0.0	0.4	13	13	13	25
R48	13	-0.5	-0.5	0.8	13	12	14	25
R60	13	0.0	0.1	0.3	13	13	13	25
R63	13	-0.3	-0.1	0.3	13	13	13	25
R67	13	0.0	0.0	0.1	13	13	13	25
R68	13	0.0	0.1	0.3	13	13	13	25
R74	13	0.0	0.0	0.1	13	13	13	25

The AQIA does not demonstrate that a reasonable worst-case scenario has been assessed

The estimated emissions from truck movements taking material off-site are based on the proposed annual throughput (1.1 Mtpa). Using the assumed truck capacity of 30 tonnes and based on truck haulage of quarry product only to occur Monday - Friday as proposed, this equates to approximately 64 loaded trucks per day (i.e. 128 daily trucks movements - in and out). However, the proposed maximum number of loaded trucks per day is 140 (i.e. 280 trucks movements per day - in and out). As such the AQIA has potentially underestimated worst-case emissions and hence worst-case potential impacts.

The inclusion of a worst-case modelling scenario based on maximum daily material handling (including the proposed maximum truck movements) is likely to result in higher project-related increments. Worst-case modelling scenario based on maximum daily material handling is necessary to understand the potential 24-hr PM₁₀ and PM_{2.5} impacts due to the proposal.

Information Required

8. Demonstrate that the assessed scenario is a reasonable worst- case scenario. Where robust demonstration & justification cannot be provided, revise the assessment to include a reasonable worst-case scenario.

Emissions from the Revised Project were calculated for each assessment scenario (Year 2, Year 10 and Year 20) based:

- 500,000 tpa by road; and
- 600,000 tpa by rail.

An increase in the assumed proportion of product being transported by road affects the emissions from 2 of the 22 dust-generating activities identified in the AQIA. Specifically:

- Loading product to trucks; and
- Hauling product off-site.

A comparable production rate which reflects the maximum daily truck movements would be 1.1 Mtpa. The Revised Project does not propose the transport for 1.1 Mtpa of saleable product by road. Nevertheless, the sensitivity of emissions to an increased proportion of product being loaded to truck and transported by road has been tested at this annualised rate and subsequently evaluated in order to address the EPA request. This involved re-calculating the annual TSP, PM₁₀ and PM_{2.5} emissions from the Revised Project for an alternative scenario and following the calculation methodology from the AQIA.

Table 3 shows the estimated annualised emissions due to the Revised Project with an average daily production rate equivalent to 1.1 Mtpa of product being transported by road¹. Year 20 was chosen as it represented the potential worst-case in terms of emissions and impacts to sensitive receptors.

¹ While the emissions inventory reflects annual emissions, the modelling of this scenario would only be relevant to the assessment of 24-hour emissions as the Revised Project does not propose an annual road haulage rate of 1.1Mtpa.

Table 3 Emissions due to the Revised Project for an alternative road transport scenario

Scenario	Estimated annual emissions (kg/y)		
	TSP	PM ₁₀	PM _{2.5}
Revised Project Year 20 with 500,00 t by road	170,234	62,610	9,546
Revised Project Year 20 operating at 1,100,00 t by road comparative rate	181,994	64,850	10,106
Difference as a percentage	+ 7%	+ 4%	+ 6%

The results from Table 3 show that PM₁₀ emissions when operating at maximum road haulage rates may be 4% higher than modelled using an average daily rate. This level of change does not affect the outcomes of the assessment based on the model results from Table 2 which show that the project increment would need to increase by more than 40% before the 24-hour average PM₁₀ criterion is exceeded, in the worst case scenario (Year 20) for the most affected sensitive receptor.

2. Requested Information (MCQAG)

The ADA AQIA has failed to assess the impacts from the proposed handling, storage and processing of lime and fly ash at the Site. MCQAG understands that these are binding agents used in pug milling activities formerly performed at the Site without consent. According to the US EPA8 fly ash contains contaminants including mercury, cadmium and arsenic. MCQAG notes that the potential impacts and emissions of fly ash during the handling, storage, mixing and transport of the product on and off site has not been considered, assessed or detailed. We request the Minister to require the Proponent to perform an assessment of the impacts and mitigations proposed for the safe handling, use and transport of products containing fly ash.

The Revised Project proposes that all fly ash, lime and other proposed additives such as cement and slag will be delivered in tankers, then transferred to enclosed silos or used directly from tankers. The blending process involves adding water to the quarry material and additive.

The enclosed nature of fly ash and lime transport, storage and processing will effectively minimise emissions to air. These practices represent all reasonable and feasible measures for the safe handling, use and transport of products containing fly ash. As a result, specific consideration of fly ash in the air quality modelling is not considered to be warranted.

The ADA, revised AQIA and RTS has failed to address the specific request and impact detailed in MCQAG's 2016 submission, being the emission of dust particulate matter into the atmosphere during conveyor start up and shut down operations, an issue that has currently gone unaddressed. 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.

The Revised Project proposes a range of dust management measures. These measures include the enclosure of the primary, secondary and tertiary crushers and screening plant, and automated water sprays at transfer points. The automated water sprays will be required to operate to at all times necessary to manage dust emissions including during conveyor start up and shut down operations. Daracon will be required to make sure that the spray systems are maintained for efficient operation.

We raised concerns in our 2016 submission in regard to the 14% free silica content of andesite rock that originates from MCQRailwayBQ. Whilst the revised AQIA has an additional section on free silica, we consider the assessment to be deficient.

According to the AQIA, the analysis of the potential for Silica impacts was based on a single day's data set (being 14 June 2019), the analysis fails to detail the weather conditions on that day. The analysis fails to append the raw data and laboratory results collected during the one day of sampling. Given the extrapolation of that single day of monitoring comes within 33% of the Victorian recommended limits we hold grave concerns for the real-world impacts of silica emanating from the Site. 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. We also request the Minister to require the Proponent to provide further analysis (with background weather data and lab testing results appended) and monitoring across more than a single day to provide a better representation of likely impacts from Silica, particularly having regard to the fog of dust that emanates from the Site during conveyor and process start up and shut down.

The assessment of crystalline silica was informed by both monitoring and modelling information.

The monitoring was carried out at the site boundary, downwind of the quarry under normal operating conditions, and designed to detect maximum contributions from the quarry. As noted in the AQIA the estimated maximum annual average respirable crystalline silica concentration did not exceed the relevant assessment criteria at the site boundary. Lower concentrations would be expected further from the site boundary and at private sensitive receptors.

The modelling showed that respirable crystalline silica concentrations will also not exceed the relevant assessment criteria at private sensitive receptors. Both of these outcomes (i.e. monitoring and modelling) were used to conclude that the quarry has not caused, and is not expected to cause, adverse air quality impacts with respect to crystalline silica.

The current monitoring consists of five dust deposition gauges, one high volume air sampler and one meteorological station. As the modelling and assessment showed that the change in ambient air quality at the nearest private sensitive receptors would not lead to exceedances of criteria, no additional monitoring is proposed.

3. References

Holcim (2020) "Lynwood Quarry Environmental Air Quality Management Plan", dated September 2020 FINAL.

Katestone (2011) "NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and / or Minimise Emissions of Particulate Matter from Coal Mining". Prepared by Katestone Environmental Pty Ltd for NSW Office of Environment and Heritage, December 2010.

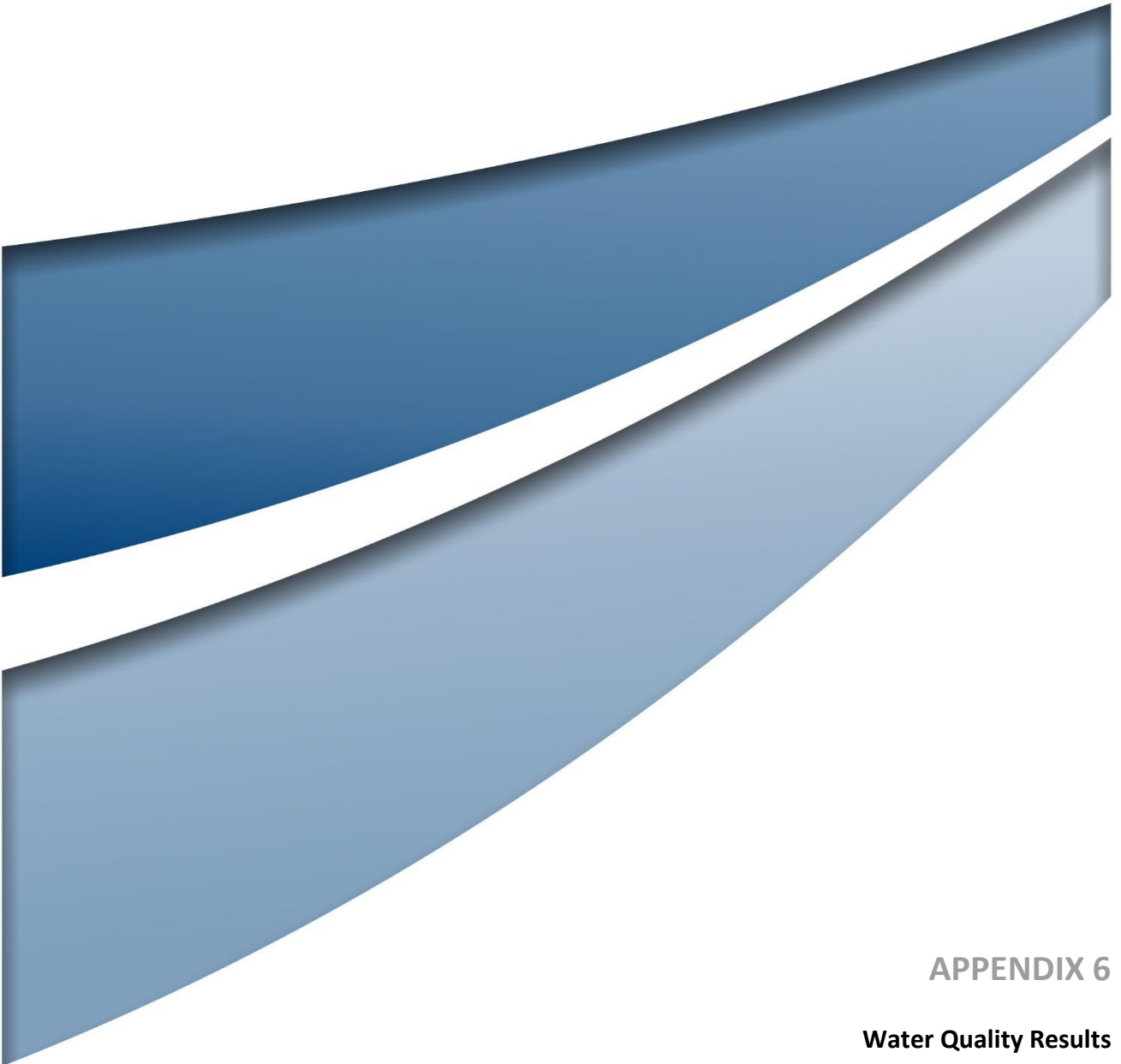
DEC (2007) "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW". Published by the Department of Environment and Conservation, now EPA. January 2007.

EPA (2016) "Approved Methods for the Modelling and Assessment of Air Pollutants in NSW". NSW Environment Protection Authority.

Jacobs (2020) "Martins Creek Quarry Extension Project – Air Quality Impact Assessment". Report prepared by Jacobs Group (Australia) Pty Ltd for Buttai Gravel Pty Ltd. Final, Revision 1, dated 17 November 2020.

Appendix A

Copy of EPA Submission



APPENDIX 6

Water Quality Results

Report Number:
7030

Date Issued: 27/02/2019

Revision Number: 00

Site/Job: Martins Creek Monthly Monitoring

Client: Daracon Group Pty Ltd

Address: PO Box 401

Beresfield NSW 2322

Contact: Ashley Smith

PO Box 2335 Greenhills NSW 2323
P (02) 4028 6412 E mail@vgt.com.au
www.vgt.com.au ABN 77 621 943 600

The following 4 samples were received on 14/02/2019

Client Sample Reference	Licence Ref /GPS	Date Sampled	Laboratory ID	Matrix	General Comments
Dam 1		14/02/2019	7030/1	Water	Not Discharging
Dam 3		14/02/2019	7030/2	Water	Not Discharging
Gostwyck Bridge		14/02/2019	7030/3	Water	
Horns Crossing Causeway		14/02/2019	7030/4	Water	

The samples have been tested and the following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)


Anthony Crane
Laboratory Manager

NATA Accredited Laboratory – 20375

Accredited for compliance with ISO/IEC 17025 –
Testing. The results of the tests, calibrations and/or
measurements included in this document are
traceable to Australian/national standards.


Test Report Number:

7030



Date Issued:

27/02/2019

Revision No: 00

Results

Physical Components	Units	Method	Limit of Report	7030/1 Dam 1 14/02/2019	7030/2 Dam 3 14/02/2019	7030/3 Gostwyck Bridge 14/02/2019	7030/4 Horns Crossing Causeway 14/02/2019
Temperature	°C	Temp	0.1	23.1	24.9	24.5	23.1
pH	pH Units	APHA 4500-H B	0.1	8.1	8.7	8.1	7.6
Electrical Conductivity	µS/cm	APHA 2510 B	50	547	699	319	532
Turbidity	NTU	APHA 2130 B	0.1	160	22	6.8	3.8
Total Suspended Solids	mg/L	AS3550.4	2	96	16	6	7

Nutrients	Units	Method	Limit of Report	7030/1 Dam 1 14/02/2019	7030/2 Dam 3 14/02/2019	7030/3 Gostwyck Bridge 14/02/2019	7030/4 Horns Crossing Causeway 14/02/2019
NOx as N*	mg/L	EXT	0.005	5.6	8.7	<0.005	0.020
Nitrite as N*	mg/L	EXT	0.005	0.19	0.074	<0.005	<0.005
Nitrate as N*	mg/L	EXT	0.005	5.4	8.6	<0.005	0.010
Total Nitrogen*	mg/L	EXT	0.1	8.8	14	0.9	0.7
Total Phosphorus*	mg/L	EXT	0.05	<0.05	<0.05	0.07	<0.05

Metals - Dissolved *	Units	Method	Limit of Report	7030/1 Dam 1 14/02/2019	7030/2 Dam 3 14/02/2019	7030/3 Gostwyck Bridge 14/02/2019	7030/4 Horns Crossing Causeway 14/02/2019
Aluminium*	mg/L	EXT	0.01	0.04	0.04	<0.01	<0.01
Arsenic*	mg/L	EXT	0.001	0.004	0.017	0.002	0.001
Boron*	mg/L	EXT	0.02	0.28	0.78	0.10	0.07
Cadmium*	mg/L	EXT	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium*	mg/L	EXT	0.001	<0.001	<0.001	<0.001	<0.001
Copper*	mg/L	EXT	0.001	0.001	<0.001	<0.001	<0.001
Iron*	mg/L	EXT	0.01	<0.01	<0.01	0.02	0.06
Manganese*	mg/L	EXT	0.005	0.015	<0.005	0.005	0.034
Nickel*	mg/L	EXT	0.001	<0.001	<0.001	<0.001	<0.001
Lead*	mg/L	EXT	0.001	<0.001	<0.001	<0.001	<0.001
Selenium*	mg/L	EXT	0.001	0.003	0.005	<0.001	<0.001
Zinc*	mg/L	EXT	0.001	0.031	0.012	0.027	0.027
Mercury*	mg/L	EXT	0.00005	<0.00005	<0.00005	<0.00005	<0.00005

BTEX/TPH	Units	Method	Limit of Report	7030/1 Dam 1 14/02/2019	7030/2 Dam 3 14/02/2019	7030/3 Gostwyck Bridge 14/02/2019	7030/4 Horns Crossing Causeway 14/02/2019
Benzene*	µg/L	EXT	1	<1	<1	<1	<1
Toluene*	µg/L	EXT	1	<1	<1	<1	<1
Ethyl Benzene*	µg/L	EXT	1	<1	<1	<1	<1
meta- & para-Xylenes*	µg/L	EXT	2	<2	<2	<2	<2
ortho-Xylene*	µg/L	EXT	1	<1	<1	<1	<1
Total Xylenes*	µg/L	EXT	2	<2	<2	<2	<2
Sum of BTEX*	µg/L	EXT	2	<2	<2	<2	<2
Naphthalene*	µg/L	EXT	1	<1.0	<1.0	<1.0	<1.0
C6-C9 Fraction*	µg/L	EXT	10	<10	<10	<10	<10
C10-C14 Fraction*	µg/L	EXT	50	<50	<50	<50	<50
C15-C28 Fraction*	µg/L	EXT	100	<100	<100	<100	<100
C29-C36 Fraction*	µg/L	EXT	100	<100	<100	<100	<100
C10-C36 Fraction (sum)*	µg/L	EXT	100	<100	<100	<100	<100
C6-C10 Fraction*	µg/L	EXT	10	<10	<10	<10	<10
C6-C10 Fraction (-BTEX)*	µg/L	EXT	10	<10	<10	<10	<10
>C10-C16 Fraction*	µg/L	EXT	50	<50	<50	<50	<50
>C16-C34 Fraction*	µg/L	EXT	100	<100	<100	<100	<100
>C34-C40 Fraction*	µg/L	EXT	100	<100	<100	<100	<100
>C10-C40 Fraction (sum)*	µg/L	EXT	100	<100	<100	<100	<100

COMMENTS:

Location Analysed : Field and 4/30 Glenwood Dr Thornton NSW 2322

Note: # Where present, indicates NATA accreditation does not cover the performance of this service.

*tests by Envirolab NATA Acc 2901 Report No.211794

NATA Accredited Laboratory – 20375

Accredited for compliance with ISO/IEC 17025 – Testing. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.



Results have been approved and report finalised on 27/02/2019

Sampling Report Number:**7030**

Date Issued: 27/02/2019
Sampling Conditions: Cloudy 24-26°C

Revision No: 00



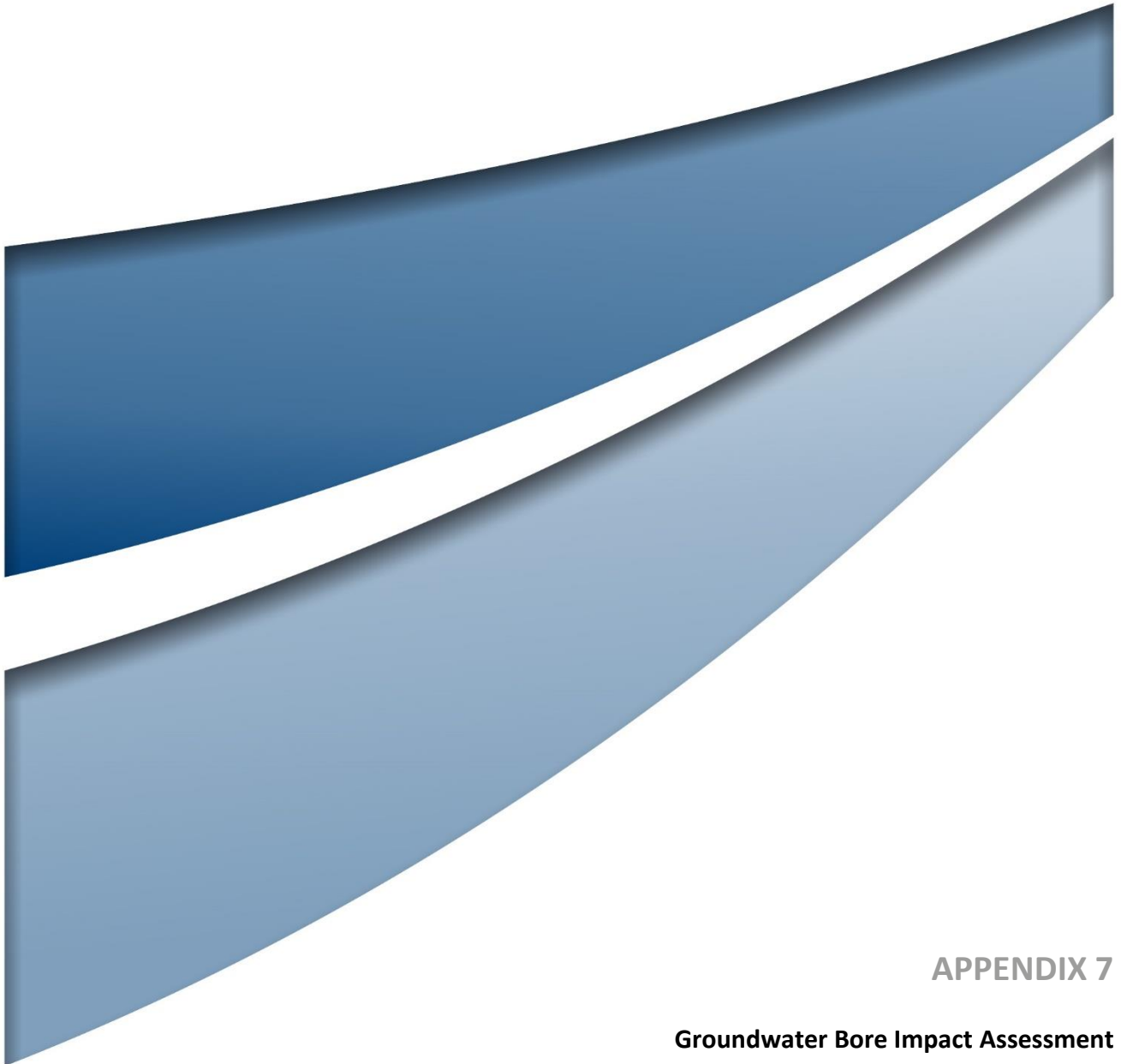
Sample#	Description	Date Sampled	Sampler	Method of Sampling	Pre-treatment / Preservation	Comments
7030/1	Dam 1	14/02/2019 12:25 PM	T.Walker	AS5667.4 Lake, Grab	AS5667.1	No visible Oil and Grease
7030/2	Dam 3	14/02/2019 12:55 PM	T.Walker	AS5667.4 Lake, Grab	AS5667.1	No visible Oil and Grease
7030/3	Gostwyck Bridge	14/02/2019 2:00 PM	T.Walker	AS5667.6 River, Grab	AS5667.1	No visible Oil and Grease
7030/4	Horns Crossing Causeway	14/02/2019 1:30 PM	T.Walker	AS5667.6 River, Grab	AS5667.1	No visible Oil and Grease

Sampling procedures have been approved and report finalised on 27/02/2019
Where method is "unknown" sampling procedures are not endorsed

NATA Accredited Laboratory – 20375

Accredited for compliance with ISO/IEC 17025 –
Testing. The results of the tests, calibrations and/or
measurements included in this document are
traceable to Australian/national standards.





APPENDIX 7

Groundwater Bore Impact Assessment



12 October 2021

Umwelt (Australia) Pty Limited
75 York Street
Teralba NSW 2284

Attention: Marion O'Neil
via email: moneil@umwelt.com.au

Dear Marion,

Martins Creek Quarry Extension Project – Bore 20CA214711

1 Introduction

The Martins Creek Quarry (MCQ – the quarry) is licensed by Buttai Gravel Pty Ltd, which is part of the Daracon Group (Daracon). MCQ is an existing hard rock quarry situated within the Dungog Local Government Area, approximately 7 kilometres (km) north of Paterson and 28 km north of Maitland, New South Wales.

Earlier this year, Daracon submitted an amended development application for the MCQ Extension Revised Project (the Revised Project). This application sought approval for the consolidation of the existing development approvals and the expansion of the quarry into new areas to extract approximately 1.1 million tonnes of material per annum over a 25-year period. The amended development application is being assessed as a State Significant Development (SSD 6612), requiring approval under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

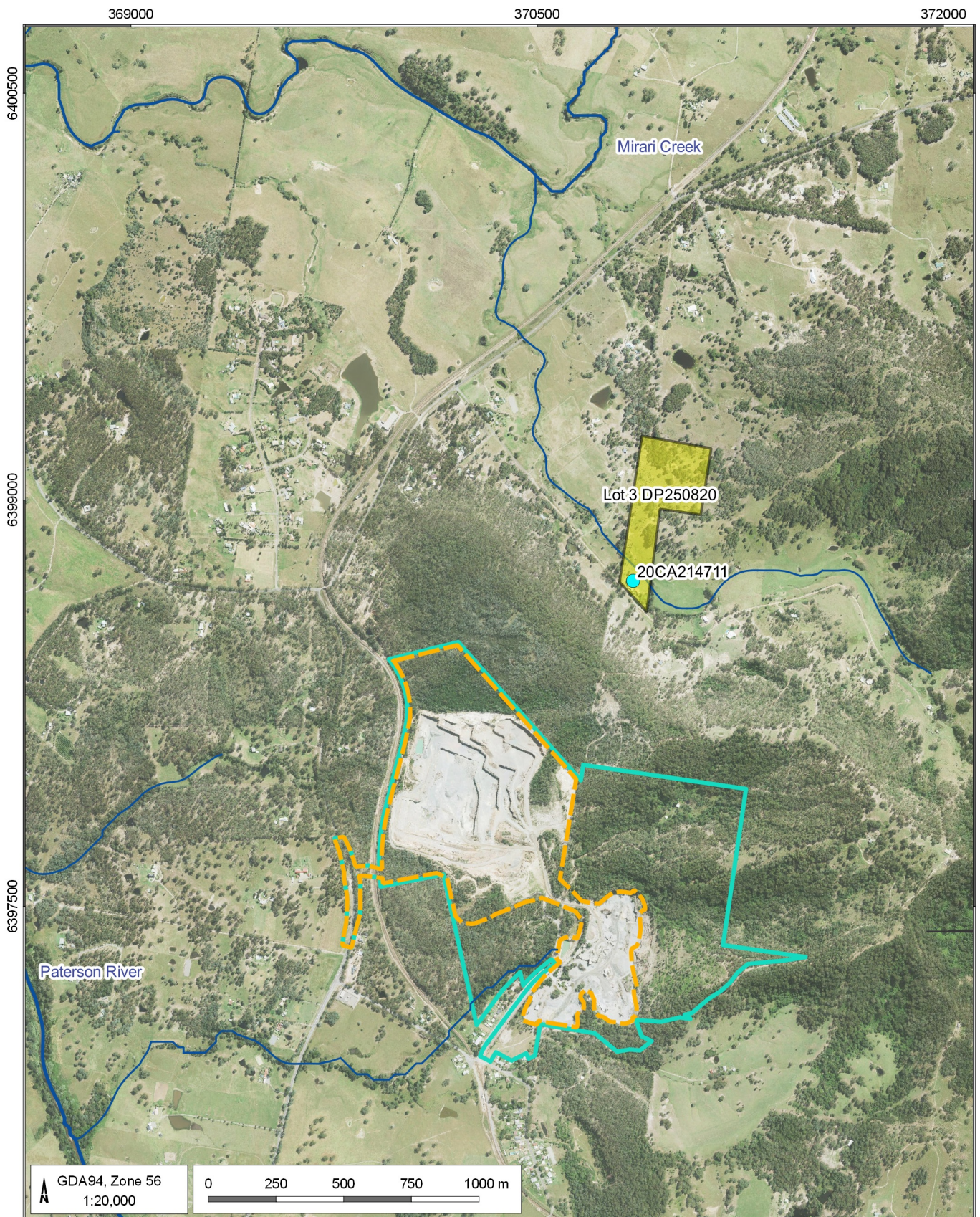
Umwelt (Australia) Pty Limited (Umwelt) are managing the environmental impact assessment of the Revised Project on behalf of Daracon and have provided Australasian Groundwater and Environmental Consultants Pty Ltd (AGE) with recommendations issued by the Department of Planning, Industry & Environment – Water (DPIE) as part of the Environmental Impact Assessment Response to Submissions (RTS). AGE completed the Groundwater Impact Assessment (GIA) component of the environmental impact assessment of the Revised Project¹.

The GIA identified two active registered bores within five kilometres of MCQ. Both registered bores are located outside the mapped extent of the quarried Martins Creek Ignimbrite Member. Neither of the two bores are directly down gradient of MCQ, and no impacts on these bores is predicted due to the Project.

DPIE identified an additional registered user not reported in the GIA. This bore (20BL171512 – since converted to 20CA214711 – the bore) is located in Lot 3 DP250820 (the property) and is the closest registered work at approximately 800 m to the north of MCQ (Figure 1.1). The exact location of the bore is unknown, with only a lot number being provided by DPIE. An assessment of impacts on this bore as a result of the Project was requested by DPIE.

AGE have been engaged by Umwelt to prepare this short letter report addressing the DPIE RTS recommendations relating to the bore. This report is intended to supplement the GIA and the two reports should be read in conjunction.

¹ AGE (2021). “Martins Creek Quarry - Groundwater Impact Assessment”. AGE Report No. G1908K, prepared for Buttai Gravel Pty Ltd, March 2021.



LEGEND

- Drainage
- Project Area
- - - Revised Project Disturbance Area
- Lot 3 DP250820
- Bore 20CA214711 - assumed location

Martins Creek Quarry Extension (MCQ5000.001)

Project location



AGE

DATE
30/09/2021

FIGURE No:
1.1

2 Conceptual model extension

The conceptual groundwater model for MCQ was developed as part of the GIA prepared to support the EIS for the Project. The model summarises the main hydrogeological features and processes over MCQ and surrounds, including recharge, discharge, groundwater flow, quality, and users. The closest edge of the property boundary on which the bore is situated is approximately 600 m to the north-east of the MCQ site boundary. This distance was outside the extent of the conceptual model.

The north-east boundary of the conceptual model was extended laterally to include the property and the bore. As with the previous model, the extended conceptual model includes an evaluation of topography, geology and groundwater productivity mapping, depicting hydrogeological conditions in the area.

Figure 2.1 illustrates the surface geology, mapped productive groundwater zones and extended cross-section line traversing the property. The southern portion of the property contains a mapped 'high productivity' aquifer, which is underlain by sequences of the Wallaringa Formation; a bedded lithic sandstone and conglomerate. The mapped high productivity area is associated with a tributary of Mirari Creek, indicating the zonation is likely comprised of relatively permeable alluvium.

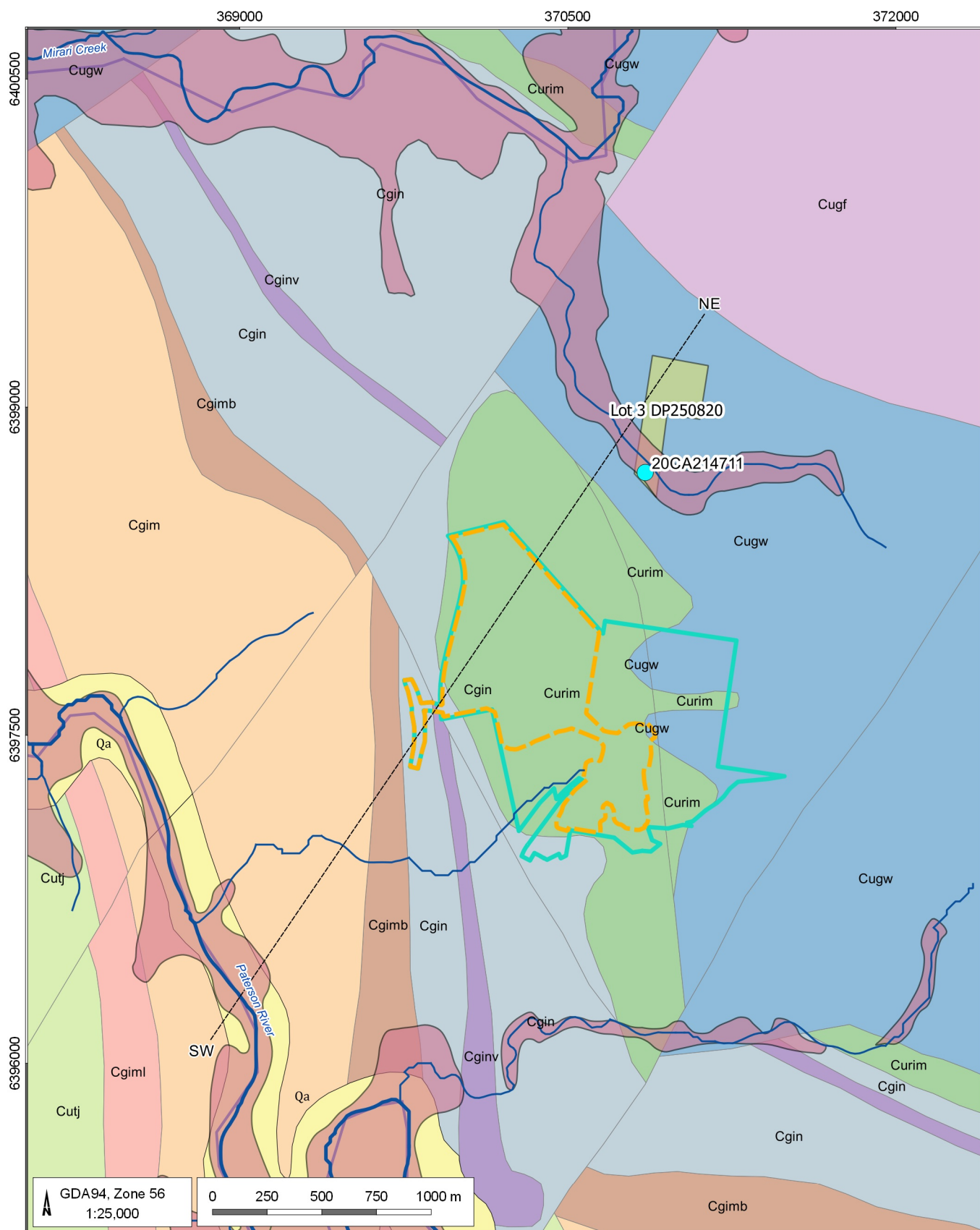
A search of the WaterNSW database revealed no bore construction records for the bore, necessitating certain assumptions to be made. In the interest of conservatism, the impact assessment assumes the bore is constructed in highly productive alluvial sediments located on the southern extent of the property boundary closest to MCQ. Based on our experience with similar geological settings, a 15 m thickness of alluvium/productive sediments has been assumed. Assumed construction details for the bore are presented in Table 2.1.

Figure 2.2 shows the extended conceptual model including the assumed bore location and depth. The inclusion of the property and bore in the conceptual model provides context for the groundwater impact assessment which is discussed in Section 3.

Table 2.1 Bore 20CA214711 assumed construction details

Bore ID	Easting (GDA94z56)	Northing (GDA94z56)	Ground elevation (mAHD)	Bore depth (mBGL)	Target geology
20CA214711	309068	6402310	47	15	Productive sediments

Note: GDA94z56: Geocentric Datum of Australia 1994, zone 56.
mAHD: metres Australian Height Datum.
mBGL: metres Below Ground Level.



LEGEND

- Drainage
- Section line (SW - NE)
- Project Area
- - - Revised Disturbance Area
- High productivity groundwater zone
- Lot 3 DP250820
- Bore 20CA214711 - assumed location

Surface geology

- Quaternary alluvium (Qa)
- Breckin Ignimbrite Member (Cgimb)
- Lambs Valley Ignimbrite Member (Cgiml)
- Martins Creek Ignimbrite Member (Curim)
- Mount Johnstone Formation (Cutj)
- Mowbray Formation (Cgim)
- Newtown Formation (Cgin)
- Vacy Ignimbrite Member (Cginv)
- Wallaringa Formation (Cugw)

Martins Creek Quarry Extension (MCQ5000.001)

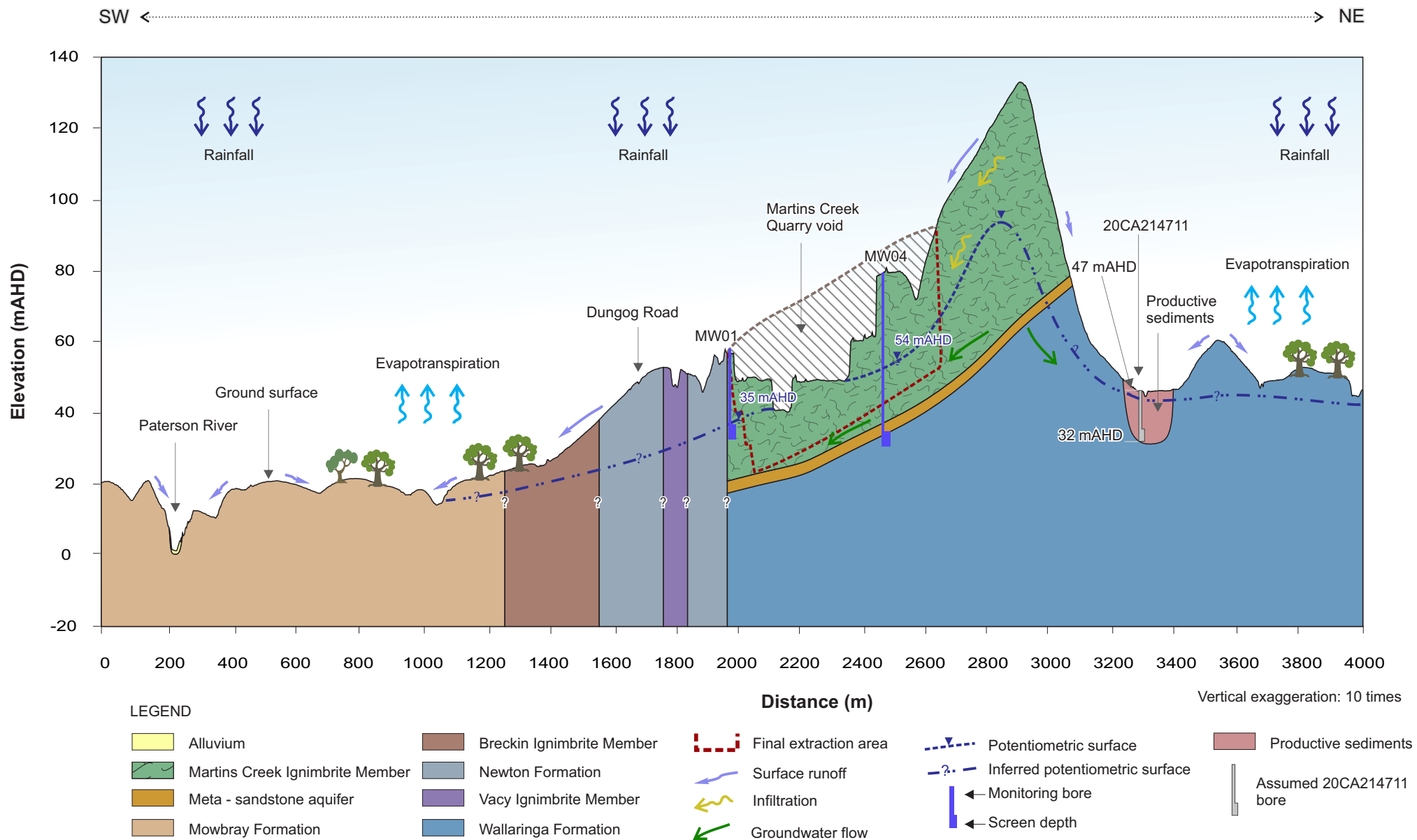
Extended surface geology and cross-section line



AGE

DATE
30/09/2021

FIGURE No:
2.1



Extended geological cross-section SW-NE

Figure 2.2

Martins Creek Quarry Extension (MCQ5000.001)

3 Impact assessment

The reader is directed to the GIA for a detailed discussion of groundwater related impacts at MCQ as a result of the Revised Project and a presentation of available data sources used in the assessment. When assessing potential impacts to the bore, assumptions and parameters for permeability, recharge, groundwater flow paths and drawdown remain unchanged from those outlined in the GIA.

Several factors were considered when assessing potential impacts to the bore. These included the degree of hydraulic connectivity the bore has to MCQ and its host aquifers, whether the bore is in the receiving environment of the quarry, and whether the bore is within the calculated radius of drawdown of the Project. Groundwater monitoring data was also reviewed to inform the assessment.

The Revised Project will quarry the existing resource (Martins Creek Ignimbrite) while the underlying unit (meta-sandstone) will not be quarried (refer Figure 2.2). Groundwater flow at the quarry is constrained to the network of fractures within the Martins Creek Ignimbrite Member, and the thin alteration zone (the meta-sandstone), which is present at the base of the ignimbrite at the contact with the underlying Wallaringa Formation Sandstone. Rainfall recharge to the aquifer typically occurs by rainfall moving down vertical fractures in the ignimbrite, before reaching the meta-sandstone. The comparatively lower hydraulic conductivity of the underlying Wallaringa Formation causes water to preferentially flow through the meta-sandstone, with groundwater flowing through the meta-sandstone to the south-west, towards the Paterson River and away from the bore, which is located to the north-east of MCQ. The position of the bore in the context of regional groundwater flow is important, as it means that the bore is not in the receiving environment of any runoff or groundwater through-flow associated with the quarry pits.

Groundwater monitoring at MCQ has indicated that the potentiometric surface generally follows topography outside excavated areas, and as such the water table through the steeper terrain mirrors the increased elevation. Figure 2.2 illustrates the ridge that separates MCQ and the bore. This ridge acts as a groundwater mound that divides groundwater flow across opposing sides of the ridge. Groundwater interaction between MCQ and the bore is further reduced by the lower permeability Wallaringa Formation Sandstone as described above. These factors indicate that there is hydraulic separation between groundwater flow at the quarry and the property, reducing potential impacts to the bore as a result of the Revised Project.

Analytical groundwater modelling results from the GIA were also reviewed as part of this assessment. No clear evidence of groundwater drawdown associated with existing quarrying operations has been observed within the existing groundwater monitoring network. Low inflow rates to the quarry pits results in a pit seepage rate that is commensurate with rainfall recharge. In circumstances such as this where rainfall recharge matches or exceeds discharge to the pit, there is a much-reduced likelihood of drawdown occurring.

Drawdown calculations included both up and downgradient areas. Monitoring data collected at monitoring bore MW06, located about 250 m upgradient from the pit, showed that MW06 had not experienced drawdown associated with MCQ operations. This served as the basis for a 250 m upgradient radius of influence estimate. A conservative estimate of 500 m was made for locations downgradient of the quarry pits. Comparing these distances to the separation distance assumed for the bore, the radius of influence is not predicted to extend as far as the property. Whilst these radial drawdown distances from the Project have been applied to assess potential impacts to the bore, the hydraulic separation between MCQ and the bore further reduces the likelihood of any potential impacts to the bore.

4 Summary and conclusion

An impact assessment has been conducted for bore 20CA214711. A desktop assessment was undertaken that considered impacts to the bore in a conceptual capacity.

The desktop assessment concluded that a groundwater divide hydraulically separates the quarry from the bore. The groundwater divide is a function of the regional potentiometric surface and the hydraulic conductivity of the relevant geological units that separate the quarry from the bore.

The bore is outside the radius of influence associated the most conservative drawdown predictions used in the GIA. No impacts to groundwater levels at the bore are predicted as a result of the Project.

The bore is not within the receiving environment of the quarry and no impacts to water quality are predicted at the property as a result of the Project.

Further investigative works at bore 20CA214711 are not considered necessary.

If you have any queries, please do not hesitate to call.

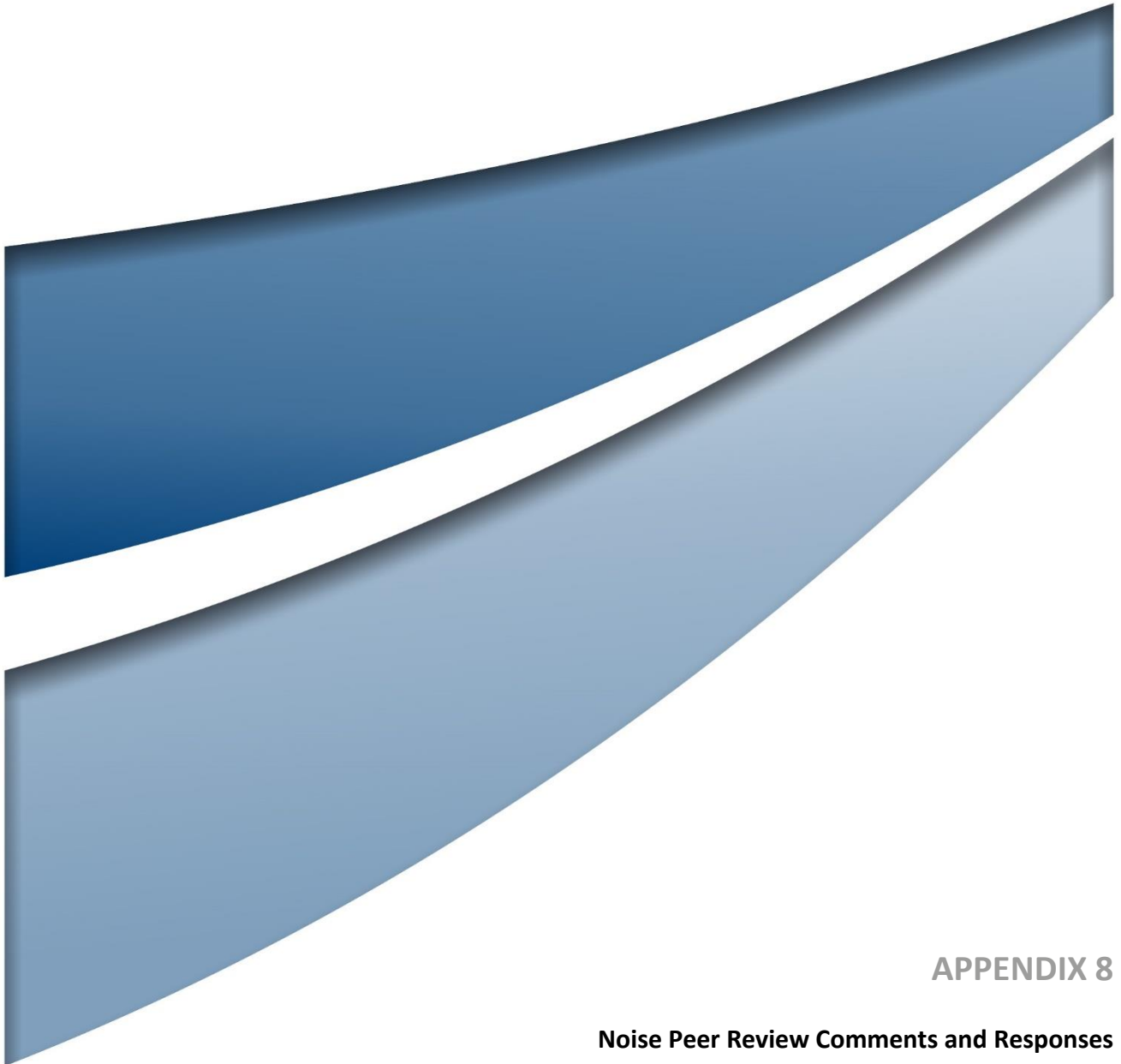
Yours faithfully,



Bryce McKay

Principal Hydrogeologist | NSW Regional Manager

Australasian Groundwater and Environmental Consultants Pty Ltd



APPENDIX 8

Noise Peer Review Comments and Responses

MARTINS CREEK QUARRY EXTENSION PROJECT

Noise Peer Reviews and Responses

FINAL

November 2021



MARTINS CREEK QUARRY EXTENSION PROJECT

Noise Peer Reviews and Responses

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Daracon Group

Project Director: Barbara Crossley
Project Manager: Kirsty Davies
Technical Director: Tim Procter
Report No. 3957C/Appendix 8
Date: November 2021



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This report was prepared using
Umwelt's ISO 9001 certified
Quality Management System.

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
FINAL	Tim Procter	16 November 2021	Barbara Crossley	17 November 2021

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1.0 Introduction

The Amended Development Application (ADA) and Response to Submissions (RTS) Report (ADA Report) for the Martins Creek Quarry Extension Project (the Revised Project) (Umwelt, 2021) was placed on public exhibition from 2 June 2021 to 31 July 2021. A Submission Report has been prepared to address the key issues raised in the submissions received during the public exhibition period.

A number of submissions were received from members of the public and organisations relating to the noise impacts of the Revised Project. In addition to these submissions, two separate and independent peer reviews of the Noise Impact Assessment (NIA) of the Revised Project were also undertaken on behalf of:

- Dungog Shire Council (DSC) (The Acoustic Group, September 2021)
- Martins Creek Quarry Action Group (MCQAG) (Bridges Acoustics, July 2021).

This report has been prepared by Tim Procter, Practice Lead - Acoustic Environment/ Lead Process and Environmental Engineer, from Umwelt Australia Pty Ltd (Umwelt) to respond to the specific matters raised by each peer review. The key issues raised in the peer reviews are identified in text boxes, with a response provided following each text box.

2.0 Response to Peer Review by Dungog Shire Council

The peer review commissioned by DSC has not found technical fault with the NIA or departure from the NSW government approved methods for the assessment of industrial noise, road traffic noise or rail noise. The following section is provided to address the issues raised by the peer reviewer to help clarify the technical aspects of the NIA.

Further to your request I have undertaken a review of the Noise Impact Assessment, Martins Creek Quarry Extension – Revised Project (dated May 2021) prepared by Umwelt (Australia) Pty Ltd.

The Umwelt document does not consider the project in accordance with the existing consent, the requirements of the Land and Environment Court or the Court of Appeal (in relation to the subject site) but seeks to provide noise limits on the basis of a selective interpretation of the EPA's Noise Policy for Industry (NPfI) with respect to an existing industrial development as described in Chapter 6 of the NPfI.

I consider the Noise Impact Assessment (NIA) to be inaccurate and misleading, noting that the document has not actually assessed the impact on residents as a result of the quarry operations and that residents have experienced a significant and unacceptable acoustic impact for many years as a result of illegal operations at the quarry.

The NIA has assessed the proposed operations, road and rail traffic impacts associated with the Revised Project in accordance with the:

- *Noise Policy for Industry, 2017 (NPfI)*
- *Interim Construction Noise Guideline (ICNG)*
- *Road Noise Policy (RNP)*
- *Rail Infrastructure Noise Guideline (RING)*
- *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (VLAMP).*

As Martins Creek Quarry (quarry) has been in operation on a continual basis since 1914, Section 6 of the NPfI applies to modification of the existing development. This is discussed in Section 3.1.5 of the NIA (refer to Appendix D of the ADA Report). As an existing development, the noise emissions from the existing approved development have been used to establish the project noise trigger levels for the assessment of the day-time operation of the East Pit processing area of the Revised Project.

For new developments, the project noise trigger level is established as the most stringent of the project intrusiveness noise level and project amenity noise level. For the Revised Project, this includes the return and loading of road trucks during the day/evening shoulder period, train loading during the evening and night-time period, the expansion of the West Pit extraction area and use of the new access road to Dungog Road. These components of the Revised Project have all been assessed as new development.

The peer reviewer's assertions in relation to the baseline that was assessed for the Revised Project in the NIA is incorrect. The existing approved development used in the NIA as the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project are as follows:

- quarry operations: modelling considers the approved operations in accordance with the Land and Environment Court of NSW (LEC) and Court of Appeal parameters. Specifically, the LEC established the following key parameters of the existing approved development (as per Section 1.4 of the ADA Report):
 - extraction primarily for the purposes of winning railway ballast
 - extraction of rock from Lot 5 DP 242210 (in Western Lands) and not from Lot 6 DP 242210
 - extraction of up to 500,000 tpa (effectively limited by the activities authorised by the Environment Protection Licence
 - continuing use rights for the Eastern Lands for the processing of material extracted from the Western Lands
 - tertiary processing on the Eastern Lands of up to 449,000 tpa
 - no limit on the number of trucks, provided that not greatly more than 30% of material per annum is transported by truck
 - no limit on proposed haul route on public roads
- train movements on the rail siding associated with the loading of rail wagons are included as an industrial noise source in the assessment of the existing approved operations.

Section 3.1.2 of the NIA states that *"The Revised Project is a change to an existing operation and Section 6 of the NPfI provides the process for identifying project noise trigger levels for upgrades or expansion of an existing industrial site"*. An assessment of the noise impacts from the existing approval operations is presented in Appendix 2 of the NIA. The noise impacts from the existing approved operations were used to set the project noise trigger levels for private residences located in proximity to the existing approved operations in the East Pit, that is Noise Assessment Groups (NAGs) 1, 2, 3 and 4 in accordance with the guiding principles of Section 6 of the NPfI for existing industrial developments. The project noise trigger levels for the remaining NAGs were set based on the project intrusiveness noise level and project amenity noise level for a new development as defined by the NPfI. It is noted that the project noise trigger levels are not limits but are triggers against which the impacts of a project are assessed.

In April 2016 I undertook a review of acoustic impacts arising from truck operations associated with the Martins Creek Quarry ("MCQ"), that had resulted in adverse acoustic impacts for people residing in dwellings along the transport route passing through the township of Paterson.

Dungog Shire Council had commenced Class 4 proceedings in the Land and Environment Court of NSW (Proceedings 11188 of 2015). I prepared a Statement of Evidence for those proceedings.

I have not been to quarry or the township of Paterson and for the purpose of the previous proceedings I relied upon documentation that had been provided to me, of which the primary documents for acoustic purposes was that prepared by Mr R Turney of RCA Acoustics, the 1990 EIS, and the development consent issued for the quarry.

The peer reviewer's knowledge and experience regarding the quarry is noted.

Having assisted the Council in the Land and Environment Court proceedings with respect to the operations proposed by the original EIS, and a review of the Expansion EIS I have knowledge in terms of the previous applications and what has occurred previously with respect to Council approval as to what was sought by the then new owners of the quarry.

Relevant facts that are missing from the Umwelt NIA are:

- The Expansion EIS acoustic report identified that the Martins Creek Quarry at the time of the application was managed and operated by Buttai Gravel Pty Ltd who took over operation from State Rail in 2012.
- The quarry was the subject of an Environmental Impact Statement ("the 1990 EIS") prepared by DP James (dated July 1990), resulting in development consent number 171/90/79 issued by Dungog Council dated 7 March 1991 and a revised consent dated 21 June 1991.
- The Council has identified to the Court that complaints have been received in relation to disturbance impacts because of the current quarry operations generating an output greater than that set out in the 1990 EIS, upon which the Council contends the approval for current operation relates.
- The Council identified to the Court that there are no other EIS documents or acoustic assessments that identify an expansion of the quarry to the current output. Furthermore, the Council has no applications or more importantly any approvals to permit the quarry to occur at the level that was identified in the introduction of the Expansion EIS acoustic report, i.e. in the order of 800,000 to 900,000 tonnes of high-quality andesite rock.
- Of relevance to identification of the operating quarry is that the 1990 EIS identified that the estimated annual production of the quarry would be between 250,000 and 300,000 tonnes per year with 70% of the production being removed by rail with the balance (i.e. 30%) by road.
- The 1990 EIS identified that the existing quarry production would remain the same but that the area of extraction would be an adjacent parcel of land.
- The relatively small quarry operation approved by Council in the early 1990s was purchased by the Daracon Group in 2012.
- The Expansion EIS identified that the Daracon Group undertook significant capital expenditure in 2013 and 2014 to ensure that the quarry was being operated at optimal levels, to improve operations and to lower operating costs. Documentation before Council identifies the upgrading of the quarry included a crushing screen upgrade, two new wheel loaders and a new rigid dump truck having expenditure greater than \$3 million
- I was instructed (in 2017) that Council has no development application on their files for an intensification of the quarry use arising from the Daracon Group purchasing the quarry. Therefore, in assessing the subject application that is to provide tonnage in the order of 1½ million tonnes per year it is incorrect to base the application on an unapproved 800,000 to 900,000 tonnes per annum scenario but must be placed in the context of the original application which Council indicates was in the order of 250,000 to 350,000 tonnes per annum, with 30% of that tonnage being transported by road.

It is acknowledged the quarry has a long history of continued operation, ownership and development approval. The ADA Report provides details on the current ownership of the quarry. It is noted that Daracon did not purchase the quarry in 2012, rather Daracon secured a long term licence of the quarry in late 2012.

As outlined above, the LEC proceedings are not the subject of the current development application but provide the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project.

The first page of the Executive Summary of the NIA claims that the NIA has taken into account both the “historical operational aspects of Martins Creek Quarry” and the proposed expansion of the quarry operations.

In Section 1.1 of the NIA the project background refers to a development application for the Martins Creek Quarry extension project (2014), whilst in Section 1.2 under a heading of “Existing Approvals” there is no mention of the development consent that exists for the quarry.

Section 1.2 identified that from the Appeal an Order was issued that the quarry operator to be restrained from using the land otherwise than as a quarry primary purpose of winning railway ballasts or permitting the transport of gravel more than 30% of the quarry products derived from rock excavated from land by public road on an annual basis the out the approval of Dungog Shire Council.

Section 1.2 of the NIA identifies the Court of Appeal set aside a variation to the Environment Protection Licence 1378 (EPL) that sought to permit an increase in the maximum extraction of that the quarry from 500,000 tonnes per annum to 2,000,000 tonnes per annum.

Section 1.2 presents an opinion that the effect of the order was that the EPL restricts the extraction of more than 500,000 tonnes per annum of quarry product. Yet the NIA has failed to identify the restriction in output of the quarry that is set out on the existing condition of consent.

As such, the NIA has presented a misleading basis for the acoustic assessment by failing to identify the restrictions on the amount of material that may be extracted from the quarry and that there has been no subsequent approval by the Council for an increase in the extraction of material from the quarry to that set out in the current consent. The situation was raised in the Class 4 Proceeding which would be relevant to this application and is a necessary part of the “historical operation aspects of Martins Creek Quarry” cited on the first page of the Executive Summary of the NIA that appears to have been overlooked.

The NIA provides a brief history of the quarry for context but in no way suggests that it is exhaustive. A more detailed description of the quarry’s approval history is provided in the ADA Report.

Section 1.1 of the NIA notes the relevant approved parameters of the quarry, as per the LEC and Court of Appeal proceedings. As outlined above, the LEC proceedings provide the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project.

Section 1.2 of the NIA notes that the EPL under L4.1 requires in the absence of a noise limit that all operations and activities occurring on the premises must be conducted in a manner that does not cause offensive noise.

The noise from the quarry is not considered offensive in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act) or *State Environmental Planning Policy 33¹ – Hazardous and Offensive Development* (SEPP33). SEPP33 notes that “compliance with DECCW [EPA] requirements should be sufficient to demonstrate that a proposal is not an offensive industry”.

¹ One of the objectives of SEPP33 is to amend the definitions of hazardous and offensive industries where used in environmental planning instruments.

Section 5 of the Expansion EIS referred to existing noise levels (set out in Table 2) showing Rating Background Levels from unattended noise logging and found ambient background levels in the day, evening, and night-time period to be below 30 dB(A). For Dungog Road 33 dB(A) was identified for the daytime level, 23 dB(A) in the evening and 18 dB(A) at night.

The NIA states that the monitoring data assessed in accordance with the procedures outlined in the NPfl Fact Sheet B for determining the RBLs. This includes setting the day RBLs at 35 dBA, the NPfl policy minimum, where the measured RBLs are less than 35 dBA and setting the evening or night RBLs at 30 dBA, the NPfl policy minimum, where the measured RBLs are less than 35 dBA.

The peer reviewer appears to reference the EIS for the Original Project rather than the ADA Report or NIA for the Revised Project. The measured RBLs in the NIA for the Revised Project for Dungog Road were 30 dBA day, 30 dBA evening and 27 dBA night. The adopted policy minimum RBLs in the NIA for the Revised Project for Dungog Road were 35 dBA day, 30 dBA evening and 30 dBA night.

The presence of such ambient noise levels indicates a quiet area in the absence of sound from the quarry. However, Table 3 in Section 5 of the Expansion EIS identified that in Station Street (identified as location C) the then operations gave rise to a quarry noise contribution of 55 dB(A). On the basis of the quarry site generating daytime noise levels in the order of 25 dB(A) above the default background level therefore results in an acoustic impact that would clearly be defined as generating offensive noise. Yet this fact of non-compliance with the EPL is missing from the “historical operational aspects of Martins Creek Quarry” identified to be addressed in the NIA.

As outlined above, the noise from the quarry is not considered offensive in accordance with the POEO Act or (SEPP33). Section 6 of the NPfl notes that:

- many existing industrial noise sources were designed for higher noise emission levels than the project noise trigger levels outlined in the policy
- many industries existed before the development of neighbouring noise-sensitive receivers
- many industries existed before noise-control legislation was introduced

This is the case for the quarry and is reflected in Environment Protection Licence 1378 (EPL).

Notwithstanding this, the narrative around Chart 3.1 in the NIA for the Revised Project indicates how the noise impacts from the existing approved development have been used to establish project noise trigger levels for the East Pit processing area of the Revised Project. Appendix 2 of the NIA for the Revised Project presents the noise level from the existing approved development. Where the noise levels exceed the project amenity noise level for the designated land use, the project noise trigger level have been set at the respective project amenity noise level. The NIA for the Revised Project states that the process outlined in Section 6 of the NPfl only applies to the derivation of day-time project noise trigger levels for NAGs 1, 2 3 and 4. The project noise trigger levels for NAGs 1, 2 3 and 4 evening and night and all periods for the remaining NAGs were set based on the project intrusiveness noise level and project amenity noise level for a new development as defined by the NPfl.

Revised Project

Section 2 of the NIA presents a description of the revised project to indicate a proposal to extract and process up to 1.1 million tonnes per annum of hard rock material over 25 years. The proposed project involves a significant increase in the capacity of the development (1.1 million tonnes per annum) to that for which there is an existing consent (300,000 tonnes per annum).

The proposed transportation by truck of 500,000 tonnes per annum versus the existing consent (90,000 tonnes per annum – being 30% of the approved tonnage for quarried material) is a significant increase.

The 1990 EIS for the original quarry application stated that the average number of truck movements per day would be 24 truck movements per day. Section 2 of the NIA identifies a maximum of 140 loaded trucks (being 280 movements) per day that represents a significant increase for the current consent.

The peer reviewer has incorrectly presented the approved limits for extraction and road transportation. As outlined above and described in Section 1.4.1 of the ADA Report, the quarry has approval for:

- extraction of up to 500,000 tpa
- no limit on the number of trucks, provided that not great more than 30% of material per annum is transported by truck (equating to 150,000 tpa by truck).

It is acknowledged that the Revised Project represents an increase to the approved operations. Appendix 9 of the NIA provides a detailed analysis of the truck movements from the quarry for the period from 2013 to 2019. This data has been used to forecast the breakdown of daily truck movements on an annual basis. It is also noted that 280 truck movements per day represents the capped daily maximum that would only occur up to 50 days per year.

Noise Criteria

In terms of general EPA assessment procedures for industrial premises the starting point for evaluation of noise looks to the application of the intrusiveness noise criterion, being background +5 dB(A) at residential receivers and then consideration of the amenity noise level (being the total noise of industrial premises) applicable to various receiver locations. The project trigger levels for such situations are determined as the lower of the intrusiveness noise criterion or the amenity noise criterion.

The NIA identifies that the original SEARS 2014 criteria has been applied to the project (in that it is an expansion of the original project in 2014). On that basis the noise assessment should be utilising the Industrial Noise Policy (INP) as the base tool for assessing noise from the proposed development.

However, the NIA selected the use of the Noise Policy for Industry (NPfI) that replaced the INP in November 2017.

There are differences in terms of the application of EPA assessment criteria to existing industrial premises between the two documents that has not been identified in the NIA.

In the INP the amenity noise criteria are clearly identified at the top of Table 2.1 recommended noise levels from industrial noise sources. In the NPfI has to look to the notes following Table 2.2 to find that the amenity noise levels refer only to noise from industrial sources.

In both the INP and the NPfI there is consideration of a modification to the amenity noise target for the project in question to which one must take into account the existing amenity noise level.

The Secretary's Environmental Assessment Requirements (SEARs) were originally issued for the Project 2014 with amended SEARs issued in 2016.

Given the changes to the Original Project and to address the submissions on the EIS, the ADA Report was prepared as an ADA and RTS. Confirmation of the approval and requirements to amend the development application in accordance with clause 55 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), was provided by the Department of Planning, Industry and Environment (DPIE) on 6 November 2020. This correspondence along with the SEARs is contained in Appendix A of the ADA Report. As part of this process, Daracon sought confirmation to use the NPfI, as the current approved policy, rather than the *Industrial Noise Policy* (INP).

The NIA has been undertaken in accordance with the NPfI, as confirmed with DPIE, including determining the project noise trigger levels for the Revised Project.

Section 3.1 of the NIA does not identify the existing amenity noise level as a result of the sources (the quarry) under the existing situation and therefore has not identified the extent of breaches of the amenity noise targets.

The recommended amenity noise levels in Table 2.2 of the NPfI represent the objective for total industrial noise at a receiver location. The amenity noise level is a period (day, evening or night) based analysis. The project amenity noise level represents the objective for noise from a single industrial development at a receiver location. In the NIA for the Revised Project the project amenity noise level is set at the recommended amenity noise level. The amenity noise of itself is not a mandatory target. For a new development it is used to establish project noise trigger levels that 'trigger' a further investigation of mitigation measures. For an existing development the project amenity noise level could be used in setting target noise levels (i.e. project noise trigger levels) as part of a pollution reduction programs or environmental improvement programs for noise. As noted in Section 6.2 of the NPfI, where the project noise trigger levels are exceeded, feasible and reasonable noise mitigation strategies should be assessed.

Section 3 of the NIA and Appendix 2 of the NIA for the Revised Project identify the existing $L_{Aeq,15\text{minute}}$ noise level from the quarry with all noise sources related to the existing approved development operating on the site in accordance with Section 3.3 of the NPfI. The contribution of the quarry to the amenity noise level is a period (day, evening or night) based analysis. For convenience the NPfI estimates the $L_{Aeq,period}$ noise level to be equivalent to the $L_{Aeq,15\text{minute}}$ noise level minus 3 dB. An assessment of the existing $L_{Aeq,15\text{minute}}$ noise level from the quarry presented in Appendix 2 indicates properties in NAG 1 experience noise levels above the NPfI's recommended day-time amenity noise level for the land use. However, this does not constitute a "breach[es] of the amenity noise targets". It does, as indicated above, 'trigger' the investigation into feasible and reasonable noise mitigation strategies. The Revised Project includes substantial mitigation strategies to reduce the noise levels from the operation of the East Pit processing area to which this specific assessment applies.

The last paragraph on page 14 of the NIA under Section 3.1.2 is another example of misdirection in terms of setting noise criteria and ignoring the obligations of an acoustical consultant to protect the health and well-being of the community.

The EPA states that the “purpose of the policy [NPfI] is to ensure noise impacts associated with particular industrial developments are evaluated and managed in a consistent and transparent manner”. The NIA of the Revised Project has been prepared in accordance with the NPfI.

In Section 10 of the INP the application of the policy to existing industrial premises is presented as the concept of introducing noise reduction program(s) for sites that exceed project-specific noise levels, that in turn require the assessment of all feasible and reasonable control measures to achieving noise limits that are the subject of negotiation.

In essence the EPA generally applied a big stick to industrial premises that were wanting to expand their operations by requiring those premises to enter into a noise reduction program as part of the application for the expanded project.

In Section 6 of the NPfI there is approach for a requirement to implement a noise reduction program or environmental improvement program that can be triggered by actions such as:

- **the site becoming the subject of serious, persistent noise complaints**
- **a proposal to upgrade or expand the site**
- **the site having no formal consent or licence conditions and management wishing to clarify the position**
- **the owner occupier choosing to initiate an environmental improvement program**

In this regard on page 15 of the NIA there is an extract from Section 6 of the NPfI to identify that where existing site operations exceed the project amenity noise level project amenity noise level may be adopted as the project noise trigger level to assess existing, and existing plus proposed site operations.

Notwithstanding the NIA providing the above extract one finds in Table 3.1 project amenity noise levels based upon the use of the above extract but without identifying the extent and magnitude of existing noise to which the residents receive. Another omission of “historical operational aspects of Martins Creek Quarry” identified to be addressed in the NIA.

The methodology used to assess the noise impacts from the East Pit processing area is based on the requirement of Section 6 of the NPfI which is consistent with the expectation of the Section 10 of the INP. The NIA outlines substantial feasible and reasonable physical and operation noise control measures and mitigation strategies that have been incorporated into the Revised Project to reduce the noise levels from the East Pit processing area. Section 6 of the NPfI notes that:

- there is no ‘one-size-fits-all’ approach to determine the impact from an existing industry
- that the project noise trigger levels should not be applied as mandatory noise limits
- the project noise trigger level is used to assess noise impact and drive the process of assessing all feasible and reasonable control measures
- for an existing industry that has been in operation for more than 10 years and exceeds the project amenity noise level, the project amenity noise level may be adopted as the project noise trigger level
- agreed programs of work to reduce high existing noise levels to acceptable levels take time to implement

- agreed programs of work provide for flexibility in the choice of noise reduction measures
- the significance of residual noise impacts should be addressed on a case-by-case basis.

The NIA demonstrates the quarry can implement noise control measures to reduce the noise impacts from the East Pit processing area in line with the objectives of Section 6 of the NPfl. The residual impacts from the East Pit processing area where the predicted noise impacts exceed the noise project noise trigger levels have been assessed in accordance with the VLAMP in Section 7 of the NIA.

With respect to the extent and magnitude of existing noise from the historical operational aspects of the quarry, as outlined above, Section 3 and Appendix 2 of the NIA identifies the noise levels from the existing approved development.

The nature of Martins Creek Village may not necessarily be afforded the benefit of being called a suburban area as presented in Table 3.2 of the NIA. The consequence of selecting a Suburban receiver land use category is to increase the project amenity noise level for those locations.

The village of Martins Creek is zoned RU5 Village and the land use is categorised by the NPfl as suburban.

For the intrusiveness noise target in view of the remote location of the residential receivers there is clearly an expectation of a significantly lower background noise level when compared with the amenity criteria.

The intrusiveness noise levels are based on background noise levels presented in Table 3.4 in the NIA only

Section 3.2 of the NIA indicates the acoustic environment in the region surrounding the Revised Project has a low background noise level and that the minimum policy noise levels are applicable when establishing the project intrusiveness noise levels.

The results of ambient noise monitoring in proximity to the quarry identifies ambient background levels that are at or below the EPA's default minimum rating background levels and therefore clearly indicate a quiet rural area such that if the project intrusiveness noise level target were applied the development as proposed could not proceed.

Under the NPfl the project intrusiveness noise level is one of the elements used to ensure that acceptable noise outcomes are determined by decision-makers (refer to Section 2.1 of the NPfl).

The problem that exists in terms of determining the actual impact of existing and proposed operations is that the background noise is defined in the NPfl as:

The underlying level of noise present in ambient noise, generally excluding the noise source under investigation, when extraneous noise is removed. This is described using the LAF90 descriptor.

The NIA by not having identified the extent and magnitude of noise from the existing operations has therefore not identified whether the Rating Background Levels in Table 3.4 are simply the background levels that have been obtained or whether there has been a correction to remove noise from the existing operations so as to determine background noise levels.

The NPfl also states that the background noise levels can include the subject development operating if:

- the premises has been operating for a significant period of time (in excess of 10 years)
- is considered a normal part of the acoustic environment, and
- has been operating in accordance with noise limits and requirements imposed in a consent or licence and/or be applying best practice.

As outlined above, the NIA has been undertaken in accordance with the NPfl including determining the RBLs.

As Table 3.4 identified ambient background levels lower than EPA's default background levels, then if one was conducting a noise impact assessment and identified that the impact the noise from the operation would create, it would be necessary to consider such noise versus the true ambient background level of the area, in addition to the requirement to assess noise from the operation is to not be offensive noise as required by the EPL.

Section 2.3 of the NPfl states: "Minimum assumed RBLs apply in this policy". This has been adopted in Table 3.4 if the NIA in accordance with the NPfl.

The second paragraph on page 18 of the NIA states:

Based on the results of the noise modelling, the noise impact from the existing approved operations are identified as being a primary contributor to existing background noise levels at receivers in NAGS 1, 2, 3 and 4. These modelled noise levels from the existing approved operations exceed the project amenity noise level during daytime period for some receivers in this area and the project intrusive noise level at most residences, particular those in NAGs 1, 2 and 3.

As an existing industrial source with noise emission levels higher than contemporary project noise trigger levels outlined in the NPfl, the statement in the second paragraph on page 18 of the NIA is a fair reflection of the quarry operations.

In the above extract I have provided three different colours of highlights that must become a critical factor in terms of identifying the misleading nature of the NIA.

This statement misrepresents the nature of the NIA. With respect to the "three different colours of highlights":

1. As outlined above, the LEC proceedings provide the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project.
2. There are many sources that contribute to existing background noise levels in NAGS 1, 2, 3 and 4. As an existing industrial source, the East Pit processing area is a primary contributor to existing background noise levels at receivers in NAGS 1, 2, 3 and 4.
3. As an existing industrial source, the noise emission levels from the East Pit processing area exceed contemporary project amenity noise levels outlined at some of the receivers in NAGS 1, 2, 3 and 4.

The NIA is transparent in regard to each of these points. The NIA also follows the methodology outlined in Section 6 of the NPfI to identify and assess the effectiveness of all feasible and reasonable control measures that could reduce the high existing noise levels to acceptable levels. In addition to this, the balance of the Revised Project has been assessed as a new development.

Despite the claim of providing “historical operational aspects of the Martin Creek Quarry”, the NIA has not identified what is the existing approved operations where the approval can only come from the Council. In the Class 4 matter before the Land and Environment Court it has been identified that the approved 1990 operations by reason of the limited and relatively small nature of that operations (both in terms of the quarry and trucking) did not give rise to significant impacts and was not a primary contributor to existing background levels.

The Executive Summary of the NIA states that as an ‘existing industrial noise source, the NIA has taken into account both the historical operational aspects of MCQ and the proposed expansion of the quarry operations’. Section 1.2 of the NIA outlines the existing approvals as relevant to the assessment, in accordance with the LEC and Court of Appeal findings.

Section 6 of the NPfI notes that “existing industrial sources were designed for higher noise emission levels than the project noise trigger levels outlined in this policy”. The NIA has assessed the Revised Project in accordance with the NPfI.

The intensification of the development from 2012 to the current period of time are not approved operations. From the statement on page 18 of the NIA it follows that the illegal operations occurring on the site are giving rise to a significant noise impact to the extent of being a primary contributor to existing background levels at various receivers.

Daracon acknowledges that the Courts have found that past operations at the quarry were not being carried out in accordance with a development consent and existing use rights applying to the land. Previous operations pursuant to Court proceedings are not the subject of the development application for the Revised Project. As previously outlined, the RBLs have been determined in accordance with the NPfI.

Intensification can be in two forms, increased annual capacity i.e tonnes per annum or increased throughput i.e. tonnes per hour. The intensification the subject of Court action was associated with increased annual capacity. The assessment of noise impacts in the NIA is based on a 15-minute noise metric. As a result, the NIA deals with throughput and all noise sources related to the existing approved development operating. In the Revised Project, the throughput of the East Pit processing area has not intensified. To increase the annual capacity there would have to be a corresponding increase in the duration of operation of the processing plant. This does not change the prediction of the LAeq,15minute noise level.

Page 18 of the NIA identifies noise from the site operations exceeding the project amenity noise level targets for some receivers, and by reference to Table 3.5 on page 20 of the NIA automatically identifies a significant breach of the intrusiveness noise target to the extent that one would expect on the existing operations to give rise to offensive noise by reason of interfering with the rest or repose of persons residing in a rural residential or a rural semi residential area.

As outlined above, the intrusiveness noise level is not a target noise level for the existing operations but is one of the elements used to ensure that acceptable noise outcomes for any future approval, are determined by decision-makers. Section 3.1.5 of NIA describes how Section 6 of the NPfl has been applied to the Revised Project and the setting of project noise trigger levels that drive the reduction in noise impacts from the East Pit processing area.

Section 3.5 refers to non-network rail line criteria and provides in Table 3.10 noise targets in terms of an amenity LAeq level and a pass by level (being a maximum level) extracted from the Rail Infrastructure Noise Guidelines (“RING”).

Table 3.10 provided for residents a suburban classification. In the absence of rail activities and consideration of the acoustic environment with the site operations could require a change to rural classification.

The RING references the receiver type and indicative noise amenity area from the INP. It is appropriate therefore that the INP classification of suburban is applicable to the receivers in Martins Creek village.

The NIA refers to an existing rail siding and a proposed rail siding extension. Part of the existing rail siding and the entire section of proposed rail siding extension are located on the property.

Non-network Rail Spurs located on the subject property should be included in the intrusive and amenity noise targets. On the basis of the NIA adopting the NPfl then the addition of operations at night that produce maximum noise levels in accordance with Section 2.5 of NPfl would be less than the targets set out in Table 3.10.

The location of the rail wagon loading facility requires the existing approved development to use a section of the rail siding opposite dwelling Station Street during the wagon loading. The locomotives have been included in the NIA as industrial noise sources. To reduce the noise impacts from the East Pit processing area, the Revised Project will extend the rail spur into the East Pit processing area to remove the industrial activities from the section of track opposite the Station Street receivers. This is discussed in detail in Section 3.5.1 of the NIA.

As outlined in Section 3.5.1 of the NIA, the noise from the section of track opposite the Station Street receivers is assessed against the recommended acceptable LAeq noise levels in Appendix 3 of the RING for non-network rail lines (the relevant section of the RING is reproduced in Table 3.10 of the NIA). Appendix 2 of the RING specifies similar rail noise assessment trigger levels for rail traffic generating developments (the relevant section of the RING is reproduced in Table 3.11 of the NIA).

Utilising the NPfl project specific noise levels therefore provide noise targets for rural areas whereas the NIA has ignored those locations with respect to any assessment of rolling stock or locomotives etc on the spur line that is located inside the boundaries of the subject development, i.e. a mixture of noise criteria for rail operations— off site and on site.

The operational noise levels for the Revised Project in Section 5.1 of the NIA includes locomotives as industrial noise sources within the East Pit during wagon loading. Section 5.5 presents an assessment of the trains transiting the section of non-network rail line opposite the Station Street receivers.

Under Section 1.4 of the RING the guideline applies to residential land affected by heavy rail projects (where have rail projects are related to dedicated rail corridors). The NIA does not identify if the current siding is in a dedicated rail corridor.

The rail siding opposite the Station Street receivers forms part of the non-network rail line that joins the north coast railway line 820 metres to the south of the quarry entrance. The railing siding was built to service the quarry and Appendix 3 of the RING is applicable to the assessment of trains transiting the line. As noted above, where trains use the line as part of the wagon loading activity, an industrial activity, the activity is included as an industrial source as part of the NPfI assessment.

Section 1.4.5 of the RING states:

Non-network rail lines exclusively servicing one or more industrial sites, such as a spur line connecting a mine to a network line, are not common but are likely to be proposed more often in future. Because they are somewhat unique, they should be assessed as described in Appendix 3.

Table 6 in Appendix 3 (of RING) includes a classification for rural residences have LAeq noise levels 5 dB lower than for Suburban receivers.

As noted above the appropriate classification of the receivers in Martins Creek is suburban.

Section 3.7 of the NIA identifies that VLAMP does not apply to modification of the existing development thereby leading to consideration of the matter of residual noise impacts noise levels above the project specific noise targets. Table 3.16 is extracted from the NPfI (Table 4.1). The NIA failed to include receiver-based treatments to mitigate residual noise impacts (Table 4.2 in the NPfI) which certainly would be a solution if the NIA had followed the title of the document and assessed the noise impact from the subject site to then identify the necessity for noise control measures.

While the VLAMP does not apply to the 'modification' of existing developments, the NPfI has a similar process for assessing and managing the significance of residual noise impacts. Table 3.16 is the assessment table (Table 4.1) from Section 4 of the NPfI. Table 4.2 in Section 4 of the NPfI provides examples of receiver-based treatments to mitigate residual noise impacts. While this table was not reproduced in the NIA, it does not negate the applicability of the table to the mitigation of residual noise impacts following an approval to 'modify' the existing development.

Noise Predictions

The NIA relies upon the use of an outdated computer noise monitoring program, identified as ENM.

ENM was a DOS Based program used in the 1980s to which at that time it was endorsed by the EPA but to my knowledge has not been used by creditable acoustical consultants for many years.

The author of ENM (Dr Renzo Tonin) has for the last 20 years been using for matters before the Court different computer prediction models such as Soundplan, Cadna, and INoise (a recent free version of Predictor/Lima).

Software packages such as Soundplan, Cadna and Predictor provide a platform for the development of noise models. Each of these software packages have a range of different noise propagation schemes that can be used to predict noise enhancement from a model of a noise source. The Revised Project was initially modelled in the Soundplan software package using the CONCAWE noise propagation scheme. The model of the Revised Project was moved onto a platform that supported the ENM noise propagation scheme. This was because the ENM noise propagation scheme supports the modelling of noise enhancement from lapse rate information associated with inversions conditions and noise retarding conditions associated with receiver to source vectored wind. The EPA accepts the use of ENM for complex mining and extractive projects.

In relation to computer modelling there is an absolute reliance upon accurate input data. A number of appendices to the acoustic assessment provide extensive tables of noise sources and dB(A) levels, together with predicted outputs. However, that material cannot be checked or validated with respect to the predicted levels unless the resultant program inputs are provided and one can find an old computer with an operating system upon which ENM would operate.

Noise models are representations of the real-world system being model. The accuracy of model relies on data that is representative of that system. The data used in the NIA noise models is presented in Appendix 4 – Noise Source Models and Appendix 5 - Assessment of Meteorological Data.

With respect to the new proposal, the basis of operations of the quarry and road network, upon which it is claimed there are existing noise levels to identify the extent and magnitude of noise impacted by the current and proposed operations, has not been substantiated.

This statement is incorrect. Section 3.1.5 of the NIA discusses the combined use of noise modelling and attended monitoring results to establish the noise levels from the existing operations. The assessment of rail noise on the rail siding uses measured noise levels from attended monitoring. The baseline traffic assessment compared the modelled noise levels with measured noise levels.

It is not uncommon in such matters before the Land & Environment Court for the computer model to be interrogated. Examples where a review of the computer model has found significant discrepancies that affect the acoustic predictions occurred in CJ Corporation Pty Ltd v Canterbury Bankstown Council [2020] NSWLEC 1431 and UGL Rail Pty Ltd v Wilkinson Murry Pty Ltd [2013] NSWSC 1959.

The Revised Project is not before the LEC.

Nevertheless, to facilitate independent review of the modelling process the data used in the NIA noise models is presented in Appendix 4 – Noise Source Models and Appendix 5 - Assessment of Meteorological Data.

On my view of the acoustic assessment, a reasonable could form the view the NIA has been crafted specifically in terms of an obscure interpretation of Chapter 6 of the NPfI, has deliberately avoided identification of the existing conditions of consent and the disturbances that been identified by the community specifically in relation to the truck movements through Paterson.

As reiterated throughout the responses to this peer review, the NIA has been prepared in accordance with the relevant guidelines.

The review of the NIA provided by the peer review does not provide technical support for each of the arguments used to form this position.

In the Expansion EIS the material presented in relation to truck movements followed a similar approach of misrepresenting the factual situation and seeking to present base data that related to operations that were non-compliant with the original consent.

The current application has expanded upon the truck movement concept presented in the Expansion EIS and has not presented the base truck movements that would be required under the current development consent and Orders of the court.

This statement is incorrect. The details of the road traffic noise modelling scenarios are presented in Section 4.6 of the NIA. The assessment of the incremental increase in road traffic noise considers a baseline scenario where there are no trucks from the quarry. It should be noted that this does not equate to no heavy vehicles through Paterson as there are other heavy vehicles road users that pass through Paterson.

The transport of quarried material from the site by road gives rise to acoustic impacts to the extent that there is proposed to have a new exit road from the quarry. However, the quarry trucks passing through Paterson have been identified by residents of Paterson to give rise to significant noise and vibration disturbance.

The NIA does not provide sufficient details in terms of road traffic operations with respect to the subject quarry and presents traffic data averaged over a number of years.

Perceived community impacts are documented and discussed in the ADA Report and Social Impact Assessment (SIA) for the Revised Project.

Weighbridge data for 2013 to 2019 was used to characterise the traffic generation rate by the quarry. The normalised data presented in Appendix 9 provides information on likely daily truck movements. The analysis of the daily truck movement data and forecast of product dispatch via road informed the design of the Revised Project, the commitments to cap truck movements, the management of truck dispatch and provided the information required by the NIA. This analysis is presented in Appendix 9 of the NIA.

I am advised that following the various court matters and restrictions placed upon the operation of the quarry that the quarry was shut down for a period of time. Therefore, there is the possibility that some of the quarry traffic data includes periods in which the quarry was not operating.

As noted above the data was normalised to account for annual fluctuations in the traffic generation rate by the quarry including the period when the quarry went into limited operations following the LEC ruling.

As the Expansion EIS was not increasing rail movements then there was no assessment of those operations with respect to noise levels.

The peer reviewer is referencing the EIS for the Original Project, not the ADA Report or the NIA for the Revised Project. Rail noise has been considered in the NIA for the Revised Project.

In the Land and Environment Court Class 4 proceedings it was identified that noise from the quarry operations gave rise to breaches of the development consent and the noise contours presented in the NIA for the Expansion EIS quantified the breaches of the existing consent.

The peer reviewer is referencing the EIS for the Original Project, not the ADA Report or the NIA for the Revised Project. Appendix 2 of the NIA for the Revised Project includes an assessment of the noise levels from the existing operation. There is no quantification of breaches of noise criteria in the existing consent as there are no noise limits associated with the existing consent. The relevant conditions considered by Land and Environment Court were:

- (a) condition 1, which required the development to be conducted in a manner so as not to interference with the amenity of the neighbourhood, and
- (b) condition 6, which provided that not more than 30% of product from the quarry be transported by road.

The Court considered that “a breach of condition 1 was directly connected to the consideration of condition 6”. The Court referred to the information in the May 2016 SSD Application to determine the level of product moved by road. To the extent that the peer review suggests otherwise, the Court did not find that the May 2016 SSD Application confirmed exceedances of relevant noise criteria.

Taking into account the 1990 EIS and the existing Council consent one could view the application as in effect a new development by reason of the significant changes and a substantial increase in the output of the quarry both in terms of rail and road movements (compared to the existing consent). On that basis the acoustic assessment should have considered the application as a new development thereby utilising the general criteria set out in the NPfl.

As outlined above, Section 6 of the NPfl is applicable to the modification of the existing day-time operation of the East Pit processing area. All other aspects of the Revised Project have been assessed as a new development. This includes the return and loading of road trucks during the day/evening shoulder period, train loading during the evening and night-time period, the expansion of the West Pit extraction area and use of the new access road to Dungog Road through Lot 5.

Section 5.1 of the NIA provides a series of tables and contours that show breaches of the nominated noise targets.

The NPfl does not describe the prediction of noise levels greater than the project noise trigger levels as a “breaches of the nominated noise targets”. The NPfl states that the project noise trigger levels are not mandatory but are used to assess the noise impact and drive the process of assessing all feasible and reasonable control measures.

As noted above, the NIA did not assess the noise impact that residents will receive, nor qualified what would have occurred if the development was operating in accordance with its approved consent.

The NIA for the Revised Project does not seek to retrospectively assess past operations.

Refer to Section 5 and Appendix 6 of the NIA for the predicted noise level and Section 7 for the assessment of the residual noise impacts.

What is missing from the NIA (and is required) is:

- **identification of the predicted noise levels of the approved operations (re-the 1990 EIS),**

Refer to Section 3.1.5 and Appendix 2 of the NIA for the noise levels from the existing operation.

- **the current/existing illegal operations, and**

As outlined above, the LEC proceedings provide the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project.

- **a comparison of the proposed operations into the future.**

Refer to Section 5 and Appendix 6 of the NIA for the predicted noise level and Section 7 for the assessment of the residual noise impacts.

The additional material should be in a series of noise contours and tables of noise contributions.

This material is provided as a series of noise contours and tables of noise contributions in Appendix 2 of the NIA for the existing approved development and Appendix 6 of the NIA for the Revised Project.

Such material would identify the nature of the approved operations versus the current operations, versus the predicted operations, to which the NIA could identify what noise impacts the community will experience.

The material provided in Appendix 2 of the NIA for the existing approved development and Appendix 6 of the NIA for the Revised Project identifies the noise impacts associated with the different stages of the Revised Project. Section 7 of the NIA provides an assessment of the residual noise impacts from the Revised Project following the implementation of feasible and reasonable noise control measures.

Similarly, there are issues in relation to the predicted noise levels associated with traffic where the NIA has not identified the existing conditions of consent and utilises a basis of existing traffic conditions as a result of the quarry operations with the full understanding that the quarry is not operating in accordance with its consent.

This was critical issue in the Class 4 proceedings where the same approach was taken by RCA Acoustics who also conveniently forgot to consider the actual consent for the quarry and the significant intensification that occurred after the quarry was purchased by new owners and therefore resulted in excessive noise and illegal operations.

As outlined above, the baseline for the assessment of the incremental increase in road traffic noise from the quarry was a “no quarry” scenario. The details of the road traffic noise modelling scenarios are presented in Section 4.6 of the NIA.

It is strange that having gone through the process of identifying the need to consider residual impacts that Section 7 of the NIA does not identify the number of houses for each of the area classifications, that under the NPfl should be subject to noise controls.

Table 7.1 of the NIA identifies every receiver location with a residual noise impact.

The second paragraph in Section 7 identifies that the assessment has purportedly evaluated the existing development but fails to identify the consent that applied to the development prior to the current operator's intensification on or after 2012.

The existing noise emissions from the quarry have been used to establish the project noise trigger levels for the assessment of the day-time operation of the East Pit processing area of the Revised Project in NAGS 1, 2, 3 and 4. The expectation of Section 6 of the NPfI is that an approved modification to an existing development would include achievable noise limits that are less than the noise levels generated by the operation in NAGS 1, 2, 3 and 4 prior to the modification. The residual impacts for receiver locations in NAGS 1, 2, 3 and 4 are presented in Section 5 and discussed in Section 7 of the NIA.

By including noise from the existing operations, that identified in the NIA is exceeding the amenity noise targets and influencing the background levels then the assessment in Section 7.1 does not identify the true impact the proposed development because it is not expressed in terms of true ambient background level if the site was operating in accordance with its existing Council consent.

As outlined above, the LEC proceedings provide the baseline for establishing project noise trigger levels for the East Pit processing area of the Revised Project based on the objectives of Section 6 of the NPfI. All other aspects of the Revised Project have been assessed as a new development.

The note to Table 7.2 for the new access road suggests the material in Table 7.2 does not truly reflect the residual impact that would occur for an is prior to the construction and use of the new access road.

The detailed assessment of the empty trucks returning during the evening shoulder period is provided in Table A6.6 of the NIA. The table presents the predicted noise impacts for the period prior to and following the construction of the new access road.

With the residual impacts in Table 4.1 of the NPfI being based on a breach of the intrusiveness noise target, and then being assessed against cumulative industrial noise level versus the recommended amenity noise level, the residual impacts would appear to have issues in that the actual amenity noise level for the area from the approved operations (or the illegal existing operations) with respect to addressing the residual impact on the noise controls are required to be implemented to existing residential properties now and not some unsubstantiated predicted levels at some time in the future.

As outlined above, Section 6 of the NPfI notes that "existing industrial sources were designed for higher noise emission levels than the project noise trigger levels outlined in this policy". As a result, the current consent does not currently afford existing residential properties with noise mitigation. Approval of the Revised Project and contemporising the consent and EPL will entitle existing residential properties with noise mitigation commensurate with the residual noise impacts.

Conclusions

The NIA has failed to consider noise from the operation of the quarry with respect to the real ambient background level or identify the true ambient environment if the quarry was not operating so as to then place in context the acoustic impact generated by the subject quarry.

The NIA has not presented the background level in the absence of the quarry operations.

By not identifying the current consent conditions and the noise limits that flow on from those conditions then the NIA has failed to take into account what the legitimate operations would give rise to noise impacts for comparison with the proposed operations which on the basis of the acoustic assessment give rises to substantial and significant adverse acoustic impacts.

In relation to the provision of a submission to the Department there is an issue of using the Department's SEARS for the original EIS, and the Department not updating the SEAS to reflect new EPA criteria.

The NIA has used an out of date computer assessment program and has not provided the necessary material to quantify/substantiate the output of the program.

The NIA has failed to undertake a model of the existing operations or the approved operations, so to present that material for comparison.

I am unable to interrogate the acoustic predictions.

Bearing in mind the NIA identifies excessive noise and non-compliance with the incorrect noise targets, and has not provided the true background noise levels, then even if the predictions were correct the extent and magnitude of excessive noise has not been established.

The NIA has not identified the impact that residents currently experience and will experience in the future without the benefit of noise controls that should have been implemented in relation to the existing operations.

From my review of the NIA, it would appear that the NIA presents misleading and inaccurate information and has not addressed/assessed the actual acoustic impact or taken on board the responsibility of acousticians to protect the health and well-being of the community.

The review of the NIA provided by the peer reviewer does not provide technical support to each of the concluding arguments, leading to a final concluding statement that cannot be justified.

It is maintained that the NIA has been undertaken in accordance with the relevant guidelines. Further, while the NSW Environment Protection Authority (EPA) has requested further consideration of mitigation and management measures relating to noise impacts, they have not raised any specific issues with the noise modelling undertaken for the Revised Project in their submission (refer to Section 4.1 of the Submission Report).

3.0 Response to Peer Review by Martins Creek Quarry Action Group

The peer review commission by MCQAG has identified some minor technical differences in the interpretation of the NPfI and queries the technical presentation of the model input data and associated modelling methods. However, the peer review did not identify any difference in the interpretation of the NPfI or in modelling methodology that would be considered a departure from the approved methods for the assessment of industrial noise, road traffic noise or rail noise. The following section is provided to address the issues raised by the peer reviewer to help clarify the technical aspects of the NIA.

Measured Background Noise Levels (NIA Section 3.1.4)

The NIA describes results from a survey to determine background noise levels at four locations, which appear representative of receptors. Monitoring location A (ML A) at 9 Station Street is relatively close to the existing quarry and, according to the results presented for attended monitoring location ML 3 at the nearby 3 Station Street, quarry noise is audible and measurable in this area at the time of monitoring. The NIA is silent on whether noise monitoring results from ML A have been corrected for existing quarry noise as required by the Noise Policy for Industry (NPI).

This potential issue may result in a maximum change in the project intrusiveness noise levels in Table 3.4 of the NIA by up to 1 dBA during the day and evening in Noise Assessment Group (NAG) 1/2. Any changes to the NIA's results and conclusions as a result of this comment are acknowledged to be minor.

For the day-time period the monitoring at location A (ML A) satisfies the requirement of the NPfI for the assessment of background noise levels with the subject premises has been operating for a significant period of time (in excess of 10 years) and is considered a normal part of the acoustic environment.

It is agreed that reverting to the minimum policy RBL of 35 dBA, 1 dB less than the RBL for ML A in Table 3.4 of the NIA, does not change the NIA's results or conclusions.

For the evening period the subject premises was not operating.

Existing Quarry Noise Levels (NIA Section 3.1.5)

The NIA considers existing quarry noise levels when determining project noise trigger levels for closest receivers to the processing plant, which is appropriate in principle when considering noise from an existing industry.

According to Section 2.7 of the NPI, the "proponent/licensee is required to demonstrate that all feasible and reasonable noise mitigation measures are being applied before the industrial interface criteria is adopted".

The NIA does not seek to introduce an "industrial interface" as per Section 2.7 of the NPfI to establish an argument that a "reduced acoustic amenity is acceptable for existing residences co-located with existing industry", or that "that the availability of noise mitigation measures might [therefore] be limited in these circumstances". The NIA applies the provisions of Section 6 of the where it is recognised that "existing activities are established based on agreed performance requirements", "allows established industries to adapt to changes in the noise expectations of the community" and does not limit the availability of noise mitigation measures to an affected residence.

This requires, at minimum, the proposed noise mitigation measures discussed in Section 4.2 of the NIA to be included in the assessment of existing noise levels in Appendix 2 of the NIA. NPI Fact Sheet E, particularly E5 which considers a modification to an existing industry, assumes all feasible mitigation measures are already applied to the industrial development via a pollution reduction program when determining existing noise levels.

Section E5 of NPI Fact Sheet E provides an example of the application of Section 6 of the NPfI for establishing “project noise trigger levels that relate to a discrete process proposed to be introduced to existing premises”. This is linked to the third of the governing principles in Section 6.1 of the NPfI. The methodology that has been applied to the existing operation at the quarry is based on the second of the governing principles in Section 6.1 of the NPfI as discussed in Section 3 of the NIA.

It is also noted that the first two steps in the process outlined in Section 6 of the NPfI are:

- *Undertake an initial evaluation, including whether approvals/licences include noise limits and whether they are being met.*
- *Establish relevant project noise trigger levels, in accordance with the policy, to establish a benchmark level to assess the need to consider noise mitigation.*

The peer reviewer’s suggestion that “*the proposed noise mitigation measures discussed in Section 4.2 of the NIA to be included in the assessment of existing noise levels in Appendix 2 of the NIA*” is inconsistent with the process outlined in Section 6 of the NPfI.

Existing noise levels and PNTL for Year 2 have only been determined in detail (Table A2.1 and Table 5.1) with the rail loading facility operating. However, the rail loading facility would operate for a relatively small percentage of the time, therefore the reported existing noise levels and PNTL significantly overstate existing noise levels at closest receivers.

Equivalent existing noise levels and PNTL for Year 2 are required in the absence of the rail loading facility to represent operations occurring for most of the time, including mitigation measures, to present a more representative assessment of Year 2 noise levels.

When predicting the noise levels from a source at receiver locations the NPfI calls for the assessment to take into account all the important parameters identified. As a guide, Section 3.3.1 of the NPfI describes important parameters as: all noise sources related to the development, the source details including annoying characteristics, and whether noise emissions may vary depending on on-site operations. The rail loading activities are an important parameter of the quarry and, as a result, have been included in the assessment of the existing and future operation of the quarry.

Table 5.1 omits predicted noise levels that meet the adopted PNTL, which may be required by regulators to determine appropriate consent conditions. However, these are presented in Table A6.1 in Appendix 6.

Table 5.1 of the NIA provides information on residential receivers where the predicted noise levels for Year 2 could exceed the relevant day-time project noise trigger levels. The details of the predicted noise levels for Year 2 at all receivers during the day-time is provided in Appendix 6 of the NIA as noted by the peer reviewer.

RECOMMENDATION: *The NIA should report existing noise levels without the rail loading facility operating in Table A2.1 and derived PNTL in Table 5.1, including all feasible noise mitigation measures as required by NPI Section 2.7. This will provide a more representative comparison of PNTL and predicted noise levels for the transitional period represented by Year 2, rather than reporting and comparing the high reported noise levels during train loading that only occur a relatively small percentage of the time.*

As outlined above, the rail loading facility is an important parameter of the quarry noise assessment and should be included in the assessment of the existing operations. Additionally, the assessment of the existing operations establishes a baseline for the assessment of all feasible noise mitigation measures that could be applied to the development.

Noise Control Measures (NIA Section 4.2)

The NIA considers a number of noise control measures including equipment enclosures, walls, bunds, fences, replacement of noisy equipment and management measures. Sufficient details are provided for the majority of noise mitigation measures, including the noise barriers shown in Figure 4.1 and accompanying description of each barrier and enclosure. However, sufficient detail is not provided for many control measures to enable later confirmation that appropriate measures have been implemented, for example:

- **Noise attenuation of the primary surge bin:** no details are provided regarding method, materials and extent of any barriers or enclosure for this source;
- **Cladding of the secondary screen and crusher building:** no materials or minimum acoustic performance of the cladding is specified;
- **Replacement of the tertiary crusher and surge bin:** No limiting sound power levels are specified in this section, however it may be reasonable to assume the sound power levels in Table 4.1 (109 and 106 dBA and 116 and 108 dB, respectively) can be considered limiting sound power levels for these two sources;
- **Use of three smaller quieter trucks in the West Pit:** These are assumed to be Komatsu HD405 units listed in Table 4.1. Sound power levels for HD405s are listed as 107-109 dBA and 113-114 dB which are unusually low for off-road haul trucks. Evidence that such low sound power levels are possible and achievable, for new trucks and over an operating life of some years, is required;

The NPfI does not call for the NIA to provide the detailed engineering design of the proposed noise controls or the assessment of reasonableness to support the feasibility of each measure. The NIA provides information on achievable noise levels that can be used to set statutory noise limits and operational requirements for the development consent and environment protection licence. To establish the achievable noise levels, the NPfI calls for the assessment of all feasible and reasonable noise control measure. In the NIA the sound power levels for the existing equipment used at the quarry and the smaller quieter trucks are based on the actual measurement of each item of equipment. The proposed acoustic performance of the mitigation measures is based on technical specifications of materials and/or equipment, the implementation of mitigation measures at other industrial operations, the predictive modelling of barrier attenuation or a combination of this information. Monitoring on 11 January 2019 of a smaller truck operating in the quarry recorded a sound power level of 107 dBA empty and 109 dBA loaded.

- **Optimisation of pit geometry to place sources on lower benches during adverse weather conditions is proposed and has perhaps been included in the noise model (see following comment and recommendation for Section 4.3.1.1). However, the weather assessment summarised in Table A5.6 in Appendix A5 indicates wind conditions occur for approximately 61% of the time during summer days, which would limit operations to low benches for a significant percentage of the time and may result in this mitigation strategy proving to be impractical, at least in summer. It may be appropriate for further discussion of this issue in the NIA considering the potential for significant disruption to ‘normal’ operations in summer; and**

Section 8 of the ADA Report states that “Daracon commit to the review and update of the existing NMP [Noise Management Plan]. The NMP will detail the monitoring and management controls to be implemented to manage noise impacts associated with the Revised Project including ongoing implementation of the proactive and reactive management protocols in response to noise trigger levels defined in the plan”. This includes “modifying the planned quarrying activities, as appropriate, to minimise or avoid the potential noise impacts” (refer to Section 8.1.6 of the ADA Report).

- **Additional measures such as upgraded exhaust systems, stockpile orientation, reversing beepers, etc: More specific details are required for many of these measures, such as the minimum noise reduction (or maximum exhaust outlet sound power) assumed for exhaust silencers and maximum sound power level of reverse alarms, to permit appropriate consent conditions to be developed and subsequent compliance assessments to be completed.**

RECOMMENDATION: The NIA should provide more complete details of proposed mitigation measures, given the importance of these measures on the report’s conclusions, to permit appropriate consent conditions to be developed and later confirmation that all required noise reduction measures have been correctly implemented.

As outlined above, the NIA provides information on achievable noise levels that can be used to set statutory noise limits and operational requirements for development consents and environment protection licences. It is not appropriate for development consents and environment protection licences to include details on the engineering design and performance of noise control measures.

Notwithstanding this, Daracon commit to the implementation of the physical and operation noise controls as part of the Revised Project to manage the noise emissions from the quarry (refer to Section 8.1.6 of the ADA Report). As outlined above, Daracon has committed to review and update the existing NMP and implement the updated plan for the Revised Project which will include the proactive and reactive management protocols.

Operational Noise Model, Stage 1 (NIA Section 4.3.1.1 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 1, Year 2. However, many details are inconsistent which prevents a correct review of the noise model including comparison with proposed noise mitigation measures. Specifically:

- The majority of sources in Figure A4.1 in Appendix 4 (for example the 201-203, 500-559, 1300-1309, 2300-2308, 3300-3310, 5300-5308 ranges) are not mentioned in Table A4.1. Conversely, the majority of source numbers listed in Table A4.1 are not shown in Figure A4.1;
- Haul Route 1 (sources 1300-1310) is shown in Figure A4.1 in the south-western corner of the West Pit and sources 531 and 540 are shown in the western corners of the pit, despite the description and Figure 4.2 indicating Stage 1 operations are confined to the north-eastern section of the pit; and
- In Table A4.1, sources 1900-1910 operate under calm weather conditions while sources 5900-5908 operate under adverse (wind) conditions. Presumably Haul Routes 3 (3300-3310) and 4 (5300-5308) in Figure A4.1 should correspond to these sources despite the incorrect numbering, indicating operations on high benches under calm conditions and lower elevation benches under wind conditions. This is broadly consistent with the proposed mitigation measures listed in Section 4.2, however is well outside the limited operating area of the West Pit shown in Figure 4.2.

The source item numbers on Figure A4.1 are the pre sound attenuation sources. In the modelling, these were used as the benchmark for assessing the feasible noise control options including relocation of the extraction area during noise-enhancing meteorological conditions. A revised Figure A4.1 with source item numbers updated to post sound attenuation treatment is provided on **Figure 1**.

With respect to the comments from the peer reviewer regarding the location of the active quarry area, probabilistic noise modelling considers the effect noise-enhancing and very noise-enhancing meteorological conditions have on the operability of a project. The figures in Appendix 4 include sources in the West Pit and East Pit areas representative of potential extraction work areas for the year of the analysis. The conceptual stage plans in Section 4 of the NIA show the active quarry area. Depending on the prevailing meteorological conditions, the choice of extraction working area, or even the choice to work in the West Pit, is governed by the potential noise impacts on the neighbouring sensitive receiver locations.

The NIA does not present the noise-enhancing and very noise-enhancing meteorological conditions without considering the noise control measure that would be put into place. The peer reviewer suggests in the comment below that this is “potentially misleading” but it reflects Daracon’s commitment to the management of noise impacts from the quarry. The NIA provides information on achievable noise levels under noise-enhancing and very noise-enhancing meteorological conditions with the noise control measures in place. It is the commitment to manage these achievable noise limits and associated commitments on performance-based monitoring and management that would be reflected in the development consent and environment protection licence.

Operational Noise Model, Stage 2 (NIA Section 4.3.1.2 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 2, Year 6. However, detailed inspection of the noise model details in Appendix 4 indicates potentially misleading information has been presented and the noise model represents the best possible case rather than a typical or reasonable worst case. Specifically:

The detailed investigation into the operability of the Revised Project using probabilistic noise modelling considers the noise impacts from using a wide range of possible haul routes in the quarry and the standdown of individual items of equipment during noise-enhancing meteorological conditions. The stage plans in Section 4 of the NIA are conceptual and represent the likely progression of the quarry. The haul routes and active quarry areas in the stage plans represent possible operational alternatives as the exact location of the mobile equipment cannot be predicted. The tables and figures in Appendix 4 of the NIA are not exhaustive of every possible operational permutation that could be employed over the life of the quarry. To assess the operability of Stage 2 of the quarry, the conceptual quarry plan for Year 6 included 804 potential noise source locations and corresponding sound power levels. The modelling then included 100 operational strategies with varying degrees of physical and operational noise mitigation for 470 possible meteorological scenarios. The information presented in Appendix 4 for Stage 2 provides representative examples of the iterative process used in the design of the project to demonstrate that the Revised Project is operable (or not) during the range of meteorological conditions that could occur over the life of the quarry.

- Figure 4.3 indicates quarry plant are proposed to operate in much of the West Pit, except for a small, rehabilitated area in the approximate centre and in the southern section of the pit. Figure A4.2 in Appendix 4 appears at first glance to indicate modelled haul routes lead to the north-east, north and south-west sections of the pit (haul routes 4, 3 and 1, respectively), giving the impression that the model considers plant operating in all reasonable areas in Stage 2. However, Table A4.2 indicates haul routes 4 (sources 5900-5908) and 3 (sources 3900-3910) are excluded from the Stage 2 model, leaving only haul route 1 (sources 1900-1910) under wind conditions and haul route 2 (sources 2900-2908) under calm conditions included in the model. Haul route 1 runs along the toe of the southern pit wall, acoustically shielded from receivers to the south, while haul route 2 just barely enters the south-eastern corner of the West Pit and would therefore cover very little product. Figure A4.2 is therefore very misleading and must be corrected to only include sources that are actually in the Stage 2 noise model. Further, the Stage 2 noise model must include a more representative range of equipment operating locations within the West Pit;**

The peer reviewer misunderstands the intention of the information provided in Appendix 4 of the NIA. As outlined above, the stage plans in Section 4 of the NIA are conceptual and represent the likely progression of the quarry and active quarry area. The exact location of the mobile equipment cannot be predicted. However, the effect of moving the excavation area from an exposed bench, to deep within the pit or to a short-haul behind a natural landform, or shutting down the haulage fleet completely can be predicted. The choice of extraction working area will be governed by the noise impacts on the neighbouring sensitive receiver locations. The modelled scenarios in Appendix 4 provide an example of the operability of the Revised Project during the range of meteorological conditions. Appendix 8 of the NIA provides details on the probabilistic modelling approach used to help in the design of the quarry. Each of the haul routes and active quarry areas represents possible operational alternatives that could be employed during each stage of the quarry's life to manage the noise impacts from the West Pit area. In the noise models, the 1000 series sources are deep within the pit, the 4000 series sources are typically associated with running to and operating on an exposed bench and the 6000 series sources are associated with a short-haul to an extraction area behind a natural landform.

- Table A4.2 includes two locomotive sources (823, 824) not operating, and two new spur locomotive sources (855, 856) operating under all except a north-westerly wind scenario. Figure A4.2 shows all four locomotive sources, despite two not operating, which is misleading. Section 4.2 does not mention the new rail spur is not permitted or assumed to operate under north-westerly wind conditions as a noise reduction strategy, therefore the omission of these sources from this noise model scenario has not been explained;**

Sources 823 and 824 can be omitted from Figure A4.2.

It is proposed the new rail spur could operate under all meteorological conditions subject to the quarry maintaining noise levels within the approved development consent and environment protection licence conditions.

- **Figure A4.2 indicates new access road sources (8141-8155) distributed along the access road, with each of these 15 sources allocated an equal sound power level of 101.2 LAeq,15min for a total sound power of 113 dBA. This is 3 dBA higher than the listed sound power level of 110 dBA for a sales truck in Table 4.1, which is admittedly conservative. However, Figure A4.2 indicates the access road sources are bunched towards the eastern end of the road, with only 6 of the 15 sources on the new section of road and the remaining 9 sources in more shielded and remote locations within the quarry. An uneven distribution of sources may be partly justified considering different travel speeds along the route, however no such justification is included in the report and this modelling strategy omits additional noise from trucks accelerating and decelerating at the Dungog Road intersection; and**

To calculate a 15-minute equivalent (LAeq,15minute) noise level the sound energy from repetitive or cyclic activities of mobile equipment such as trucks moving along a haul road or the access road is spread along the route taken over the 15-minute period. In Appendix 2 this method has been used for each of the haul truck routes, the existing access road in Year 2 (sources 601 to 615) and the new access road (sources 8141 to 8155) once completed. Speed and activity within the cycle are both factors in the spacing of the sound energy the mobile sources.

With respect to accelerating and decelerating trucks at the Dungog Road intersection, the model does not specifically address these activities as they are part of the cyclic activities modelled. It is acknowledged that an accelerating or decelerating truck using compression brakes can generate more sound energy than a vehicle that is driven at a constant speed. As short term events, they give rise to sound exposure events that are greater than, but form part of, the LAeq noise level for the 15-minute period modelled.

It is also noted that the modelling results presented in Appendix 6 show the new access road has an impact on properties in the immediate vicinity of the Dungog Road intersection. Table A6.4 shows the noise levels would exceed the project noise trigger level (PNTL) by more than 5 dBA following the completion of the new access road to the quarry at one receiver location R025 in Years 6, 10, 15 and 20. The increase in the noise levels from the Year 2 predictions for R025 in Tables A6.1 to Years 6, 10, 15 and 20 in Table 6A.3 ranges from 9 dBA under calm conditions to 4 to 6 dBA under enhancing conditions. There is also predicted to be an increase in the noise levels due to the new access road at receivers in NAGs 5, 6 and 7. Table A6.4 indicates three of the receivers in these NAGs are in the range of ≥ 3 but ≤ 5 dBA above their respective PNTLs.

- **The sand wash plant (source 831) is shown in the north-western corner of the West Pit in Figure A4.2, however in Table A4.2 is shown as not operating. The sand wash plant is mentioned in Section 2.5.1 of the main ADA report as continuing operation in the west pit. No justification is provided for omitting potentially significant sources such as the sand wash plant, and associated mobile plant movements to and from the sand wash plant, from the Stage 2 noise model.**

The discussion on the probabilistic modelling approach in Appendix 8 provides an example of how a stepwise control strategy could result in the shut down of the sand wash plant to reduce noise emissions from the West Pit. The modelled scenarios provided in Appendix 4 include shutting down the sand wash plant as a part of the primary noise control options.

Operational Noise Model, Stage 3 (NIA Section 4.3.1.3 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 3, Year 10. A number of inconsistencies and apparent errors exist in the reported noise model input data. For example, Table A4.3 indicates west pit haul truck sources 2900-2908 and 6900-6908 have been modelled under calm and east wind conditions, respectively, however these sources cannot be found in Figure A4.3. This omission prevents a review of the noise model to confirm it adequately represents the proposed operations.

Sources 2900-2908 follow the 2300-2308 route. Sources 6900—6980 have been missed on Figure A4.3. The updated Figure A4.3 is provided in **Figure 2**. As outlined above, the tables and figures in Appendix 4 of the NIA are not exhaustive of every possible operational permutation that could be employed over the life of the quarry. To assess the operability of Stage 3 of the quarry, the conceptual quarry plan for Year 10 included 887 potential noise source locations and corresponding sound power levels. The modelling then included 142 operational strategies with varying degrees of physical and operational noise mitigation for 470 possible meteorological scenarios. The information presented in Appendix 4 of the NIA for Stage 3 provides representative examples of the iterative process used in the design of the Revised Project to assess the operability (or not) of the quarry during the range of meteorological conditions that could occur over the life of the quarry.

Note 2 above Table A6.5 in Appendix 6 mentions a pre-strip bulldozer in Year 10, however this machine is not shown in the source location figure or table. Section 5.1.2 of the NIA also mentions this machine, however it is noted to be required for an average of 3 weeks per year for pre-stripping, rather than on an ongoing basis.

The noise impacts from the bulldozer is a function of the pre-strip campaign requirements to remove vegetation and recover topsoil before excavation of the underlying rock can commence. Over the life of the quarry, pre-strip campaigns will occur in exposed locations that will require careful management to minimise adverse noise impacts. The bulldozer was modelled as an exposed noise source at natural ground level in Lot 6 DP242210. Table A6.5 in the NIA indicates operating the bulldozer in an exposed location during enhancing meteorological conditions could result in up to 30 receivers experiencing noise levels more than 5 dBA above their respective PNTLs.

The Stage 3 noise model, as for other stages, includes only a loader in the pit to load trucks with no machines to obtain previously blasted rock ready to load. As a minimum the quarry is expected to require a rock drill (mentioned in the tables but excluded from the model) and most likely an excavator or dozer to prepare the blasted material for picking up with a loader. Section 5.1.2 (on page 63) mentions an excavator accessing the resource following pre-stripping. It is therefore apparent that an excavator is required to be included in the noise model in each stage and in Table 4.1.

A bulldozer is not required in the quarry to prepare blasted material. The quarry uses a front-end loader or an excavator to load the blasted material into the haul trucks. In the modelling, the sound power model for the excavator loading hauls trucks was used interchangeable with the front-end loader loading hauls trucks. The front end loader loading hauls trucks at the quarry was monitored in 2017 with a sound power level of 114 dBA over a 3-minute period. The excavator loading haul trucks at the quarry was monitored in 2020 with a sound power level of 113 dBA over a 4.5-minute period and to 114 dBA over a 5.5-minute period. The similarity in the sound power level is due to the sound of the rock dropping into the body of the haul trucks not the sound generated by the engine of the machine. The sound power levels used in the model assume the loading activity occurs continuously over a 15-minute period. During the monitoring, both the front-end loader and the excavator were observed to have periods when they were waiting on the return of a haul truck.

Operational Noise Model, Stage 4 (NIA Section 4.3.1.4 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 4, Year 15. However, detailed inspection of the noise model details in Appendix 4 indicates potentially misleading information has been presented and the noise model represents the best possible case to many receivers rather than a typical or reasonable worst case.

Figure 4.5 indicates quarry plant are proposed to operate in much of the West Pit, except for small, rehabilitated areas. Figure A4.4 in Appendix 4 appears at first glance to indicate modelled haul routes lead to all corners of the pit, giving the impression that the model considers plant operating in all reasonable areas in Stage 4. However, Table A4.4 indicates haul route 1 (sources 1900-1910) is operating under south wind and north-west wind conditions, haul route 2 (sources 2900-2908) is operating under calm conditions and haul route 6 (6900-6908) under east wind conditions. These routes are all in the southern quarter of the pit, with no sources modelled in the northern three-quarters of the pit. This may correctly represent a brief operating period but it cannot be considered representative of the entire Stage 4 period including Years 11 to 15, particularly considering the difference in bench elevation in the northern half of the West Pit between Years 10 and 15 indicates significant quarrying in the northern area in Stage 4. A wider and more representative range of equipment operating locations is required to be assessed in Stage 4.

As outlined above, the detailed investigation into the operability of the Revised Project used probabilistic noise modelling to consider the noise impacts from a range of the haul routes and active quarry areas that represent possible operational alternatives that could be employed during each stage the quarry's life to manage the noise impacts from the West Pit area. This includes reduced activities and standdown options for individual items of equipment during noise-enhancing meteorological conditions. To assess the operability of Stage 4 of the quarry, the conceptual quarry plan for Year 15 included 885 potential noise source locations and corresponding sound power levels. The modelling then included 141 operational strategies with varying degrees of physical and operational noise mitigation for 470 possible meteorological scenarios. The information presented in Appendix 4 for Stage 4 provides representative examples of the iterative process used in the design of the Revised Project to assess the operability (or not) of the quarry during the range of meteorological conditions that could occur over the life of the quarry.

Operational Noise Model, Stage 5 (NIA Section 4.3.1.5 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 5, Year 20. However, detailed inspection of the noise model details in Appendix 4 indicates potentially misleading information has been presented and the noise model represents the best possible case to many receivers rather than a typical or reasonable worst case. Specifically:

- Figure 4.6 indicates quarry plant are proposed to operate in much of the West Pit, except for small rehabilitated areas. Figure A4.5 in Appendix 4 appears at first glance to indicate modelled haul routes lead to all corners of the pit, giving the impression that the model considers plant operating in all reasonable areas in Stage 4. However, Table A4.5 indicates haul route 1 (sources 1900-1910) is operating under south wind and north-west wind conditions, haul route 2 (sources 2900-2908) is operating under calm conditions and haul route 6 (6900-6908) under east wind conditions, identical to Stage 4. These routes are all in the southern quarter of the pit, with no sources modelled in the northern three-quarters of the pit;

To assess the operability of Stage 5 of the quarry, the conceptual quarry plan for Year 20 included 885 potential noise source locations and corresponding sound power levels. The modelling then included 140 operational strategies with varying degrees of physical and operational noise mitigation for 470 possible meteorological scenarios. The information presented in Appendix 4 for Stage 5 provides representative examples of the iterative process used in the design of the Revised Project to assess the operability (or not) of the quarry during the range of meteorological conditions that could occur over the life of the quarry.

- Haul Route 6 appears identical in Figures A4.4 and A4.5, for Stages 4 and 5. In addition, the listed MGA coordinates and elevations for sources 6900-6908 in Tables A4.4 and A4.5 are identical, despite five years of quarrying between the two stage plans. Either the quarry floor must significantly reduce elevation in this 5 year period or noise sources must be modelled in other parts of the pit, or more realistically both. This comparison indicates the data presented in Tables A4.4 and A4.5, and by implication all similar tables, is unreliable and must be corrected. It also indicates the noise model does not adequately represent each assessed stage.**

The predictive noise models of the West Pit extraction area investigate the operability of the quarry plans as presented in Section 4 of the NIA. The quarry plans are conceptual and represent the likely progression of the quarry. The exact location of the mobile equipment cannot be predicted. However, the effect of moving the excavation area from an exposed bench (4000 series sources) to deep within the pit (1000 series sources) or to a short-haul behind a natural landform (6000 series sources), or shutting down the haulage fleet completely can be predicted. These operational choices are not limited to any one year of operations but can be employed over the life of the quarry. Each stage of the conceptual quarry plans has been modelled in this way. The result is a series of potential operational strategies that could be used to manage the noise impacts. Examination of the noise contours in Appendix 6 of the NIA demonstrates the West pit can be managed through the implementation of appropriate operational strategies. This approach is consistent with the requirements of the NPfI which states that for “new developments and redevelopments, mitigation strategies should be considered in a hierarchical approach”. The operational strategies that have been used to address the first two points of the hierarchy of controls in Section 3.1 of the NPfI and included in the noise models of each stage of the conceptual quarry plans are provided in Section 6 of NIA.

Operational Noise Model, Stage 6 (NIA Section 4.3.1.6 and Appendix 4)

The NIA includes a description and figures showing some details of the noise model constructed to represent Stage 6, Year 25, which is the final year of operation for the project. No noise model was constructed for Stage 6 despite 5 years of quarrying operations from Years 20 to 25. This may be appropriate given the West Pit is not expanding laterally in this period and, if anything, would therefore be deeper and presumably quieter than in Stage 5, however omission of this stage from the noise model is not justified in the NIA.

Section 4.3.1.6 of the NIA states that in Stage 6 (Years 21 to 25) quarrying will be undertaken in the East Pit only, both progressing deeper and further south. This will include areas that were previously used for processing and product stockpiling (refer to Figure 4.7 of the NIA).

Operational Noise Model, Stages 1 to 6 (NIA Section 4.3.1 and Appendix 4)

A number of recommendations arising from the above analysis of Stages 1 to 6 have been consolidated in this section, as in general the recommendations apply to all stages.

RECOMMENDATION: The NIA should provide correct source location figures and tables for all stages, ensuring the figures are consistent with the tables and reflect the actual noise model input data used to calculate predicted noise levels. Sources not actually included in the noise model in each stage must be removed from each figure and table to avoid misleading regulators and the public regarding the number of sources and spread of operating areas considered in each stage. Sources that only operate for specific sets of weather conditions or other limited conditions must be clearly documented and justified, ideally in the figures as well as the tables to avoid including misleading figures in the NIA.

As outlined above two figures are provided to correct the Stage 1 source numbers and add the 6900 to 6980 series sources to the Stage 3 figure.

The NIA must include all significant sources in the noise model, in all assessed stages, to correctly calculate predicted noise levels from the project. Omitted sources, including but not limited to the rock drill, an excavator or dozer required for winning product, the sand washing plant and associated mobile plant movements, must be included or their absence must be clearly documented and justified in the NIA.

Sources distributed along haul routes must be appropriately distributed considering variations in source speed and elevation changes. Apparently inappropriate source distribution along a route must be justified.

All proposed operating areas must be represented in the noise model, although not necessarily in each stage. If, for example, the northern section of a pit is represented in one stage and the southern section of the same pit in another stage, this choice must be discussed and justified considering the likely effect on calculated received noise levels to receivers in all directions from the pit.

Pit operating areas reflected in the noise model must be consistent with the operating areas shown in Figures 4.2 to 4.7 and in the main ADA and other (non-acoustic) technical reports for each stage.

As outlined above, the iterative design process for the quarry used predictive noise modelling to assess all feasible noise control measures. As an example of this process, the conceptual quarry plan for Stage 3 modelled as Year 10 included 887 potential noise sources locations and corresponding sound power levels. The modelling then included 142 operational strategies with varying degrees of physical and operational noise mitigation for 470 possible meteorological scenarios. The operability of the quarry was then assessed at 150 potentially sensitive receivers. The operability (or not) of the quarry through the implementation of appropriate operational strategies was then based on the interrogation/optimisation of the 822x149x470x150 dataset. As outlined above, the information in Appendix 4 provides representative examples of the iterative process used in the design of the Revised Project. As noted above, examination of the noise contours in Appendix 6 of the NIA demonstrates the West pit can be managed through the implementation of appropriate operational strategies.

Modelled Plant and Equipment (NIA Section 4.3.2)

Table 4.1 presents sound power levels included in the noise model. The majority of the listed sound power levels appear reasonable, however some appear unusually and optimistically low. Specifically:

- **The tertiary crusher sound power level of 109 dBA appears low, however it is acknowledged that this is a proposed new, low noise unit. It may be appropriate to include evidence for the low adopted sound power level, such as manufacturer's noise measurement data or details of noise measurement results at various distances from the machine to justify this low value;**

The existing tertiary crushing plant includes a surge bin and bypass system above the tertiary crusher. The combined tertiary crushing plant and surge bin was monitored with a sound power of 112 dBA. The Revised Project includes the replacement of the existing tertiary crushing plant with a quieter tertiary crusher and that does not require a surge bin. For this reason, the adopted sound power level of 109 dBA for the tertiary crushing plant is considered reasonable.

- **The primary crusher and hopper sound power level of 112 dBA is 10 dBA lower than the unenclosed east side of the secondary crusher and primary screen, which appears unlikely and requires further information and justification; and**

The sound power of the primary crusher was monitored at 112 dBA/120 dBZ on 15/11/2017. The difference between the A-weighting and linear Z-weighting indicates the presence of a significant low-frequency component to the noise source.

The sound power primary screen/secondary crusher building was also monitored on 15/11/2017. The sound power analysis of the primary screen/secondary crusher building identified differences between the sound power emanating from the north, east, south and west facing walls and openings. As an example, the sound power of the west facing opening was determined to be 121 dBA/123 dBZ based on a sound power per square metre 102 dBA/103 dBZ at the portal opening. As noted by the peer reviewer the A-weighted sound power of components of the primary screen/secondary crusher building are louder than the primary crusher, as was observed at the time of monitoring. It is also noted that the difference between the A-weighting and linear Z-weighting indicates the primary screen/secondary crusher building does not include significant low-frequency components like the primary crusher.

- **Haul truck (Komatsu HD405) sound power levels of 107-109 dBA are lower than a standard road truck (listed as 112 dBA in the table), which is unlikely to be correct with or without upgraded exhaust silencers. Modelled sound power levels for the haul trucks must be corrected or clearly justified.**

The existing haul trucks were monitored with sound power levels of 117 to 119 dBA on the haul road empty and 114 to 117 dBA loaded depending on the grade of the haul road. The Revised Project includes the replacement of the existing haul trucks with three new smaller quieter trucks. Monitoring on 11/1/2019 of a smaller quieter truck operating in the quarry recorded a sound power level of 107 dBA empty and 109 dBA loaded.

Based on the above discussion of the modelled sound power level, no additional modelling is required.

RECOMMENDATION: Include representative and achievable equipment sound power levels in the noise model or justify any levels that are lower than standard sources of each type. Ensure the NIA includes recommendations regarding modifications, maintenance or other measures to achieve and maintain the low adopted sound power levels for the life of the project for each low-noise source. The NIA must consider and discuss all feasible and reasonable mitigation measures, including justification for measures considered but not included. This is required by the NPI due to the predicted exceedances of noise criteria at some receivers presented in later sections of the report.

The NPfI notes it is the responsibility of the proponent to demonstrate the selected mitigation measures are appropriate and to justify any mitigation measures proposed (or disregarded) as part of a noise impact assessment. The list of mitigation measures adopted is discussed in the NIA and the ADA Report. The iterative design process has assessed and adopted a range of preferred options that have resulted in lesser options being discarded. These are summarised as follows:

Item	Adopted	Discarded
Noise barrier along the southern side of the East Pit processing area	<ul style="list-style-type: none"> - 8 noise metre barrier between the primary/secondary/tertiary processing area and existing access road - Augmentation of the natural landform to supplement the 8 metre noise barrier 	<ul style="list-style-type: none"> - Earth noise berm on the southern side of the existing access road - 5 noise metre barrier between the primary/secondary/tertiary processing area and existing access road - No noise barrier
Noise barrier along the southern side of the southern stockpile area	<ul style="list-style-type: none"> - 3 metre noise barrier 	<ul style="list-style-type: none"> - No noise barrier
Noise barrier along the haul road between the West Pit and East Pit	<ul style="list-style-type: none"> - 4 metre noise barrier integrated into the raw material pad and primary crusher hopper 	<ul style="list-style-type: none"> - No noise barrier
Attenuation of the primary crusher	<ul style="list-style-type: none"> - Noise barrier adjacent to the primary crusher 	<ul style="list-style-type: none"> - Fully enclosing the primary crusher as it would restrict maintenance access
Attenuation of the primary surge bin	<ul style="list-style-type: none"> - Clad the surge bin, this may also require replacement of the surge bin 	<ul style="list-style-type: none"> - Change the conveyor alignment - Use a primary stockpile and reclaim system - No attenuation
Attenuation of the primary screen/secondary crusher building	<ul style="list-style-type: none"> - Augmentation of the existing wall and roof cladding with a sound attenuation lining 	<ul style="list-style-type: none"> - Fully enclosing the north and east faces as it would restrict natural lighting and maintenance access - No attenuation
Tertiary crushing plant	<ul style="list-style-type: none"> - Replace with a new attenuated crusher that does not require a surge bin 	<ul style="list-style-type: none"> - Attenuation of the existing tertiary crusher surge bin and bypass system - No attenuation
Rock haul trucks	<ul style="list-style-type: none"> - Replace with an increased number of smaller quieter trucks that also facilitate 'turn-down' in the extraction rate by not running all trucks 	<ul style="list-style-type: none"> - Attenuation of the existing trucks - Do nothing
In-pit mobile crushing plant	<ul style="list-style-type: none"> - Remove from project design 	<ul style="list-style-type: none"> - Keep as a production option

Item	Adopted	Discarded
Rail loading	<ul style="list-style-type: none"> - Extend the rail spur into the northern section of the East Pit processing area where it will be approximately 10metre below the floor level of the existing East Pit processing area/stockpiles - Attenuate the existing rail loading facility for Years 1 to 4. This includes adding a noise barrier along the rail siding opposite the residence in Station Street so locomotives (assessed as industrial sources) could use the line during wagon loading 	<ul style="list-style-type: none"> - Replace/attenuate the existing rail loading facility with a new or re-engineered fully attenuate facility for the life of the quarry. This included adding a noise barrier along the full length of the rail siding opposite the residence in Station Street - Attenuate and relocate the existing rail loading facility and conveyor system further north along the existing rail spur - Cease rail loading
Truck dispatch	<ul style="list-style-type: none"> - Allow road trucks to return to the quarry and be loaded between 6:00 pm to 7:00 pm thereby facilitating a commitment to limit the commencement of road haulage from 7.00 am 	<ul style="list-style-type: none"> - Commence road haulage at 6:00 am
Road truck access MCQ	<ul style="list-style-type: none"> - Construction of a new access road to Dungog Road 	<ul style="list-style-type: none"> - Upgrade Station Steet - Access the quarry via Vogules Road
Production rate and truck dispatch rates	<ul style="list-style-type: none"> - Cap the truck dispatch rate to 500,000 tpa at a maximum of 140 laden trucks dispatched per day and no more than 20 laden trucks dispatched per hour 	<ul style="list-style-type: none"> - A range of alternate production rates and dispatch rates were investigated
West Pit extraction	<ul style="list-style-type: none"> - Review of production planning and sequencing to enable the incorporation of operational controls based on operability assessment using probabilistic noise modelling 	<ul style="list-style-type: none"> - Only model meteorological conditions identified using the NPfI's "detailed method" that overlooks a range of noise-enhancing conditions - Extraction in the East Pit on the northern side of the proposed rail spur extension

Construction Noise Model (NIA Section 4.4)

Table 4.3 presents sound power levels (source noise levels) included in the construction noise model while Table A6.9 in Appendix 6 presents predicted construction noise levels. It is acknowledged that receivers are generally less sensitive to construction noise due to the relatively short-term nature of such noise. However, a detailed description of the construction noise model, including a figure modelled showing source locations, could not be found in the NIA to permit a detailed review of the construction noise model.

RECOMMENDATION: Include sufficient details of the construction noise model, including a source location figure and indicating of the duration of each construction activity, to enable a review of the construction noise model.

The modelling of the construction activities in the NIA identifies 64 properties and 31 properties that could respectively experience construction noise above the management levels of 45 dBA during the construction of the new access road and noise mitigation measures in and around the East Pit processing plant area. To address these potential impacts, Section 6 of the NIA states a Construction Noise Management Plan would be prepared and implemented in accordance with the requirements of the DECC *Interim Construction Noise Guideline*.

Operational Noise for Year 2 (NIA Section 5.1.1)

Table 5.1 of the NIA presents predicted exceedances of relevant PNTLs at receivers with and without rail loading in Year 2, with noise levels at all receivers listed in Table A6.1 in Appendix 6.

Predicted noise levels exceed 50 LAeq,15min at the three closest receivers on Station Street and are in the range 45 to 50 LAeq,15min at the majority of Station Street, Grace Avenue and Cory Street receivers.

Predicted noise levels at the worst affected receivers would normally be considered unacceptable for a greenfield development when compared to measured background noise levels in the absence of the quarry, however the quarry is acknowledged to be an existing development with more limited options for noise control. Noise levels in later years, including various noise control measures discussed in Section 4.2, are lower as shown in Table A6.3.

All predicted noise levels should be revised and reassessed when the errors and omissions in the noise model discussed in the previous sections of this Review are corrected. Whether the corrected noise levels in Year 2 are acceptable, for a period of up to 4 years as noise control measures are progressively implemented, is a matter for the affected residents and regulators to consider.

RECOMMENDATION: Reassess noise levels in Year 2 when the errors and omissions in the noise model, as recommended previously, are corrected.

As outlined above, the predictive noise models for Year 2 includes the existing rail loading facility as an operational source is in accordance with the NPfI's guidelines for modelling an existing operation. This technical argument from the peer reviewer that this is an error is not supported as it is inconsistent with the requirement of the NPfI. Additionally, the argument that the omission of all feasible noise mitigation measures in the Year 2 model of the existing operations is not supported as it is inconsistent with the requirement of the NPfI.

Operational Noise for Years 6, 10, 15 and 20 (NIA Section 5.1.2)

RECOMMENDATION: Reassess noise levels in Years 6, 10, 15 and 20 when the errors and omissions in the noise model, as discussed previously in this Review, are corrected for each assessed year.

As outlined above, the detailed investigation into the operability of Years 6, 10, 15 and 20 of the Revised Project used probabilistic noise modelling to consider the noise impacts from a range of the haul routes and active quarry areas that represent possible operational alternatives that could be employed during each stage the quarry's life to manage the noise impacts from the West Pit area. This includes reduced activities and standdown options for individual items of equipment during noise-enhancing meteorological conditions. The presentation of the data in the tables and figures in Appendix 4 has been incorrectly interpreted as "error and omissions". As aforementioned, the tables and figures in Appendix 4 are not exhaustive of every possible operational permutation that could be employed over the life of the quarry but provide representative examples of the iterative process used in the design of the Revised Project. Appendix 8 discusses the use of probabilistic modelling to investigate the noise impact from different operating strategies and control options using up to 149 different operating scenarios for each of the quarry stages modelled.

Evening Shoulder Period (NIA Section 5.2)

Table 5.4 of the NIA summarises the predicted exceedances of the PNTLs due to loading trucks during the period 6 pm to 7 pm for next-day dispatch. Noise levels in the range 41 to 44 LAeq,15min are predicted at the five closest Station Street receivers, during Year 2 before the proposed access road direct to Dungog Road is constructed. Levels in the range 38 to 42 LAeq,15min are predicted at the four closest Dungog Road receivers after the access road is constructed, due primarily to truck movements on the access road.

No discussion of feasible and reasonable noise mitigation measures is included in this section of the NIA, as is required by the NPI, particularly considering truck movements on the proposed access road are not part of existing quarry operations and are therefore expected to meet relevant PNTL or justify any residual exceedances.

RECOMMENDATION: Include an assessment of all feasible and reasonable noise mitigation measures for evening shoulder period truck movements on the proposed access road, acknowledging this component of the project is not part of existing quarry operations, to reduce or justify the predicted noise levels and residual exceedances of PNTLs.

The return and loading of road trucks during the day/evening shoulder period has been assessed as new development. The activity is, of itself, is a feasible and reasonable noise mitigation measure designed to reduce the noise impacts prior to 7am the following morning. The noise impacts from the truck loading will be mitigated by the physical changes proposed for the East Pit process areas and the expansion of the processing area to the north to accommodate the rail spur expansion. No additional control specific to this activity have been proposed.

Evening and Night Predicted Noise Levels (NIA Section 5.3.1, Section 7 and Table 7.3)

Table 5.5 of the NIA summarises the predicted exceedances of the PNTLs due to loading trains during the evening and night on the proposed extended rail spur. Noise levels of up to 44 LAeq,15min at the closest Station Street receiver are predicted at night which is 9 dBA above the PNTL of 35 LAeq,15min at this receiver. The NIA states the predicted impacts would be confirmed after the rail spur is constructed by measuring noise levels from train loading and additional noise mitigation measures would be considered if measured noise levels are higher than predicted. However, this approach is not likely to be acceptable for the following reasons:

- The extended rail spur is not a component of the existing quarry and cannot be assessed to the alternative (higher) PNTLs applied to existing industrial developments;

This point is incorrect as the rail loading facilities are part of the existing operations and the extension to the rail spur represents a feasible and reasonable mitigation measure that can be applied to the existing operation. Notwithstanding this, the evening and night time predicted noise impacts from the proposed wagon loading on the rail spur extension has been assessed as new development.

- The predicted exceedance of up to 9 dBA above the PNTL is therefore considered very significant for a new component of the project;
- The NIA has not demonstrated that all feasible and reasonable mitigation measures for the rail spur and associated train loading have been considered; and
- The noise model is unlikely to overstate predicted noise levels by 9 dBA, therefore noise from train loading at night is unlikely to meet the PNTLs at all residences. Additional noise control options are likely to be more limited after construction of the extended spur.

Additional noise control options therefore must be considered in the NIA, not delayed until after construction of the extended rail spur.

RECOMMENDATION: Consider all feasible and reasonable mitigation measures for the proposed extended rail spur and associated train loading activities in the NIA and justify any remaining exceedances of the PNTLs, rather than delay this assessment until after construction of the rail spur when more limited noise control options will be available.

The residual impacts for the evening and night-time operations based on the predicted indicative noise impacts in Table 5.5 and the VLAMP characterisation of the impacts are presented in Section 7 of the NIA.

Train Passby Noise (NIA Section 5.5)

Chart 5.1 presents measured noise levels at 3 Station Street due to a train and wagons entering the existing rail spur. Table 5.7 of the NIA indicates train noise would not exceed relevant noise criteria during the day and is unlikely to exceed the evening noise criteria, however is expected to exceed the recommended acceptable noise levels during the night at all Station Street receivers.

The NIA does not propose mitigation measures that appear to be practical and cost effective, for example a fence or wall along the southern side of the rail spur directly opposite Station Street receivers.

RECOMMENDATION: Consider and assess noise mitigation measures, at least including a wall or fence along the southern side of the rail spur opposite Station Street receivers, to reduce train passby noise from the rail spur to these receivers.

This issue has also been raised by the EPA. Please refer to Section 4.1 of the Submissions Report for details on the mitigation of noise from the locomotive to receivers in Station Street.

VIBRATION

Ground vibration from construction activities and heavy vehicles has not been considered in the ADA and RTS, or in the noise or blasting technical reports. While these issues are unlikely to be significant for this project, it may be appropriate to include a brief assessment of each issue in the NIA. A brief review indicates the greatest potential for vibration impacts may be due to any rock breaking required to construct the proposed access road, which has not been considered in the NIA.

Following approval of the Revised Project, a Construction Noise and Vibration Management Plan will be prepared that addresses ground vibration from construction activities.

CONCLUSION

This acoustic review of the ADA and RTS indicates a number of errors or omissions in the software-based noise model used to calculate predicted noise levels reported in the NIA. The identified issues with the noise model, including unusually low sound power levels for a few sources, significant areas of the project site not represented in the model and significant sources omitted, are likely to affect predicted noise levels at a significant percentage of assessed receivers. The model must therefore be revised and predicted noise levels recalculated to present a comprehensive and correct assessment report.

The peer reviewer's argument that there are errors and omissions in the software-based noise models relies on technical judgments that are inconsistent with the requirement of the NPfI and a misunderstanding of the operability assessment using probabilistic noise modelling. As outlined above, the detailed investigation into the operability of the Revised Project used probabilistic noise modelling to consider the noise impacts from a wide range of possible haul routes and the standdown of individual items of equipment during noise-enhancing meteorological conditions. Additionally, the presentation of the data in the tables and figures in Appendix 4 has been incorrectly interpreted as containing "errors and omissions". As aforementioned, the tables and figures in Appendix 4 are not exhaustive of every possible operational permutation that could be employed over the life of the quarry but provide representative examples of the iterative process used in the design of the Revised Project. The modelling presented in the NIA demonstrates there are operating scenarios that comply with the proposed achievable noise levels for the quarry.

In addition, the NIA has omitted an assessment of feasible and reasonable mitigation measures for a number of noise sources as detailed in various recommendations throughout this review. The result of these omissions in the NIA, if not corrected, is likely to be unnecessarily high environmental noise levels at some of the worst affected receivers.

As stated in the Original Project review, it is clear that some aspects of the Revised Project have the potential to provide environmental benefits to some residents, particularly those on Station Street Martins Creek who are currently exposed to very significant noise from the processing plant, truck and train movements.

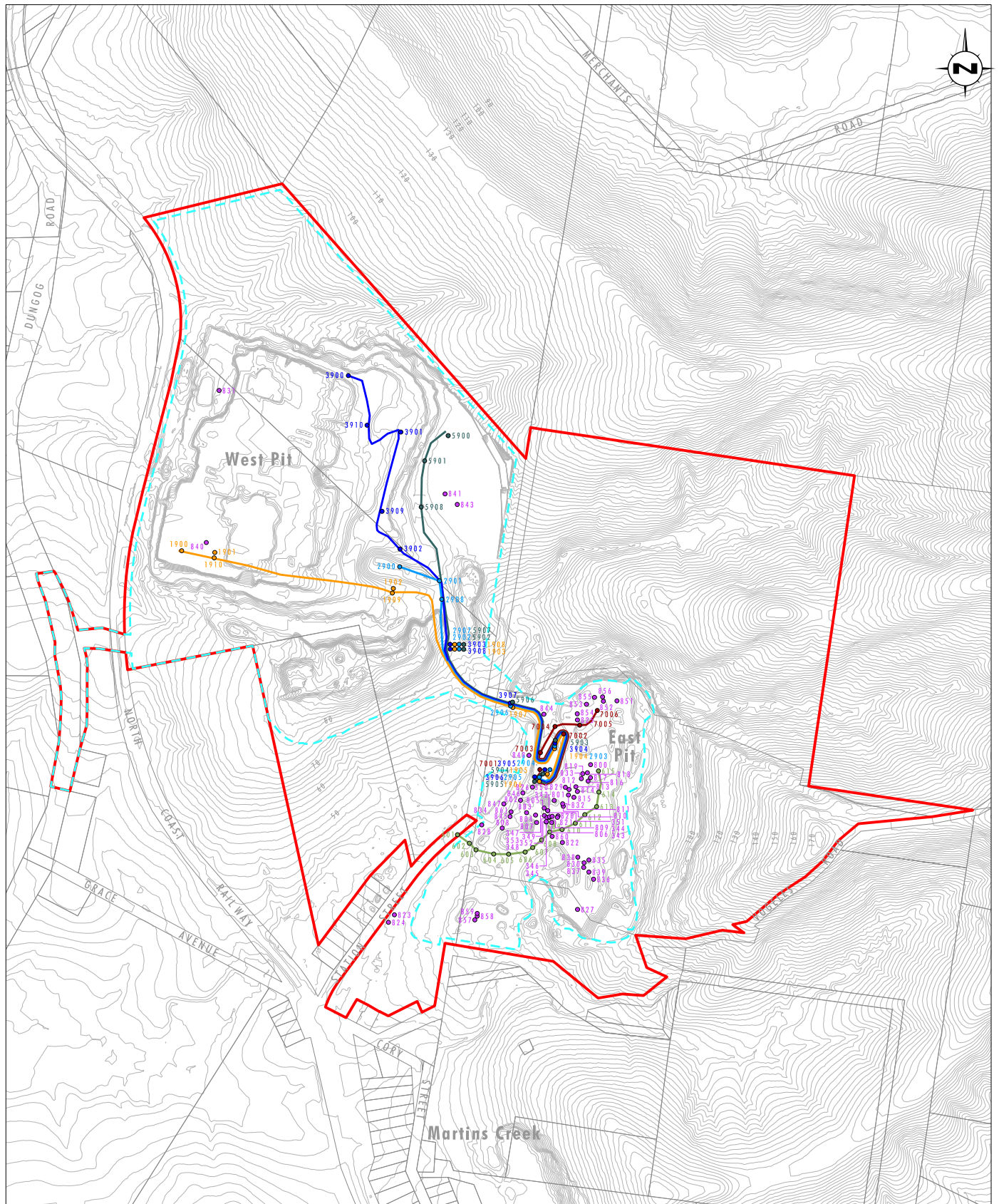
However, the potential benefits for these residents would be offset by the proposal to increase annual production and load a greater number of trains at any time of the day or night.

Receivers located generally west and north of the quarry should expect a progressive increase in noise and blasting impacts (relative to currently approved production levels) as production increases to the proposed level of 1.1 Mtpa. Receivers located along the primary haul route from Dungog Road through Paterson and Bolwarra should expect a significant increase in traffic noise levels and other traffic-related impacts compared to currently approved traffic levels.

Section 7 of the NIA provides an assessment of the residual noise impacts with all feasible and reasonable source and pathway noise mitigation measures in place. The VLAMP (*Voluntary Land Acquisition and Mitigation Policy*) characterisation of the residual noise impacts identifies properties that are potentially subject to significant, moderate and marginal noise impacts.

The VLAMP provides guidance on the approach to managing residual noise impacts. The ADA Report notes Daracon will continue to consult with potentially impacted residents regarding the management of noise associated with the Revised Project in accordance with the requirements of the VLAMP. The ADA Report also provides a detailed discussion on the strategic need and justification for the Revised Project.

With respect to road traffic noise along the primary haul route from Dungog Road through Paterson and Bolwarra, the claim of “a significant increase in traffic noise levels and other traffic-related impacts “ has not been substantiated by the peer reviewer. The traffic noise impact assessment has been completed in accordance with the RNP. The noise impacts are presented and discussed in Section 5 of the NIA. The addition of quarry trucks does not result in an exceedance of the RNP criteria where it was not already calculated to exceed the criteria with the baseline traffic levels (i.e. no quarry trucks) except at Nearest Receiver 10. Where the RNP criteria are already exceeded the predicted increase in road traffic noise due to the quarry trucks is predicted to be less than 2dB. The increase in predicted noise levels at Nearest Receiver 10 due to the addition of quarry trucks is 0.9dB. The RNP states that noise level increases of up to 2 dB are considered barely perceptible to the average person.



Data Source: Daracon (2020)
Note: Contour Interval 2m

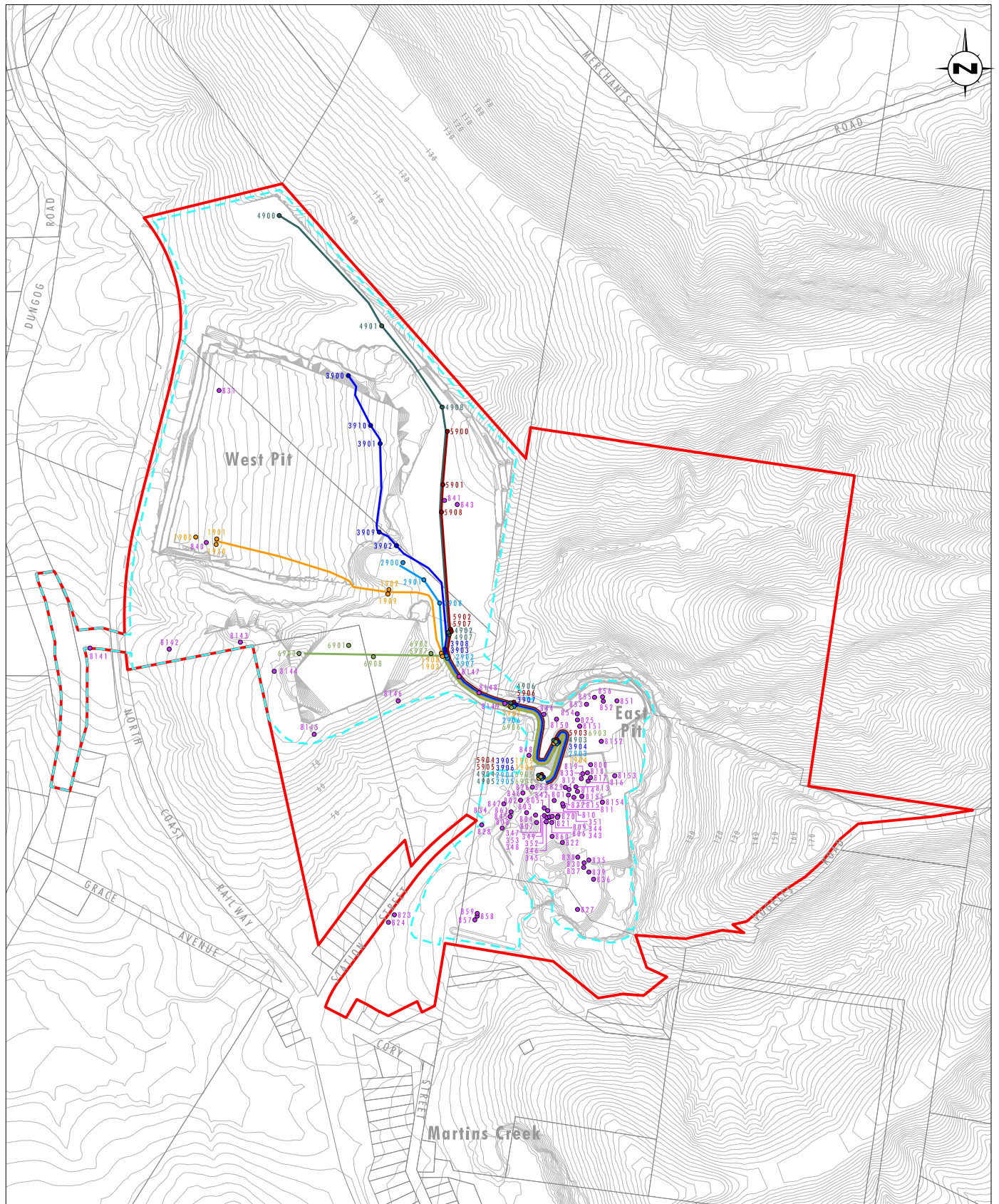
0 100 250 500m
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Legend

- ▬ Project Area
- ▬ Proposed Disturbance Area
- ▬ Haul Route 1
- ▬ Haul Route 2
- ▬ Haul Route 3
- ▬ Haul Route 4
- ▬ Haul Route 5
- Existing Access Road
- Ancillary Locations

FIGURE 1

Year 2
Noise Model
Source Locations



Data Source: Daracon (2020)
Note: Contour Interval 2m

0 100 250 500m
1:10 000

Legend

- ▬ Project Area
- ▬ Proposed Disturbance Area
- Haul Route 1
- Haul Route 2
- Haul Route 3
- Haul Route 4
- Haul Route 5
- Haul Route 6
- Ancillary Locations

FIGURE 2
Year 10
Noise Model
Source Locations



