Multiquip Quarries

ABN: 44 101 930 714

Ardmore Park Quarry
via Bungonia, NSW

Response to Submissions

for

PA 07_0155 MOD3

Prepared by:

R.W. CORKERY & CO. PTY. LIMITED

1 November 2018

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Prepared for:

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TABLES

PLATES

LIST OF ACRONYMS

AADT	Annual Average Daily Traffic
AES	Aquila Ecological Surveys
AHD	Australian Height Datum
AHMP	Aboriginal Heritage Management Plan
AQIA	Air Quality Impact Assessment
ARA	Appropriate Regulatory Authority
BEPL	Benbow Environmental Pty Ltd
BPA	Bungonia Progress Association
CHMA	Cultural Heritage Management Australia
DoI	Department of Industry
DPE	Department of Planning & Environment
ENM	Excavated Natural Material
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
ESCP	Erosion and Sediment Control Plan
FBA	Framework for Biodiversity Assessment
FWD	Falling Weight Deflectometer
GMC	Goulburn Mulwaree Council
GML	General Mass Limit
IEA	Independent Environmental Audit
KMA	Kevin Mills & Associates
LCC	Larry Cook Consulting Pty Ltd
LoS	Level of Service
NHVR	National Heavy Vehicle Regulator
NIA	Noise Impact Assessment
OEH	NSW Office of Environment & Heritage

PA	Project Approval
PBS	Performance Based Scheme
PMS	Pavement Management Services
POEO Act	Protection of the Environment Operations Act 1997
PRP	Pollution Reduction Program
RMS	Roads and Maritime Services
RSA	Road Safety Audit
RTS	Response to Submissions
SIA	Social Impact Assessment
SSIA	Supplementary Social Impact Assessment
SWL	sound power level
TARP	Trigger Action Response Plan
TBA	Trevor Brown & Associates
TUP	Transport and Urban Planning
VENM	Virgin Excavated Natural Material
VPA	Voluntary Planning Agreement
WMP	Water Management Plan

1. INTRODUCTION

Following the public exhibition of an *Environmental Assessment* supporting an application made by Multiquip Quarries ("the Applicant") under the *Environmental Planning & Assessment Act 1979* (EP&A Act) to modify Project Approval (PA) 07_0155, submissions from 10 government agencies along with 49 public submissions[1] were received by the Department of Planning & Environment (DPE).

Following receipt and review of the government agency and public submissions, various reviews of the existing information and additional assessments were commissioned by the Applicant to assist in responding to the requests for more information or concerns raised. Section 2 presents a summary of this additional information compilation and assessments, with the referenced appendices presenting the full reports or documentation.

A number of the submissions, including those of the DPE and other government agencies, raised concerns over the compliance record of Quarry operations. Section 3 provides a review of the compliance history of the Applicant, reviews the compliance related issues raised in the submissions and describes the improvements in management implemented or proposed to ensure improved performance with respect to compliance.

The government agency submissions, which can be reviewed on the Major Projects Assessments section of the Department of Planning & Environment (DPE) website (http://majorprojects.planning.nsw.gov.au/page/development-categories/mining--petroleum---extractive-industries/extractive-industries/?action=view_job&job_id=9026), were forwarded to the Applicant along with a summary of the key issues to be addressed by the DPE. Each of the government agency submissions has been reviewed and Section 4 addresses the issues raised in each.

Each of the public submissions was downloaded from the Major Projects Assessments section of the DPE website, printed and reviewed. The specific objections or requests for further information within each submission were then identified so these could be categorised and addressed in a systematic fashion as part of this Response to Submissions.

In total, the issues raised were categorised into 65 individual issues within 23 broader categories. While it is noted that there is often some variation within the issues as categorised, we are confident that amongst the 65 specific issues raised, the concerns and objections of the public have been appropriately identified and addressed. **Appendix 1** provides a copy of a matrix prepared to categorise the issues raised in each of the 49 public submissions.

[1] Three public submissions were received outside the nominated public exhibition period, however, have been included as assessed as part of this Response to Submissions.

2. ADDITIONAL DESCRIPTIONS, INVESTIGATIONS AND OTHER INFORMATION

2.1 INTRODUCTION

In preparing this RTS, the Applicant has identified some information contained in the *Environmental Assessment* that could have been presented in more detail to better illustrate the potential impacts of the proposed modification and approach to management of some specific issues. Additional information on local (pre-Quarry) traffic levels, indicative transport scheduling and the Performance Based Scheme for operation of larger heavy vehicles is provided in Sections 2.2 to 2.4 respectively (see also **Appendix 2**).

Additional investigations and assessments have also been undertaken to address specific matters identified in one, or multiple submissions. The following additional or supplementary assessments have been completed.

- A Remaining Life Analysis of the roads of the product delivery route has been prepared by Pavement Management Services Pty Ltd (refer to Section 2.5 and **Appendix 3**).
- Supplementary assessments of the product delivery route have been prepared by:
  - Bridge Design to assess the structural capacity of culvert and bridge crossing for General Mass Limit vehicles (refer to Section 2.6.1 and **Appendix 4**); and
  - Transport & Urban Planning to confirm the intersections provide satisfactory dimensions and performance for the proposed truck types and volumes (refer to Sections 2.6.2 and 2.6.3, **Appendix 5** and **Appendix 6**).
- A Construction Phase Road Safety Audit (RSA) of the roads of the product delivery route was commissioned by the Applicant, managed by Goulburn Mulwaree Council and undertaken by Rigore Engineering Services (refer to Section 2.7.1 and **Appendix 7**).
- A Post Construction Phase RSA of the roads of the product delivery route was commissioned by the Applicant, managed by Goulburn Mulwaree Council and undertaken by Transport & Urban Planning (refer to Section 2.7.2 and **Appendix 8**).
- A hydrogeological investigation of spring flow reductions on the "Inverary Park" property which adjoins the Quarry Site to the east has been undertaken by Larry Cook Consulting Pty Ltd (refer to Section 2.8 and **Appendix 9**).
- A field survey and assessment of the potential for Aboriginal sites within the proposed extraction area extension and southern sand resource area has been undertaken by OzArk Environmental and Heritage Management Pty Limited (refer to Section 2.9 and **Appendix 10**).
- A supplementary biodiversity field survey has been undertaken to satisfy the requirements of the Framework for Biodiversity Assessment by Aquila Ecological Surveys (refer to Section 2.10 and **Appendix 11**).

- Additional noise monitoring reports prepared by Benbow Environmental Pty Ltd, and responses to the noise monitoring data and assessment prepared by the EPA (refer to Section 2.11.1 and **Appendices 12** and **13**).
- A revised Noise Impact Assessment prepared by VMS Australia Pty Ltd (refer to Section 2.11.2 and **Appendix 14**).

In addition to the investigations and assessments noted above, and in response to the concerns raised in many of the public submissions in relation to impacts on local amenity and community, the following supplementary documentation has been prepared.

- Proposed terms for a Voluntary Planning Agreement (VPA), to replace the Section 94 contributions to Council required by Condition 13 of Schedule 2, have been prepared and are presented and discussed in Section 2.12. It is noted that the terms of the VPA have been discussed with Council. Although discussions with Council are well advanced, a response has not been received from Council at the time of finalisation of this document. Multiquip will continue to discuss the VPA with Council.
- A Social Impact Assessment (SIA) has been prepared to better define and describe the local community(ies), community values and issues of greatest importance / concern, assess the level of impact(s) on these values and develop management and mitigation strategies to assist in reducing the social impact of the proposed modification on the community(ies) (refer to Section 2.13).

2.2 EXISTING TRAFFIC VOLUMES

On review of the *Environmental Assessment*, it has been identified that the traffic counts used to define the existing (non-Quarry) traffic on Oallen Ford Road were incorrectly interpreted in the EIS. When reviewing the 2013 classified traffic count data for Oallen Ford Road, volumes presented as cumulative 7-day totals were assumed to be Annual Average Daily Traffic (AADT) volumes. As a result, the existing heavy vehicle traffic volumes included in *Tables 8* and *10* of the *Environmental Assessment* and *Tables 18* and *20* of the Noise Impact Assessment were overstated.

This error does not impact on the assessment of impacts, other than to reinforce these as conservative given a greater volume of pre-existing heavy vehicle traffic was assumed. The corrected background traffic volumes are used to review daily traffic volumes under a variety of transport schedules for the Quarry (as modified).

2.3 UPDATED QUARRY TRANSPORT SCHEDULE

The Applicant recognises that the presentation of product transport information in the *Environmental Assessment* and accompanying studies (most notably the Noise Impact Assessment) has created concern amongst some in the local community. By referencing the maximum number of truck movements per hour (10 during the extended hours of operation and 14 during the approved hours of operation) without providing an indicative schedule, the impression of a greater increase in traffic has been created than what is proposed.

To better illustrate how product transport would be scheduled, both daily and monthly, **Table 1** provides the indicative schedule for an average production day (of 88 truck movements or 44 loads). **Table 1** also includes the indicative hourly transport schedule for a high production day (110 truck movements) and maximum production day (124 truck movements). Noting the monthly average number of daily truck movements would be restricted to 88. As a result of the higher number of truck movements on some days, there would equally be a number of days when truck movements would be lower in order for the average of 88 daily truck movements to be achieved in each calendar month.

Table 1
Approved and Indicative Transport Scheduling Examples

Period	Currently Approved Operations	Indicative Operations (Truck Movements per Hour)		
	Indicative Day [1]	Indicative Day	High Production Day	Maximum Production Day
5am - 6am	0	6	8	10
6am - 7am	0	6	8	10
7am - 8am[2]	14	8	8	8
8am - 9am	14	8	8	8
9am - 10am	14	8	10	10
10am - 11am	6	8	10	12
11am 12pm	6	6	10	14
12pm - 1pm	6	6	8	8
1pm - 2pm	8	6	8	10
2pm - 3pm	8	6	8	8
3pm - 4pm	4	6	8	8
4pm - 5pm[2]	4	4	4	4
5pm - 6pm	4	4	4	4
6pm - 7pm	0	2	4	4
7pm - 8pm	0	2	2	2
8pm - 9pm	0	1	1	2
9pm - 10pm	0	1	1	2
Daily Truck Movements	**88**	**88**	**110**	**124**
Daily Truck Loads	**44**	**44**	**55**	**62**

Note 1: The scheduling is based on high demand for early delivery of construction materials.
Note 2: The Culmone's School bus service operates on Jerrara and Oallen Ford Roads between 7:30am and 8:00am in the morning and 4:15pm to 4:45pm in the afternoon.

While it is acknowledged that the schedules nominated in **Table 1** are indicative, they have been prepared by the Applicant with careful consideration of customer destinations and requirements, return travel times, number of vehicles and the concerns of the local community. These schedules are therefore considered unlikely to vary significantly and illustrate a number of important details regarding product transportation.

- By extending the hours of operation, the number of trucks travelling on the product delivery route between the hours of 7:00am and 10:00am would be reduced from that likely under the current hours of operation (for average, high demand and maximum day production schedules).

- The number of heavy vehicles required during the hours of 6:00pm to 10:00pm is likely to be lower than the proposed maximum number. The early morning period (5:00am to 7:00am) being far more critical to product delivery scheduling.
- Truck movements would be restricted as far as practicable during the periods of 7:00am to 8:00am and 4:00pm and 5:00pm when the local bus service is conducting school children pick-ups and drop-offs[2].
- As identified in *Section 5.3.3.3* of the *Environmental Assessment* (under the subtitle 'Driver Code of Conduct'), the Applicant would require drivers to use UHF Channel 30 when operating during these hours to identify the location of the school bus on the product delivery route and notify the bus driver of their approach.
- In addition, the Applicant would contact the school bus service operator at the commencement of each term to confirm the timetable remains unchanged or to identify any additional or modified pick-up / drop-off locations or times.
- On average, the number of trucks per hour during the hours of 7:00am to 6:00pm would reduce or stay at the current approved level.
- There may be some occasions when hourly traffic levels between 7:00am and 6:00pm reach 14, i.e. the current maximum approved level which has been demonstrated to satisfy road noise criteria.

Considering the corrected heavy vehicle traffic volumes for Oallen Ford Road, and the average transport schedule of **Table 1**, **Tables 2** and **3** provide a more realistic description of the likely combined traffic volumes on Jerrara and Oallen Ford Roads (based on 2017 traffic volumes on these roads).

The heavy vehicle traffic volumes are shaded and while increasing from the volumes of the pre-Quarry setting, it is noted that the numbers in the 5:00am to 7:00am, and 6:00pm to 10:00pm periods remain (on average) reasonably low at around one truck movement every 10 minutes between 5:00am and 7:00am and much less after 6:00pm. At the maximum traffic frequency, there would be one truck movement every 6 minutes. As noted above, by increasing the hours of operation as proposed, the frequency of truck movements throughout the rest of the day would be reduced, in particular between 7:00am and 10:00am.

2.4 PERFORMANCE BASED SCHEME VEHICLE APPROVAL AND PERMIT

The Applicant proposes to transport products from the Quarry using a variety of heavy vehicles the majority of which would be PBS designed vehicles. Since the preparation of the *Environmental Assessment*, the Applicant has received the Class 2 - Heavy Vehicle PBS Authorisation Permit No. 168751v4 to operate a 25.8m truck configuration on the roads of the product delivery route subject to the conditions of the permit. Both the permit and the vehicle approval (V180307 – VA4990) to which it applies are provided as **Appendix 2**.

[2] Timetable provided by Culmone's Bus Service.

The PBS Permit is granted by the National Heavy Vehicle Regulator (NHVR) under the provisions of Section 143 of the *Heavy Vehicle National Law Act 2012*. The granting of the permit follows the obtainment of support from the road authorities (Goulburn Mulwaree Council and the Roads & Maritime Services [RMS]). No specific conditions were provided by Goulburn Mulwaree Council prior to the granting of this permit.

The granting of the PBS Permit 168751v4 for the nominated vehicles (as approved) satisfies the operating requirements of the route prescribed. This notwithstanding and following from requests contained within the submission of Goulburn Mulwaree Council on the proposed modification for further information on intersection function and performance, supplementary route suitability assessment has been completed (refer to Section 2.6).

Table 2
Existing and Proposed Traffic Movements – Oallen Ford Road (2017)

	Existing Traffic*		Proposed Traffic						
			Modified Quarry						
	Local		Heavy				All Traffic (Average Quarry)		
Period	Light	Heavy	Indicative	High	Max	Light	Light	Heavy	All
12am-1am	2	0	0	0	0	0	2	0	2
1am-2am	1	0	0	0	0	0	1	0	1
2am-3am	0	0	0	0	0	0	0	0	0
3am-4am	1	0	0	0	0	0	1	0	1
4am-5am	2	0	0	0	0	4	6	0	6
5am-6am	6	1	6	8	10	0	6	7	13
6am-7am	11	2	6	8	10	10	21	8	29
7am-8am	19	2	8	8	8	10	29	10	39
8am-9am	29	2	8	8	8	0	29	10	39
9am-10am	23	3	8	10	10	0	23	11	34
10am-11am	32	2	8	10	12	0	32	10	42
11am-12pm	28	2	6	10	12	0	28	8	36
12pm-1pm	26	2	6	8	10	2	28	8	37
1pm-2pm	26	2	6	8	10	2	28	8	37
2pm-3pm	32	2	6	8	8	0	32	8	40
3pm-4pm	34	3	6	8	8	4	38	9	48
4pm-5pm	34	3	4	4	4	6	40	7	48
5pm-6pm	28	2	4	4	4	6	34	6	40
6pm-7pm	19	1	2	4	4	6	25	3	28
7pm-8pm	9	1	2	2	2	0	9	3	12
8pm-9pm	10	1	1	1	2	0	10	2	12
9pm-10pm	7	0	1	1	2	0	7	1	8
10pm-11pm	3	0	0	0	0	4	7	0	7
11pm-12am	3	0	0	0	0	0	3	0	3
Daily Total	**385**	**34**	**88**	**110**	**124**	**54**	**439**	**122**	**561**

* 2017 Traffic Counts

Table 3
Existing and Proposed Traffic Movements – Jerrara Road (2017)

	Existing Traffic		Proposed Traffic						
			Modified Quarry				All Traffic (Average Quarry)		
	Local		Heavy			Light			
Period	Light	Heavy	Indicative	High	Max		Light	Heavy	All
12am-1am	1	0	0	0	0	0	1	0	1
1am-2am	1	0	0	0	0	0	1	0	1
2am-3am	1	0	0	0	0	0	1	0	1
3am-4am	1	0	0	0	0	0	1	0	1
4am-5am	1	0	0	0	0	4	5	0	5
5am-6am	13	2	6	8	10	0	13	8	21
6am-7am	27	2	6	8	10	10	37	8	45
7am-8am	25	5	8	8	8	10	35	13	48
8am-9am	19	7	8	8	8	0	19	15	34
9am-10am	18	5	8	10	10	0	18	13	31
10am-11am	14	1	8	10	12	0	14	9	23
11am-12pm	17	5	6	10	12	0	17	11	28
12pm-1pm	13	2	6	8	10	2	15	8	23
1pm-2pm	20	2	6	8	10	2	22	8	30
2pm-3pm	16	1	6	8	8	0	16	7	23
3pm-4pm	14	3	6	8	8	4	18	9	27
4pm-5pm	32	6	4	4	4	6	38	10	48
5pm-6pm	28	3	4	4	4	6	34	7	41
6pm-7pm	20	3	2	4	4	6	26	5	31
7pm-8pm	11	0	2	2	2	0	11	2	13
8pm-9pm	8	0	1	1	2	0	8	1	9
9pm-10pm	4	0	1	1	2	0	4	1	5
10pm-11pm	2	0	0	0	0	4	6	0	6
11pm-12am	5	0	0	0	0	0	5	0	5
Daily Total	**311**	**47**	**88**	**110**	**124**	**54**	**365**	**135**	**500**

2.5 PAVEMENT REMAINING LIFE ANALYSIS

In order to ensure that current and future road maintenance requirements of the roads of the Quarry product delivery route (Oallen Ford, Mountain Ash and Jerrara Roads) are identified and suitably provided for, the Applicant commissioned Pavement Management Services (PMS) to undertake a pavement structural evaluation and provide a remaining life assessment of the pavement of these roads.

In order to undertake the pavement investigation and prepare the remaining life report, Falling Weight Deflectometer (FWD) testing on the existing pavement was undertaken between 30 May and 20 June 2018. The results of the testing are presented in **Appendix 3**.

The findings of the structural and remaining life analysis found the three roads exhibit a similar deflection response. Jerrara Road and Oallen Ford Road exhibit localised and generally isolated locations of remaining life less than 20 years. This represents approximately 16% of the total transport route, with the loaded (northbound) lanes having a lower remaining life with an average of 17 years compared to 19 years for the unloaded (southbound) lanes.

In reviewing the remaining life of the roads, PMS identified that the following.

- Without any Quarry traffic, the remaining road life (averaged) is 19.4 years.
- Based on 3 axle truck and dog arrangement transporting 400 000tpa, the remaining life reduces to 18.5 years (a reduction of 0.9 years).
- Based on a combination of PBS trucks transporting 580 000tpa, the remaining road life decreases slightly to 18.2 years.

PBS analysed the cost associated with this reduction in road life to be approximately $1.1 million based on reasonably conservative rates for road works. Notably, the proposed contribution rate of 3.74c/t/km proposed within the VPA with Goulburn Mulwaree Council would generate (over 20 years) up to $7.8 million. As discussed in Section 2.12, this is a very generous contribution to the road upgrade and maintenance compared to the projected damage caused.

The results of the remaining life analysis are currently being considered by the Applicant and Council and will be relied upon in developing the final terms of a Voluntary Planning Agreement – see Section 2.12).

2.6 SUPPLEMENTARY ROUTE SUITABILITY ASSESSMENTS

2.6.1 Product Delivery Route Culverts and Bridges

Bridge Design Pty Ltd were commissioned by the Applicant to assess eight culvert and two bridge structures along the product delivery route to confirm their suitability under General Mass Limit (GML) and Higher Mass Limit (HML) loading. The full report of Bridge Design, which concludes all ten structures are in good to fair condition with no defects sufficient to compromise their structural capacity, is included as **Appendix 4**.

2.6.2 Intersection Performance Analysis

Based on the pre-existing and proposed traffic volumes, Transport and Urban Planning (TUP) was commissioned by the Applicant to assess the Level of Service provided by each intersection along the product delivery route. The full report of TUP, which confirms Level of Service A (as defined by *Table 4.2* of the Guide to Traffic Generating Developments – RTA, 2002) for all intersection, is included as **Appendix 5**. Level of Service A provides for a very good level of service with low vehicle delays. TUP also confirms that the intersections have sufficient spare capacity to accommodate future traffic growth over the life of the Quarry.

2.6.3 Turning Path Analyses

TUP was also commissioned to review the swept paths of the PBS approved vehicles and confirm the four intersections along the product delivery route provided adequate turning paths. TUP confirm that each intersection can accommodate the swept path of the PBS approved vehicles (see **Appendix 6**).

2.7 ROAD SAFETY AUDITS

2.7.1 Construction Phase Road Safety Audit

The Applicant commissioned a Construction (Roadworks) RSA on those sections of Oallen Ford Road, Jerrara Road and Mountain Ash Road which form part of the product delivery route in order to identify any potential safety hazards which may arise as a result of the recently completed construction activities and future operation of these roads (for the purpose of the currently approved Quarry transport). The RSA was completed by Rigore Engineering Services (Rigore) and managed by Goulburn Mulwaree Council between 23 March 2018 (commencement meeting) and 17 April 2018 (final report issued). A copy of the RSA, which identified a variety of deficiencies for correction, is provided as **Appendix 7**.

The Applicant has confirmed that a completion meeting was held (by phone) between the auditor (Rigore), Council and the Applicant where the RSA report was accepted by Council and the Applicant. The corrective actions which were agreed to, with the exception of the installation of Raised Reflective Pavement Markers which were outside the scope of the agreed road upgrade requirements, have been completed. Based on the outcome of this RSA, the roads were considered safe for use by trucks travelling along the product delivery route.

2.7.2 Post Construction (Existing Road) Road Safety Audit

Following the completion of roadworks required under the conditions of PA 07_0155, including those identified and completed following the Construction (Roadworks) RSA, the Applicant commissioned Transport & Urban Planning (TUP) to complete a Post-construction (Existing Road) RSA. The purpose of the Existing Road RSA (see **Appendix 8**), completed in accordance with the Roads and Maritime Services (RMS) *Guidelines for Road Safety Audit Practice* (RTA, 2011) and Part 6 of the Austroads Guide to Road Safety (Austroads, 2009) was as follows.

- To identify potential safety problems for road users and to ensure that measures to eliminate or reduce these likely problems are fully considered.
- To consider road safety under the proposed Quarry transport operations (580 000tpa and up to 124 truck movements per day).
- To review and assess, in the context of road safety, the recommendations contained in the Goulburn Mulwaree Council submission of 22 February 2018 relating to road conditions of the transport route. Specifically:
  - road cross-section requirements for the road and culverts / bridges; and
  - road side safety in relation to clear zones and road side safety barrier.

  Consideration of road geometry matters related to the vehicle turning paths of the longer PBS vehicles was addressed separately to the Existing Road RSA (refer to Section 2.6.3 and the swept path analysis presented in **Appendix 6**).

The roads were inspected and audited on 17 August 2018 and examined, relative to applied and recommended design standards for both day and night traffic conditions, i.e. relating to:

- road alignment and cross section;
- auxiliary lanes;
- intersections;
- signs and lighting;
- markings and delineation;
- crash barriers and clear zones;
- pedestrians and cyclists;
- bridges and culverts;
- pavement;
- provision for heavy vehicles; and
- miscellaneous issues.

As identified in the Existing Road RSA (see **Appendix 8**), existing lane and shoulder widths, signage, pavement markings and protection of roadside hazards are generally considered adequate and consistent with a rural road environment. Several potential safety issues with low to medium risk rankings were identified. The Applicant has reviewed these and provided for appropriate treatments where considered warranted (see **Appendix 8**).

The roads were observed to function effectively and safely for the current intended purpose and combination of vehicle types. The RSA concluded that the existing road environment is suitable for use by the proposed transport operations involving the longer PBS vehicles without presenting an increased safety risk.

With respect to the Goulburn Mulwaree Council recommendations relating the road conditions, the RSA determined that the application of these will not necessarily result in a safer road environment than currently provided. Specific discussion with respect to the Goulburn Mulwaree Council recommendations is provided in Section 3.2.3.

Further to the above, the Applicant will comply with any reasonable future requirements of Council for further RSAs.

2.8 HYDROGEOLOGICAL INVESTIGATION – INVERARY PARK SPRING FLOW

Since 2004, the owner of the "Inverary Park" property, which adjoins the Quarry Site to the east, has complained that flow from a spring on the property has been declining. The spring in question, referred to as Phil's Spring, is one of a series of 'water features' identified in the local area surrounding the Quarry Site (see **Figure 1**). As has been described in previous groundwater studies for the Quarry (LCC, 2005, 2008), these are 'contact springs' and are locally-perched sand-hosted saturated zones overlying a low-permeability layer, where the perched shallow groundwater intersects the topography (land surface). The majority of the documented springs in this area are aligned along the eroding fringe of the Tertiary basalt (see **Figure 2**).

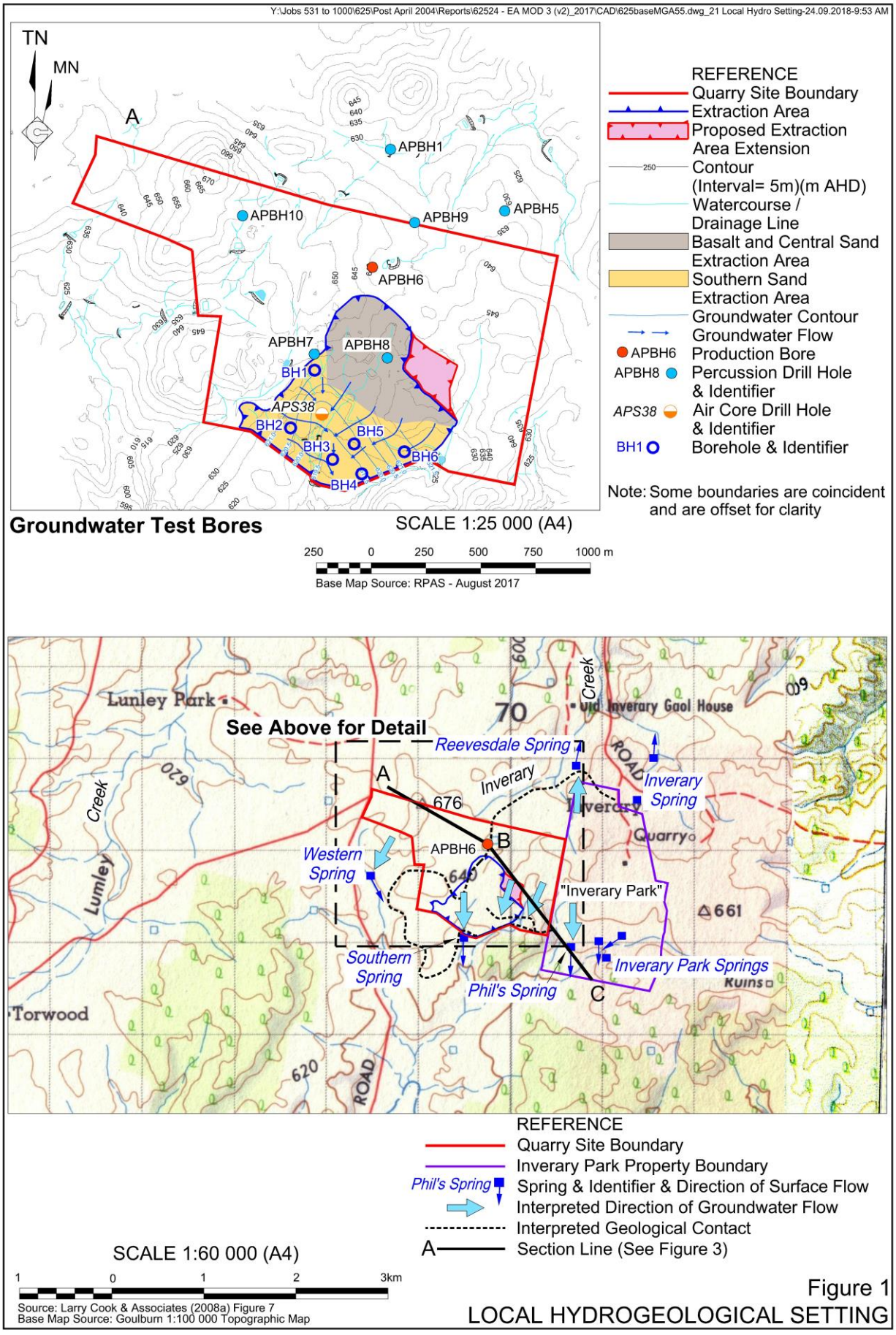


Figure 1
LOCAL HYDROGEOLOGICAL SETTING

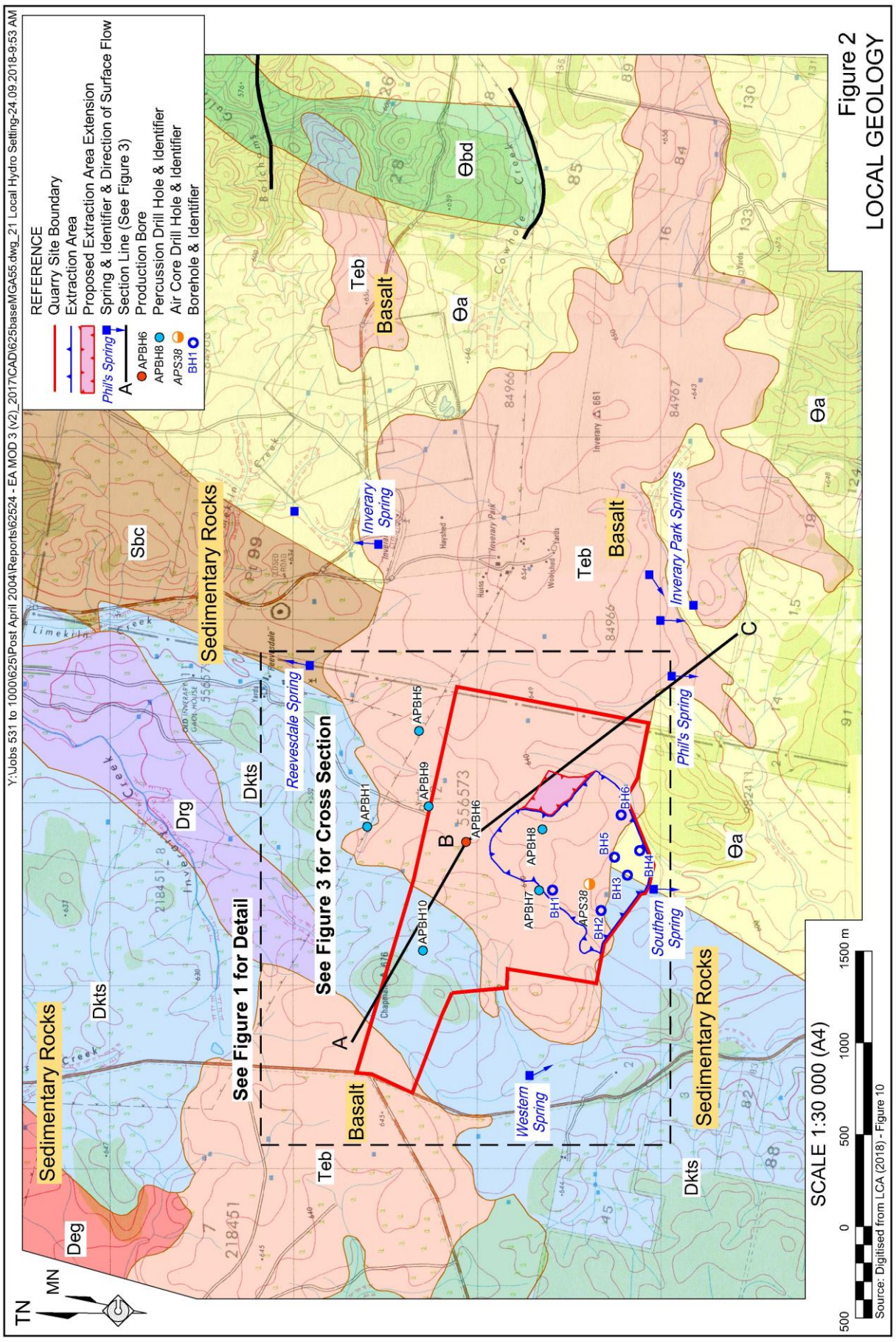


Figure 2
LOCAL GEOLOGY
REFERENCE
Quarry Site Boundary
Extraction Area
Proposed Extraction Area Extension
Spring & Identifier & Direction of Surface Flow
Section Line (See Figure 3)
Production Bore
Percussion Drill Hole & Identifier
Air Core Drill Hole & Identifier
Borehole & Identifier
Phil's Spring
A
APBH6
APBH8
APS38
BH1
Sedimentary Rocks
Basalt
Teb
Dkts
Drg
Deg
Sbc
Θa
Θbd
See Figure 1 for Detail
See Figure 3 for Cross Section
Reevesdale Spring
Inverary Spring
Inverary Park Springs
Phil's Spring
Southern Spring
Western Spring
APBH1
APBH5
APBH9
APBH10
APBH7
BH2
BH3
BH4
BH5
BH6
A
B
C
TN
MN
SCALE 1:30 000 (A4)
500
0
500
1000
1500 m
Source: Digitised from LCA (2018) - Figure 10
Y:\Jobs 531 to 1000\625\Post April 2004\Reports\62524 - EA MOD 3 (v2)_2017\CAD\625baseMGA55.dwg_21 Local Hydro Setting-24.09.2018-9:53 AM

In response to Submission No. 246970, from the owner of "Inverary Park", the Applicant commissioned Larry Cook Consulting Pty Ltd (LCC) to undertake an investigation into the potential causes of spring flow decline and whether the operations of the Quarry could have caused or contributed to this. The investigation of LCC (2018a), which is reproduced as **Appendix 9**, concludes that the decline in flow of Phil's Spring is not a result of extraction or pumping from licensed Production Bore APBH6 within the Quarry Site. The evidence for this conclusion is summarised as follows.

- No groundwater has been intercepted in either the active basalt or sand extraction areas.
- LCC (2018a) demonstrates there is a significant geological and hydrogeological (hydraulic) disconnect between the deeper 'fracture-controlled' hard rock aquifers (from which the production bore pumps water) and younger 'unconfined' alluvial sand aquifer (see **Figure 3**).

  Furthermore, the shallow sand aquifer providing the spring discharges in the local area is separated from the deeper paleo alluvium by a district-significant 20m to 40m thick clay aquitard which effectively acts as a hydraulic barrier.
- Monitoring in bores which surround the production bore do not identify any reduction in standing water levels which would suggest the pumping is depressurising the deeper alluvial aquifer. This indicates that the production bore is not overlying the basement rock sequence and therefore not causing any leakage from the shallow 'unconfined' alluvial aquifer that provides spring flow in the area.

  LCC (2018a) notes that the apparent fluctuations in the water level (piezometric level) in the Applicant's production bore are not unusual for this type of aquifer. The change in water level (below ground) from 57.0m (July 2003) to 61.1m (2018) likely represents fluctuations in aquifer pressure and not necessarily a change in aquifer storage volume. Furthermore, LCC (2018a) notes that the regional geology and tectonic history indicate that the recharge area for the deep, fracture-controlled hard rock aquifer is extensive and not restricted to the local area.
- As illustrated by the records of spring flow decline, this decline commenced prior to commissioning the production bore on 'Ardmore Park' (in 2004) and throughout the extended periods of non-pumping, low-volume pumping and intermittent (irregular) pumping up until early 2017 (13 years).
- The trend in the declining flow rate between 2001 and 2009 appears to correlate with below average rainfall across southeastern Australia. This suggests a decrease in the groundwater storage in the shallow sand sequence and commensurate decrease in the discharge rate of the spring system.

  The lack of recovery in spring flow following relatively high rainfall totals in 2007, 2010 and 2012 is likely to reflect an overall depressurisation of the sand aquifer, resulting in a reduction in the hydraulic head, generated by multiple years of below average rainfall and reduced storage within the aquifer.

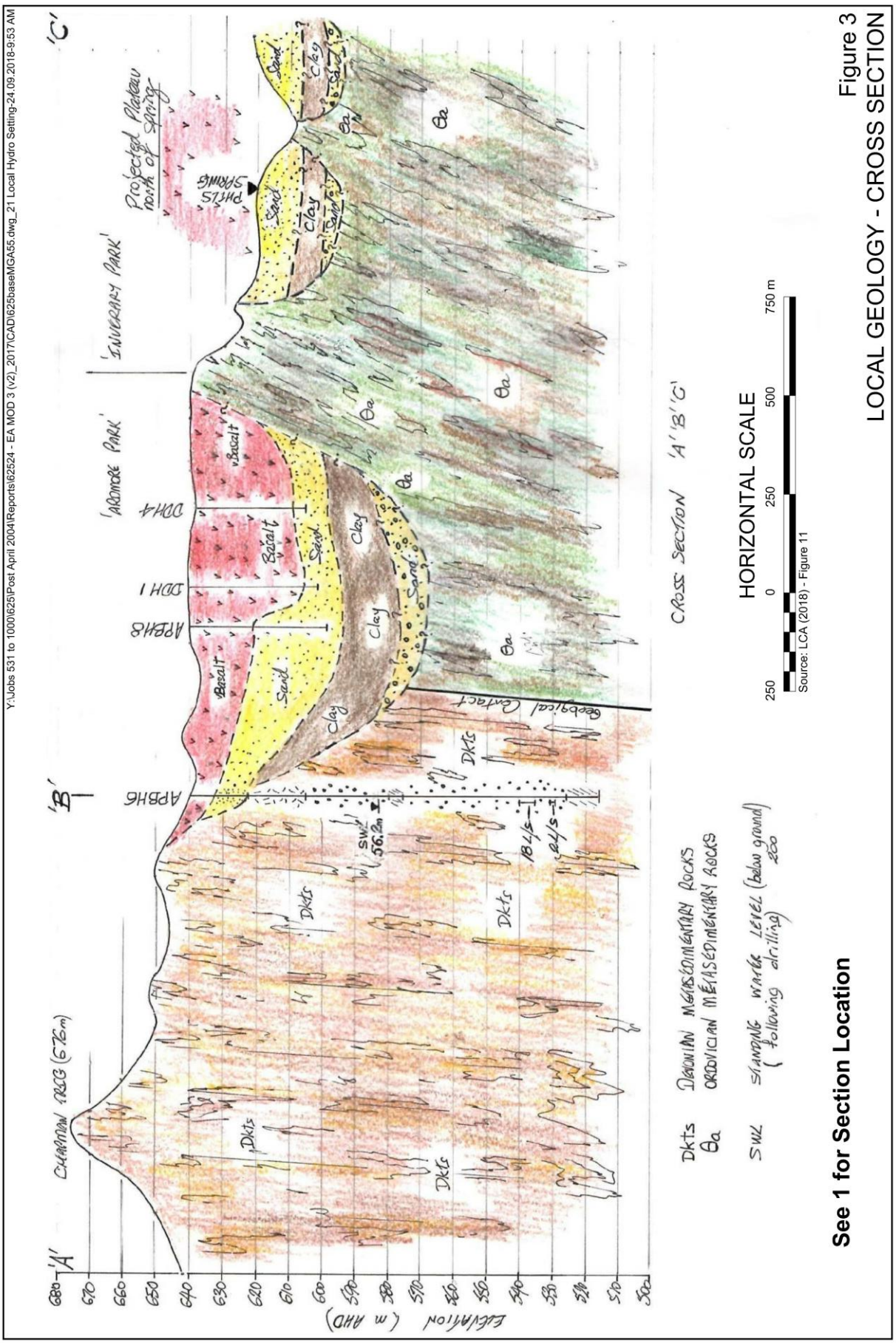


Figure 3
LOCAL GEOLOGY - CROSS SECTION

See 1 for Section Location

- The distance between the Applicant's production bore and Phil's Spring is 1.56km. This significantly exceeds the conservative separation distances that WaterNSW sets for works approval bores (irrigation/commercial/industrial), particularly for bores exploiting the same alluvial aquifers in irrigation districts that are considered by the State government to be under aquifer stress.

The Applicant will continue to monitor groundwater levels surrounding the production bore and extraction areas. The Applicant will also continue to monitor the flow rate from Phil's Spring using a V-Notch weir constructed in January 2018. The details of groundwater and spring flow monitoring will be included in the Quarry *Water Management Plan* which is to be reviewed and updated following determination of the Modification 3.

2.9 ABORIGINAL CULTURAL HERITAGE FIELD INSPECTION

In response to a request by the NSW Office of Environment & Heritage (OEH), an inspection and assessment of the Quarry Site was completed by OzArk Environmental & Heritage Management (OzArk) in order to:

1. confirm the proposed extraction area extension occurs within an area of low archaeological potential and will not impact on any sites or items of Aboriginal cultural heritage;
2. inspect the Southern Sand Extraction Area, identified as having higher archaeological potential by Cultural Heritage Management Australia (CHMA) (2008), and identify suitable locations in which to undertake archaeological test excavation as per the Ardmore Park Quarry Aboriginal Heritage Management Plan (AHMP) (Kayandel Archaeological Services 2010); and
3. provide recommendations for an excavation methodology of these suitable locations in order to:
   - determine the presence or absence and extents of archaeological materials;
   - confirm the depth of the potential archaeological deposits (if present); and
   - determine the nature and significance of any archaeological deposits.

OzArk (2018) reports the outcomes of the Aboriginal Cultural Heritage Field Inspection (see **Appendix 10**), a summary of which is provided as follows.

Extraction Area Extension

The proposed extraction area extension was inspected on 26 April 2018 by OzArk Principal Archaeologist, Ben Churcher, by pedestrian survey (see **Figure 4**).

It was assessed that the proposed extraction area extension study area does have low archaeological potential due to the following.

- The area occupies a broad hill that is not unique in the landscape and there is no reason to suspect that the hill was utilised as a lookout or vantage point any more than any other of the surrounding hills.

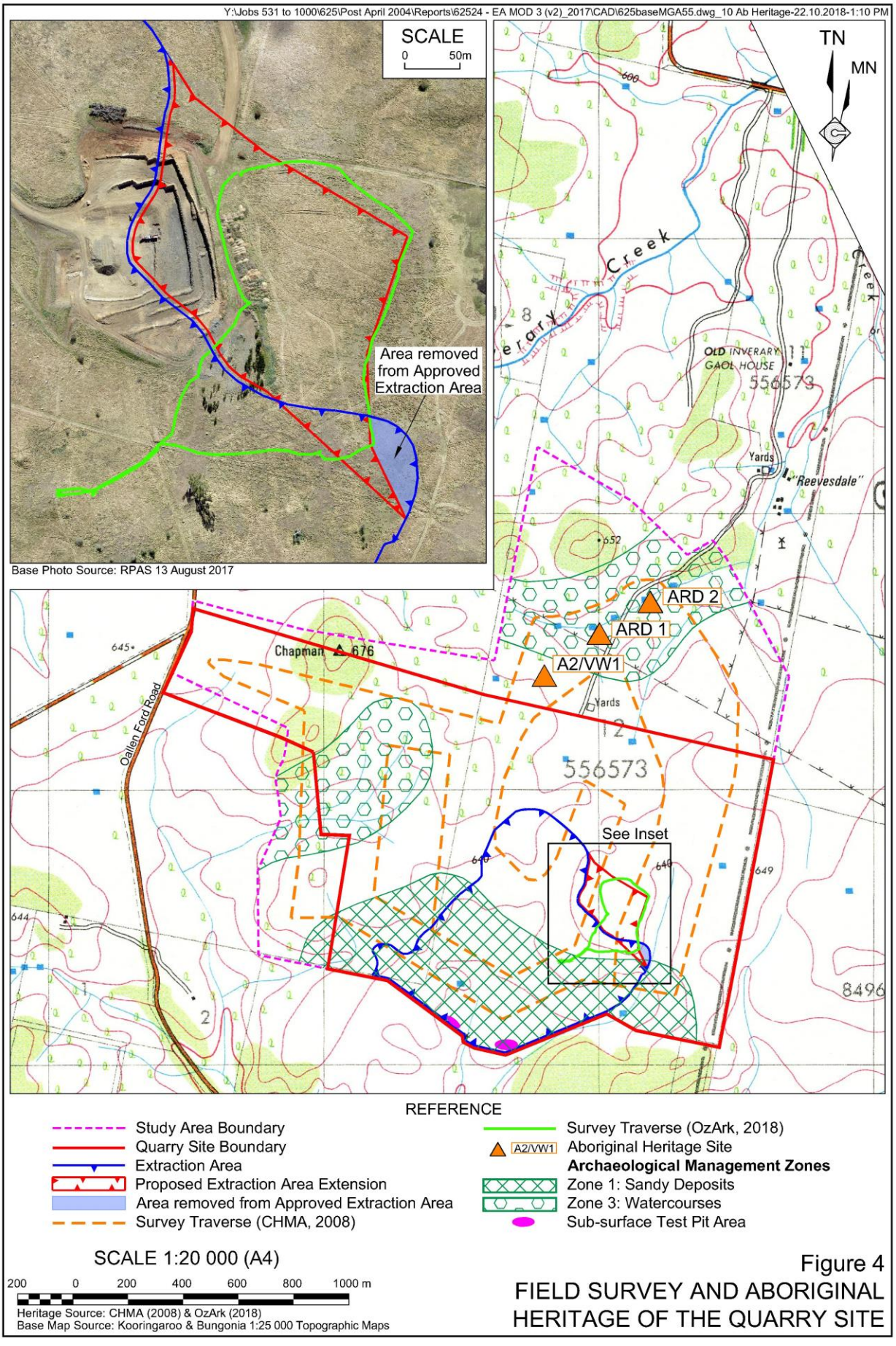


Figure 4
FIELD SURVEY AND ABORIGINAL HERITAGE OF THE QUARRY SITE

- The soils are rocky and skeletal which suggest shallow soil depths precluding subsurface archaeological deposits.
- The area has now been visually inspected twice, CHMA in 2008 and OzArk in 2018, without sites being recorded.

This assessment supports the results of CHMA (2008) which traversed the proposed extraction area extension without recording any sites (see **Figure 4**). OzArk (2018) notes that the lack of artefactual material on the Quarry Site, including within areas of higher archaeological potential, indicates that the landscape generally has a very low density of sites and/or artefacts. When this is coupled with the relatively small size of the disturbance area and the distance to any form of waterway, OzArk (2018) confirms the assessment of this area as of low archaeological potential and as having a very low likelihood of recording Aboriginal sites.

2.10 SUPPLEMENTARY BIODIVERSITY FIELD SURVEY

Following a review of the Flora and Fauna Assessment for the proposed modification of Kevin Mills & Associates (KMA) (2017), OEH requested additional survey and reporting to assess the biodiversity values of the land to be disturbed in accordance with the Framework for Biodiversity Assessment (FBA) (OEH, 2014). The Applicant subsequently engaged Aquila Ecological Surveys (AES), whose principal Paul Burcher is an accredited BioBanking Assessor (No.226), to undertake an FBA survey of the proposed extension to the extraction area on the Quarry Site ("the subject site"). The full report of AES (2018) is provided as **Appendix 11**.

The field survey of AES (2018) included two 50m x 20m BioBanking plots (see **Figure 5**) for the collection of the following data.

- The number of native flora species within a 20m x 20m plot sub-plot.
- Groundcover at 1m intervals along the 50m axis.
- Shrub and canopy cover at 5m intervals along the 50m axis.
- The number of hollow-bearing trees.
- Total length of fallen logs (>0.5m length and > 0.1m diameter).
- Over-storey regeneration within the subject site.

As described by KMA (2017), AES (2018) confirmed the vegetation as dense grassland dominated by the introduced pasture species Phalaris (*Phalaris aquatica*) and other exotic grasses and broad-leaf herbs. No native plant species were found in either of the plots and no ecosystem credits were generated (even after considering the likely pre-existing plant community type). AES (2018) also confirmed that the area is unlikely to form habitat for threatened species and no species credits were generated.

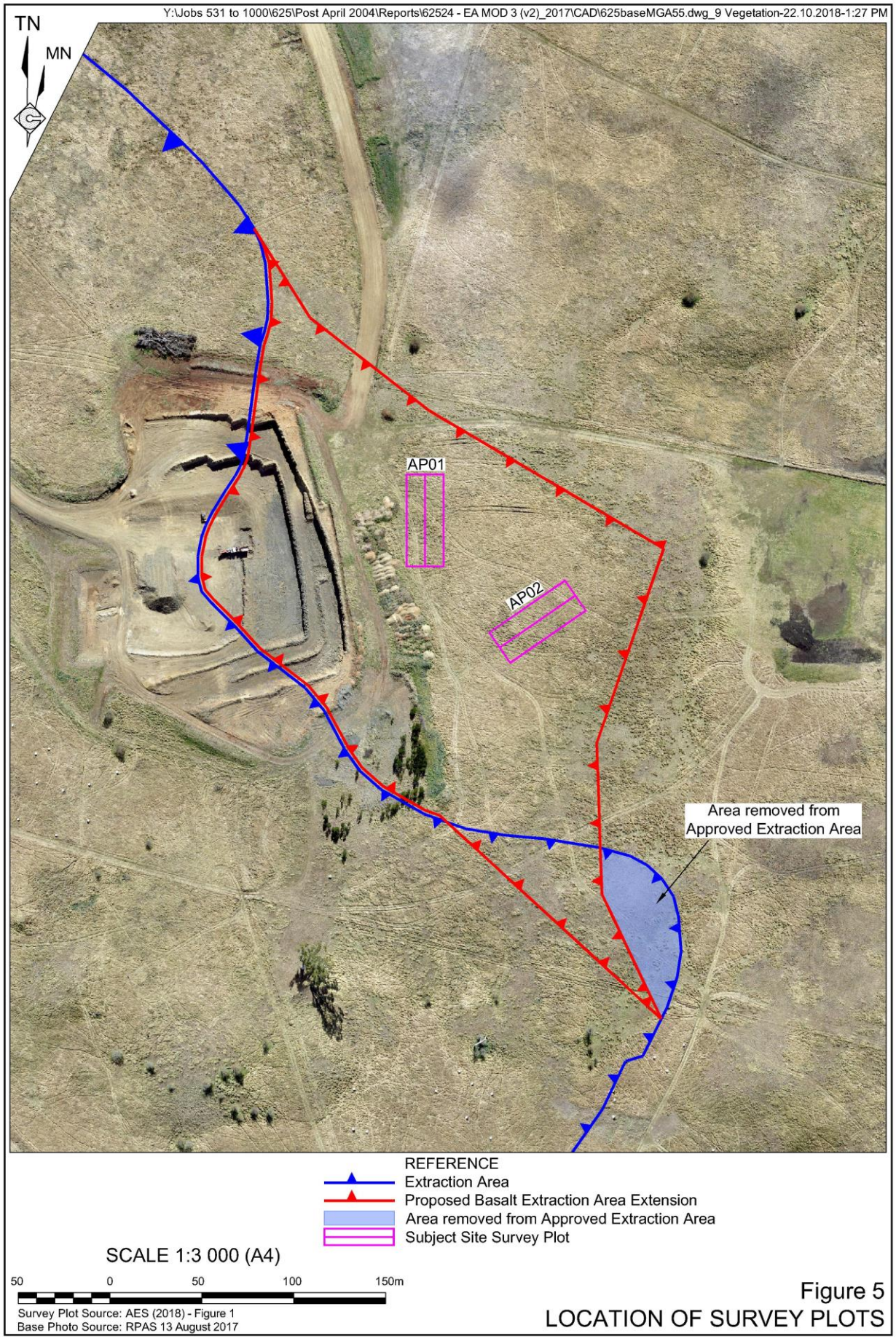


Figure 5
LOCATION OF SURVEY PLOTS

2.11 NOISE MONITORING, ASSESSMENT AND MANAGEMENT

2.11.1 Noise Monitoring

Since the completion of the *Environmental Assessment*, the Applicant has commissioned further noise monitoring which was completed on the following dates.

- 7 and 8 March 2018.
- 21 June 2018.

The Noise Monitoring Reports of Benbow Environmental Pty Ltd (BEPL) can be reviewed in full as **Appendix 12** with a summary of results provided below.

March 2018

BEPL conducted attended noise monitoring at four points on or near the Quarry Site boundary to neighbouring residential receivers on 7 and 8 March 2018. Whilst monitoring was being undertaken, all mobile crushing equipment and sand washing plant was operational. Additional monitoring was undertaken with both sand washing and rock crushing plants operating.

Quarry Site Noise

- During periods when the sand washing plant only was operating, the Quarry contribution to noise levels at the monitoring points varied between 18dB(A) and 37dB(A), with a maximum contribution of 36dB(A) at the relevant residential receiver.
- During periods when both sand washing and rock crushing plants were operating concurrently, the Quarry contribution to noise levels at the monitoring points was slightly increased and varied between 23dB(A) and 37dB(A), with a maximum contribution of 36dB(A) at Receiver 6 in the Project Approval.

Compliance with the noise criteria was confirmed during all measured site activities.

Road Noise

Road traffic noise monitoring was conducted along Oallen Ford Road and Jerrara Road at distances of 13m and 14m respectively from the centreline of the road. The estimated noise contribution at the closest residential receivers along the road was less than 50dB(A), which complies with the road noise criteria.

June 2018

BEPL conducted attended noise monitoring at the residence on the "Inverary Park" property (Receiver R3) and three points along the site boundary to neighbouring residential receivers on 21 June 2018. Extraction and sand washing operations were ongoing during the monitoring with the results summarised as follows.

- At three locations, compliance with noise criteria was confirmed with the Quarry contribution to noise levels calculated to be between 23dB(A) and 31dB(A).

- At Receiver R3, the noise level measured before 10:00am exceeded the noise criteria. When monitoring was repeated between 11:00am and 12:00pm, the Quarry contribution to noise level was reduced to 34dB(A), i.e. compliant.

BEPL report that a temperature inversion was likely in place on the morning of 21 June 2018 up until about 10:00am. This is supported by the results of temperature monitoring at the Quarry meteorological station on that day. As the elevated noise level of the pre-10:00am noise monitoring was primarily due to meteorological factors, this should not be considered an exceedance of noise criteria.

Methods to address this issue of inversion conditions extending into the approved hours of operation, and reducing noise levels received during these periods, are discussed in further detail in Section 2.11.3.

EPA Unattended Monitoring and Response

In addition to the noise compliance monitoring undertaken in March and June 2018, the Applicant was advised that the EPA had conducted both attended and unattended noise monitoring at the residence on the "Inverary Park" property between 23 November 2017 and 1 February 2018. In correspondence to the Applicant of 25 June 2018, the EPA advised the Applicant that this monitoring was undertaken in response to concerns raised by the community regarding noise emissions from the Quarry (see **Appendix 13**).

On examination of the monitoring data, the EPA identified that during the single period of attended noise monitoring, the Quarry was inaudible and compliant with noise criteria. On analysis of the unattended noise monitoring data, the EPA identified periods when the noise level received exceeded the Quarry noise criteria, and the EPA issued the Applicant with a draft Pollution Reduction Program (PRP) for implementation (see **Appendix 13**).

On receipt of the results of the EPA's monitoring program and draft PRP, the Applicant commissioned BEPL to review the results, conclusions and recommendations of the EPA. On review of the monitoring data and the EPA's assessment report, BEPL concluded that the EPA's claim of noise limits exceedances should be justified with a more accurate noise assessment. The full response of BEPL provided in **Appendix 13**, which identifies the following key concerns with the EPA's methodology and analyses.

- By conducting unattended measurements instead of attended measurements, the EPA have relied on the method that the Noise Policy for Industry (2017) identifies as less preferred.
- The EPA has relied upon time and frequency filtering, and other post processing tools, which are not as accurate as a trained engineer on site identifying the noise sources and contributions through attended measurements.
- The reference curve method is not listed as a post processing tool in any EPA policy.

BEPL believes that the amount of 'exceedances' identified by the EPA's monitoring have been overestimated due to:

- the use of 1 minute assessment periods instead of 15 minute periods;

- failure to rule out meteorological conditions as the cause of elevated morning noise levels; and
- reference to exceedances occurring during source to receiver wind conditions which are not considered to be a feature of the area.

As illustrated by the results of noise compliance monitoring by BEPL (2018), compliance with noise criteria has been demonstrated except where day time inversion conditions were suspected.

Notwithstanding the above, the Applicant has accepted the application of a PRP to EPL 13213 but requested modifications to:

- replace unattended noise monitoring with periods of attended noise monitoring; and
- extend the due date for completion of the assessment.

A copy of the response of BEPL to the draft PRP and recommended modifications is also provided in **Appendix 13**.

The EPA subsequently acknowledged the technical difficulties associated with analysis of unattended noise monitoring data and confirmed these were not used to assess compliance. The PRP was modified to reflect the recommendations of BEPL and the Applicant is committed to implementing the PRP, commencing with advice on dates for attended monitoring in September and December 2018.

2.11.2 Revised Noise Impact Assessment

In response to the submission from the EPA, which included a number of queries on the methodology and analysis contained within the Noise Impact Assessment (NIA), VMS Australia has reviewed and revised the NIA.

The revised NIA is provided as **Appendix 14**, with responses to the specific queries of the EPA provided in Section 3.1.4.

Notably, the NIA has been revised to reflect the more recent Noise Policy for Industry (NPfI) (EPA, 2017) which replaces the Industrial Noise Policy (INP) against which the proposed modification was originally assessment and criteria established. Critically, the NPfI accounts for assessment of noise levels generated by a development under noise enhancing weather conditions, as opposed to the INP which only set criteria for the prevailing weather conditions of the local setting.

The revised NIA considers assessment of noise emissions against both policies, however, it is proposed that the noise criteria of PA 07_0155 are replaced with the Project Noise Trigger Levels established with reference to the more recent NPfI.

The Project Noise Trigger Levels (Project Intrusive and Amenity Noise Levels) for the surrounding residential premises are presented in **Table 4**. These criteria are nominated for the purpose of assessing potential noise impacts from the Quarry in accordance with the NPfI.

Table 4
NPfI Project Noise Trigger Levels

Receiver	Period	Recommended Amenity Noise Level $L_{Aeq(period)}$	RBL[1] $L_{A90(15minute)}$	Project Noise Trigger Level $L_{Aeq(15minute)}$		Sleep Disturbance Trigger Level	
				Intrusive[1]	Amenity	$L_{A90(15minute)}$	L_{AFmax}
All Surrounding Residences	Day	50	35	**40**	45	-	-
	Evening	45	30	**35**	40	-	-
	Night	40	30	**35**	35	**40**	**52**
Note 1: Minimum assumed RBLs (Rating Background Levels) and corresponding minimum Project Intrusive Noise Levels in accordance with *Table 2.1* of the NPfI.							
Source: VMS (2018) – Table 6							

For each assessment period, the more stringent of the project amenity or intrusive noise levels are adopted as the Project Noise Trigger Levels as marked in bold in **Table 4**.

Tables 5 and **6** reproduce the results of modified noise modelling completed after addressing the comments of the EPA. **Table 5** provides the predicted daytime noise emissions received at surrounding receivers under the three scenarios, namely:

- extraction in the basalt extraction area only;
- extraction in the sand extraction area only; and
- extraction in both extraction areas.

Table 5
Predicted Daytime Noise Emissions

Page 1 of 2

Receiver	INP Prevailing Conditions			NPfI Noise Enhancing Weather Conditions		
	Noise Level ($L_{Aeq(15minute)}$)	Project Approval (INP) Noise Limit		Modification $L_{Aeq(15minute)}$	Project Noise Trigger Level (NPfI)	
Basalt Extraction Area						
Residence 1	28	35	Complies	35	40	Complies
Residence 2	26	35	Complies	33	40	Complies
Residence 3	28	35	Complies	35	40	Complies
Residence 4	31	35	Complies	38	40	Complies
Residence 5	32	35	Complies	38	40	Complies
Residence 6	35	36	Complies	40	40	Complies
Residence 8	21	35	Complies	29	40	Complies
Residence 9	36	36	Complies	41	40	1dB(A) above
Residence 13	35	35	Complies	40	40	Complies
Sand Extraction Area						
Residence 1	28	35	Complies	35	40	Complies
Residence 2	26	35	Complies	33	40	Complies
Residence 3	29	35	Complies	35	40	Complies
Residence 4	32	35	Complies	38	40	Complies
Residence 5	33	35	Complies	38	40	Complies
Residence 6	35	36	Complies	40	40	Complies
Residence 8	21	35	Complies	28	40	Complies
Residence 9	35	36	Complies	40	40	Complies
Residence 13	34	35	Complies	39	40	Complies

Table 5 (Cont'd)
Predicted Daytime Noise Emissions

Receiver	INP Prevailing Conditions			NPfl Noise Enhancing Weather Conditions		
	Noise Level ($L_{Aeq(15minute)}$)	Project Approval (INP) Noise Limit		Modification $L_{Aeq(15minute)}$	Project Noise Trigger Level (NPfl)	
Concurrent Sand and Basalt Extraction						
Residence 1	29	35	Complies	36	40	Complies
Residence 2	27	35	Complies	34	40	Complies
Residence 3	30	35	Complies	36	40	Complies
Residence 4	33	35	Complies	39	40	Complies
Residence 5	34	35	Complies	40	40	Complies
Residence 6	35	36	Complies	40	40	Complies
Residence 8	21	35	Complies	29	40	Complies
Residence 9	36	36	Complies	41	40	1dB(A) above
Residence 13	35	35	Complies	39	40	Complies
Source: Modified after VMS (2018) – Tables 10 to 12						

Table 6
Predicted Night-time Noise Emissions

Receiver	INP Prevailing Conditions				NPfl Noise Enhancing Weather Conditions		
	Noise Level ($L_{Aeq(15minute)}$)		Project Approval (INP) Noise Limit		Modification $L_{Aeq(15minute)}$	Project Noise Trigger Level (NPfl)	
	Calm	Inversion					
Basalt Extraction Area							
Residence 1	21	27	35	Complies	28	35	Complies
Residence 2	18	25	35	Complies	25	35	Complies
Residence 3	21	27	35	Complies	28	35	Complies
Residence 4	23	29	35	Complies	30	35	Complies
Residence 5	23	29	35	Complies	30	35	Complies
Residence 6	28	32	36	Complies	34	35	Complies
Residence 8	15	23	35	Complies	23	35	Complies
Residence 9	29	34	36	Complies	35	35	Complies
Residence 13	28	32	35	Complies	34	35	Complies
Sand Extraction Area							
Residence 1	20	25	35	Complies	26	35	Complies
Residence 2	16	22	35	Complies	22	35	Complies
Residence 3	18	24	35	Complies	24	35	Complies
Residence 4	24	29	35	Complies	30	35	Complies
Residence 5	23	27	35	Complies	28	35	Complies
Residence 6	30	34	36	Complies	34	35	Complies
Residence 8	16	22	35	Complies	22	35	Complies
Residence 9	32	35	36	Complies	36	35	1dB(A) above
Residence 13	31	34	35	Complies	34	35	Complies
Note 1: VMS (2018) determined that limiting truck loading operations to 3 trucks per 15 minutes would ensure compliance with the Project Noise Trigger Level. Accordingly, the Applicant has committed to limiting truck loading operations before 7:00am to 3 trucks per 15 minutes between April to September.							
Source: Modified after VMS (2018) – Tables 13 and 14							

Table 6 provides the predicted night-time noise emissions received at surrounding receivers, i.e. from 5:00am to 7:00am and 6:00pm to 10:00pm that would be attributable to the loading and/or despatch of up to 3 trucks per 15 minutes of either sand or basalt products. In any event, there would be no more than 10 trucks loaded in any one hour period. Both **Tables 5** and **6** provided the predicted noise emissions under prevailing conditions (against the INP deriver Project Specific Noise Criteria) and noise enhancing weather conditions (against the NPfI Project Noise Trigger Levels).

As identified in one of the public submissions received, a residence on Property 13 was not included in the noise assessment. This receiver (Residence 13) has now been included in the NIA and the noise level received predicted. The location of Residence 13 is identified on **Figure 6**.

The predicted noise levels of **Tables 5** and **6** indicate that subject to the implementation of the proposed noise management measures, the Quarry (as modified) would be likely to comply with the existing Noise Criteria under prevailing conditions at all but Residence 9. A negligible (1dBA) exceedance is predicted under loading and despatch of three product trucks with sand products in a single 15 minute period during temperature inversion conditions.

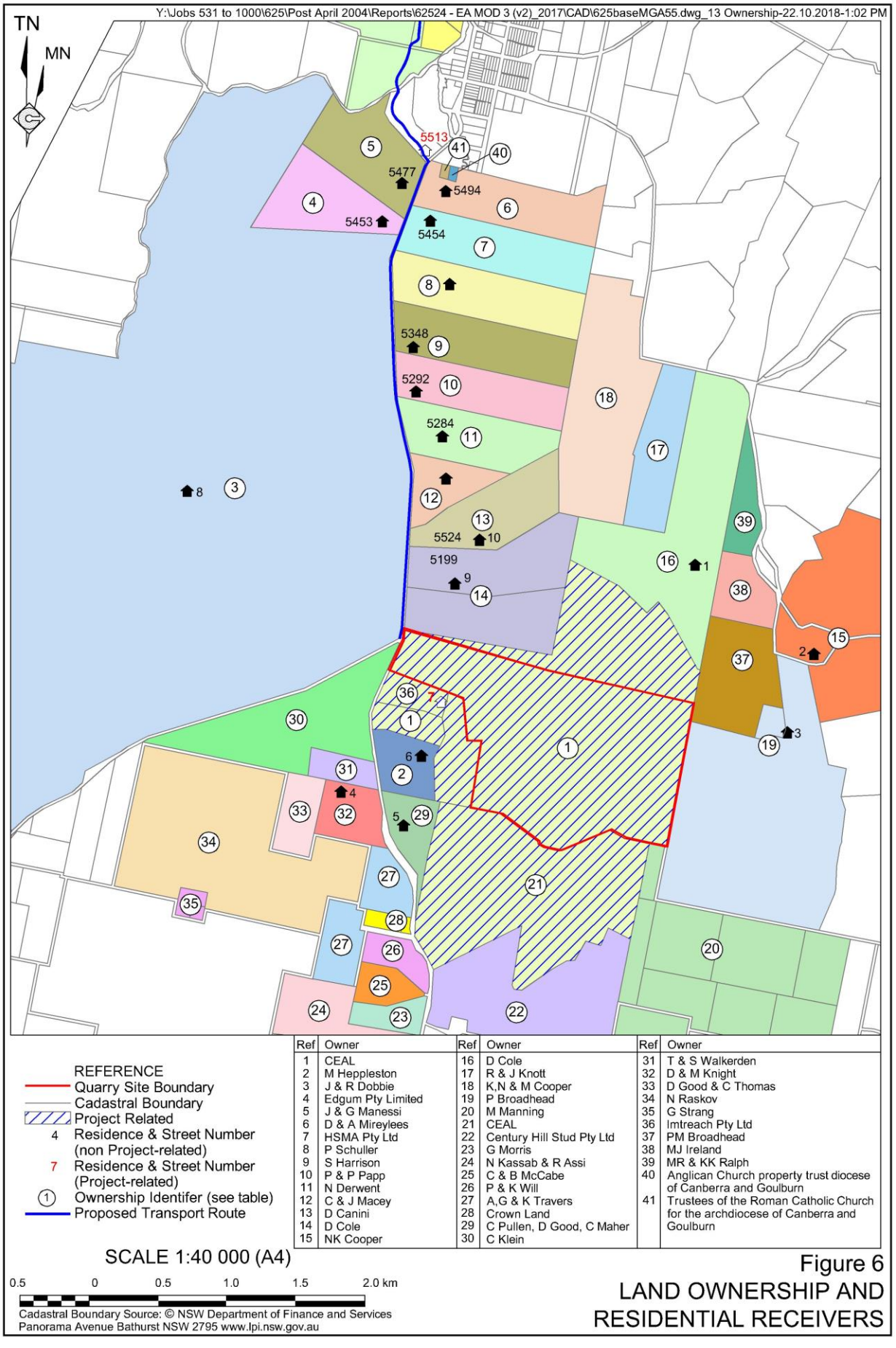
When noise enhancing weather conditions were modelled and compared to the NPfI Project Noise Trigger Levels, compliance with the day time trigger levels was predicted at all but Residence 9 under basalt extraction and cumulative sand and basalt extraction scenario. For night time operations, compliance is predicted when product loading is from the basalt product stockpiles and at all but Residence 9 (1dB(A) exceedance) when loading is from the sand product stockpiles.

On the basis of the above, and in accordance with the recommendations of VMS (2018), truck loading operations between April and September would be limited to three trucks per 15 minute period before 7:00am of either sand or basalt products.

2.11.3 Noise Management and Mitigation

Section 5.4.4 of the *Environmental Assessment* nominated the controls, management and mitigation measures to be applied to reduce noise emissions from the Quarry Site. In addition to these, and reflecting the results of noise monitoring, the Applicant has committed to the following additional controls and management measures.

- Hard rock crushing operations will not be undertaken until the mobile crusher is relocated to the basalt extraction area, i.e. below natural ground level.
- The sand washing plant has been replaced by a model which replaces the current diesel-powered water pump with electric pumps. This effectively removes one of the more constant and higher sound power level sources for the Quarry.
- Product despatch will be limited to three trucks per 15 minute period before 7:00am.



Ref	Owner	Ref	Owner	Ref	Owner
1	CEAL	16	D Cole	31	T & S Walkerden
2	M Heppleston	17	R & J Knott	32	D & M Knight
3	J & R Dobbie	18	K,N & M Cooper	33	D Good & C Thomas
4	Edgum Pty Limited	19	P Broadhead	34	N Raskov
5	J & G Manessi	20	M Manning	35	G Strang
6	D & A Mireylees	21	CEAL	36	Imtreach Pty Ltd
7	HSMA Pty Ltd	22	Century Hill Stud Pty Ltd	37	PM Broadhead
8	P Schuller	23	G Morris	38	MJ Ireland
9	S Harrison	24	N Kassab & R Assi	39	MR & KK Ralph
10	P & P Papp	25	C & B McCabe	40	Anglican Church property trust diocese of Canberra and Goulburn
11	N Derwent	26	P & K Will	41	Trustees of the Roman Catholic Church for the archdiocese of Canberra and Goulburn
12	C & J Macey	27	A,G & K Travers		
13	D Canini	28	Crown Land		
14	D Cole	29	C Pullen, D Good, C Maher		
15	NK Cooper	30	C Klein		

Figure 6
LAND OWNERSHIP AND RESIDENTIAL RECEIVERS

- As the extraction area is developed, activities will be managed to limit the operation of mobile plant at surface before 11:00am during the winter months (when inversions may extend into the approved hours of operations).
- The site-based Environmental Officer will be trained and have access to noise monitoring equipment. During periods when Quarry management suspect noise levels may be elevated, e.g. winter mornings, the Environmental Officer will periodically check noise levels to confirm these are at or below the noise criteria of PA 07_0155 and EPL 13213. Protocols and procedures for this site-based monitoring will be included in an updated version of the Noise Management Plan.
- The conditions of the PRP applied to EPL 13213 will be implemented and modifications to plant and operational activities made as required and in consultation with the EPA.
- At a minimum, a further round of independent noise monitoring would be undertaken in December 2018 to demonstrate compliance.
- The Noise Management Plan will be reviewed and updated to reflect the commitments made in the *Environmental Assessment* and this RTS.

2.12 VOLUNTARY PLANNING AGREEMENT

The Applicant has met and discussed the content of a proposed Voluntary Planning Agreement (VPA) on a number of occasions with Goulburn Mulwaree Council. The Applicant proposes that the VPA is designed and implemented to ensure that funding provided to the Council is utilised to fund:

- roadworks and road maintenance on the product delivery route between the Quarry and Hume Highway, or other roads affected by Multiquip Quarry heavy vehicles; and
- community services, infrastructure and other projects to mitigate or offset any impacts associated with the operation, including transport, of the Quarry on Bungonia and properties adjoining the product delivery route.

The terms of the proposed VPA between Multiquip and Council are as follows.

1. Multiquip will contribute **3.74 cents per tonne per kilometre** travelled on the nominated Council maintained roads, indexed as required by Council. The nominated Council maintained roads are as follows.
    a) Oallen Ford Road between the Quarry Site entrance and Bungonia By-pass (3.43km).
    b) Jerrara Road between Mountain Ash Road and Marulan South Road (14.61km).
2. The contributions have been calculated in line with consumption figures nominated by Pavement Management Services report on Empirical Remaining Life (Report R2017152).

3. Multiquip will rehabilitate the pavement where its life is shown as less than ten years as detailed in the 2018 Pavement Management Services study (Report R2017152) on Jerrara, Mountain Ash and Oallen Ford roads.

4. This contribution is to be allocated to works as follows.

   – Road upgrade and maintenance on the nominated Council maintained roads as above.

   – Community projects within the Bungonia area (see **Term 11**. below).

5. The contributions will be paid **six monthly** to Council and be supported by production/weighbridge records.

   – Council will report annually on contributions received and allocated. Roads are to be maintained with dimensions required to satisfy Stage 3 road upgrade works of PA 07_0155:

      a) two x 3.5m lane width;

      b) two x 0.5m sealed shoulder; and

      c) two x 0.5m unsealed shoulder.

   Road carriage widths of bridges and culverts are to be maintained as at completion of Stage 3 road upgrade works of PA 07_0155.

6. Multiquip will fund and complete the resealing of 50% of the transport route (timing to be confirmed). Contribution to 50% cost may be monetary or through materials and in-kind contributions to same value. It is proposed that the 50% contribution to the pavement rehabilitation is paid back to Council over 5 years in equal instalments.

7. Council will fund and complete the resealing of 50% of the transport route (timing to be confirmed).

8. Council will commission and complete a Road Safety Audit (RSA) at the completion of all roadworks nominated in PA 07_0155.

9. Multiquip will fund and complete structural assessment of bridges / culverts of the transport route prior to the commencement of transport operations under the modified project approval.

10. To account for the funding of pavement rehabilitation (see **Term 3**) and road resealing (see **Terms 6**), the contribution rate will be reduced to zero until the nominal annual contributions equate to any upfront payments if Modification 3 is not approved to allow the transportation of 580 000tpa along the product delivery route.

11. Following the completion of the reseal of the nominated Council roads, 10% of contributions will be retained within a separate **Community Project Fund** for allocation to community (Bungonia and surrounds) projects. Projects for consideration are to be discussed and endorsed at Community Consultative Committee meetings before being presented to Council for consideration and

approval. Projects will not be limited to public infrastructure and may be applied to private landholdings or to individuals where this will further mitigate or offset impacts associated with the Quarry operation.

12. The VPA will be enforced whilst Multiquip uses local roads for the delivery of Quarry products.

Although discussions with Council are well advanced, a formal response has not been received from Council at the time of finalisation of this document. Multiquip will continue to discuss the VPA with Council until it is endorsed by the elected Council. If endorsed, the VPA will be placed on public exhibition and any comments made will be reviewed by both the Applicant and Council and modifications made, if mutually accepted.

In the alternative, in the event that a VPA cannot be successfully negotiated, the Applicant anticipates that contributions will revert to Council's Section 94 Contributions Plan.

2.13 SOCIAL IMPACT ASSESSMENT

2.13.1 Overview

Following the review of the *Environmental Assessment* and consideration of public submissions, the DPE determined that the *Environmental Assessment* does not adequately assess the social impacts that may occur as a result of this modification. The DPE requested that the Response to Submissions (RTS) provide greater consideration of the proposed modification's social impacts, particularly in relation to local amenity, having regard to the DPE's *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development* (September 2017) ("the Guideline").

While noting that the Guideline was published after the DPE had issued assessment requirements for the proposed modification, the following sections provide a Supplementary Social Impact Assessment (SSIA) with reference to the key parameters for social impact assessment identified in *Section 1.1* of the Guideline as follows.

1. **Way of life**, including:
   - how people live, for example, how they get around, access to adequate housing
   - how people work, for example, access to adequate employment, working conditions and/or practices
   - how people play, for example, access to recreation activities
   - how people interact with one another on a daily basis.
2. **Community**, including its composition, cohesion, character, how it functions and sense of place.
3. **Access to and use of infrastructure, services and facilities**, whether provided by local, state, or federal governments, or by for-profit or not-for-profit organisations or volunteer groups.

4. **Culture**, including shared beliefs, customs, values and stories, and connections to land, places, and buildings (including Aboriginal culture and connection to country).
5. **Health and wellbeing**, including physical and mental health.
6. **Surroundings**, including 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.
7. **Personal and property rights**, including whether their economic livelihoods are affected, and whether they experience personal disadvantage or have their civil liberties affected.
8. **Decision-making systems**, particularly the extent to which they can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.
9. **Fears and aspirations** related to one or a combination of the above, or about the future of their community.

Much of the information sourced to address these key parameters was collected during the preparation of the *Environmental Assessment*, during consultation undertaken for previous environmental assessments and through the Applicant's experiences in liaising with those in the Bungonia area and surrounds. This information has been supplemented by detailed review of the submissions to the proposed modification (and previous development applications).

2.13.2 Objectives

The objectives of the SSIA are to:

- better define and describe the local community(ies), community values and issues of greatest importance / concern;
- assess the level of impact on these values; and
- develop management and mitigation strategies to assist in reducing the social impact of the proposed modification on the community(ies)

2.13.3 Methods

2.13.3.1 Introduction

The SSIA has been separated into four key steps and the methods implemented as part of each step are described in Sections 2.13.3.1 to 2.13.3.4.

2.13.3.2 Establish a Social Baseline

This step involves describing the local community with respect to the nine key parameters of the Guideline (see Section 2.13.1). The social values identified for these nine parameters are collectively referred to as the 'social baseline'. Negative changes to this social baseline are the social impacts of the proposed modification.

The social baseline has been determined by compiling and analysing information drawn from a number of sources.

Review Socio-economic Data and Other Published Information

The village of Bungonia, the Quarry Site and a significant portion of the product delivery route occur within the Australian Bureau of Statistics (ABS) State Suburb of Bungonia. As identified on **Figure 7**, the Bungonia State Suburb is centred on the village of Bungonia and extending to Jerrara Creek to the north, the Shoalhaven River and Bungonia State Conservation Area to the east, Jacqua Creek to the south and Mulwaree Creek and Bungonia Creek to the west. The northern-most section of Jerrara Road (north of Jerrara Creek) is located within the Marulan State Suburb (see **Figure 7**).

Census data collected in 2016 was reviewed for the Bungonia and Marulan State Suburbs to generate an overview of the local demographics and other socio-economic features. A comparison to the same (or equivalent) demographic parameters of the Goulburn Mulwaree LGA, as well as those collected for equivalent areas during the 2011 Census, has been completed to assess location specific information and any changes in recent years.

A variety of internet-based information was also reviewed to identify notable features of the local setting and sentiments of the local community. Data was sourced from the following websites:

- Aussie Towns: http://www.aussietowns.com.au/town/bungonia-nsw;
- Bungonia.com: http://bungonia.com.au/;
- Bungonia Times (locally produced monthly newspaper 1992 – 2017): http://bungonia.com.au/bungonia-times/;
- Goulburn Australia website: https://www.goulburnaustralia.com.au/Towns-and-Villages-in-Goulburn-region-Australia/Bungonia.aspx; and
- Real estate websites:
  - https://www.domain.com.au;
  - https://www.realestate.com.au.

Community Consultation (2017 to Present)

Following a decision to proceed with the proposed modification, the Applicant developed a consultation strategy to ensure that the consultation was wide-ranging and inclusive, whilst remaining sufficiently detailed and targeted so as to provide an effective record of the issues most critical for assessment. This strategy involved:

- the establishment of objectives;
- identification of critical stakeholders;

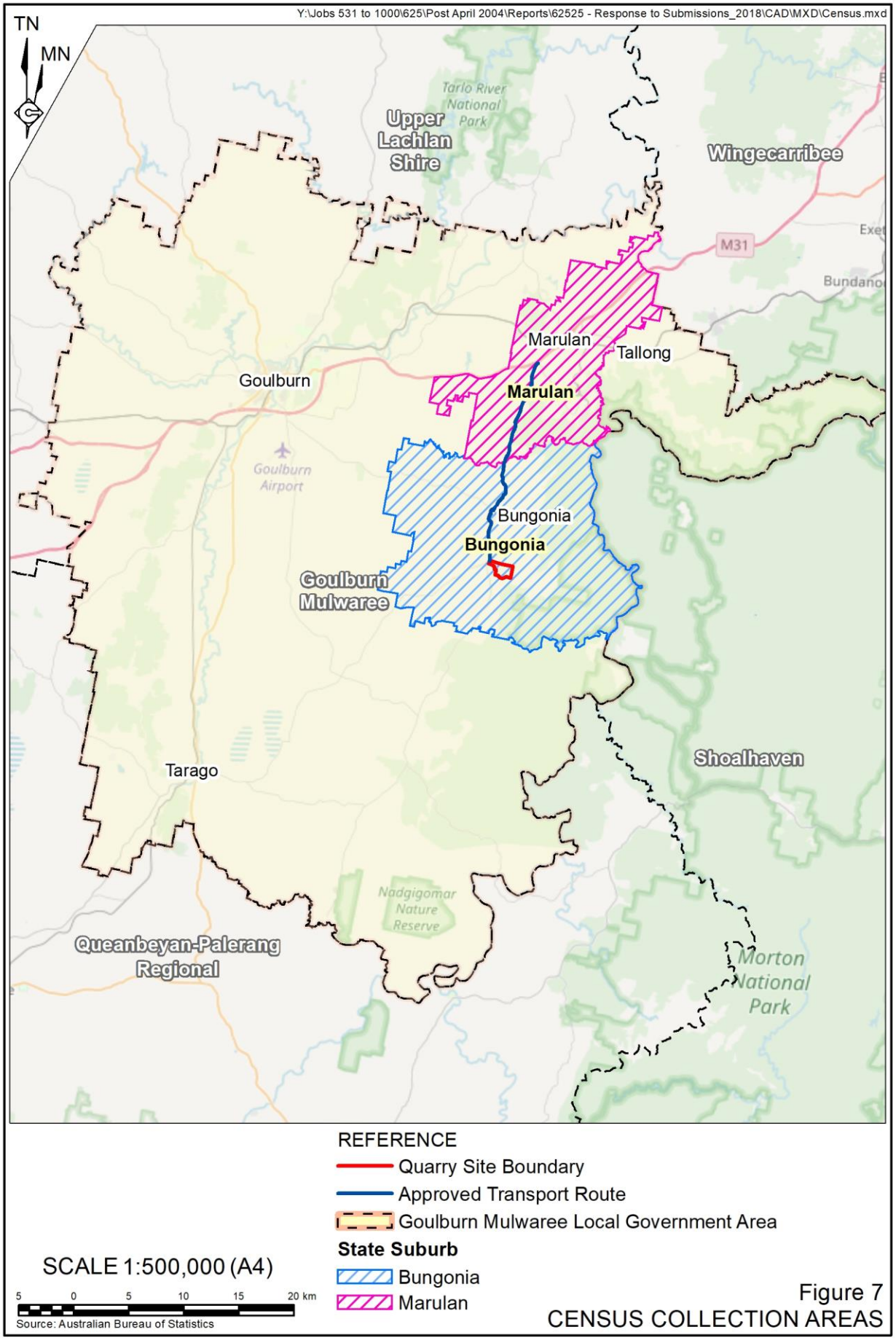


Figure 7
CENSUS COLLECTION AREAS

- development of preferred methods of consultation; and
- evaluation of the results of consultation.

The broad aim of the consultation program was to engage with the local community, community groups, individual landowners or other potentially affected stakeholders to draw together valuable local knowledge and input regarding the proposed modification. More specifically, the objectives of the consultation program were to:

- ensure all relevant stakeholders were identified and provided an opportunity to be involved in the consultation process;
- inform all stakeholders of the proposed modification;
- ensure the methods used to gather information are appropriate and practical to ensure that all relevant inputs are identified; and
- aggregate the information received to provide input, where relevant, to the design and operations of the Quarry.

The following summarises the implementation of this consultation program.

Community Liaison

Since December 2016, the Applicant's Training and Community Liaison Manager, Mr Michael (Mick) Rogers, has averaged 1 to 2 days in the local area every 2 to 3 weeks with the aim of contacting and meeting surrounding landowners, Bungonia residents and other stakeholders. Mr Rogers has encouraged local stakeholders to liaise directly with him when it comes to issues of concern. During 2017, the Applicant is confident that Mr Rogers consulted with all surrounding landowners to discuss Quarry operations and the proposed modification. Attempts to contact and meet with residents of Oallen Ford and Jerrara Roads between the Quarry Site and the Hume Highway have also been made and where direct contact has not been made, invitations to discuss the Quarry and proposed modification with Multiquip have been provided (see '*Letter Distributions and Community Notifications*' below).

Mr Rogers has indicated that he is available 24/7 to respond to community queries or complaints.

Community Consultative Committee Meetings

The Quarry Community Consultative Committee (CCC) comprises an independent chair person, three Multiquip representatives, five current community representatives and two additional positions which may be filled on a permanent or temporary basis. CCC meetings are now held approximately quarterly with the last four meetings held on the following dates.

- 22 June 2018.
- 16 March 2018.
- 1 December 2017.
- 25 August 2017 (which was opened to the public to allow for the proposed modification to be outlined and discussed).

The CCC meetings provide an opportunity for the community representatives to raise matters of importance or concern with the Quarry operator. The matters raised illustrate those features of the local setting most valued by the community.

Bungonia Progress Association

The Bungonia Progress Association (BPA) is a small community organisation which, among other things, aims to promote the local amenity and tourism potential of the local area. The Applicant maintains paid membership to the BPA and attends meetings which are held bi-monthly and generally attended by between 8 and 15 people. At each meeting, a representative of the Applicant responds to any matters relevant to the Quarry and actively encourages the BPA to contact him, if and when issues arise. The matters raised provide insight again into those features of the local setting most valued by the community.

Letter Distributions and Community Notifications

A letter summarising the proposed modification and inviting recipients to contact the Applicant to raise matters of specific concern was distributed to surrounding landowners and the letter boxes (or where there was no letter box in an appropriate location for collection) of the product delivery route. In total, eight letters were delivered to residences within the village of Bungonia, 12 letters were delivered to properties on Oallen Ford Road (between the Quarry and Bungonia), and 62 delivered to properties on Jerrara Road and the smaller roads which intersect Jerrara Road between Mountain Ash Road and the Hume Highway including:

- Prairie Oak Road – four letters;
- Tickner Valley Road – two letters;
- Forrest Close – two letters; and
- Billabong Road – one letter) (see **Figure 8**).

This letter was also provided to the BPA and placed on their Facebook page, as well as being uploaded to the mqquarry.com.au website of the Applicant.

The Applicant also maintained a stall at the Bungonia village market day on 30 September 2017 where personnel were available to answer any questions of the local community on the Quarry operations. At the stall, Multiquip advertised a Road Safety Day to be held at Bungonia on 28 October 2017. A letter/handout was also available at the stall which again summarised the proposed modification and notified community members that the consultant preparing the *Environmental Assessment* would be available at the Road Safety Day to answer questions on the proposed modification.

On Saturday, 28 October 2017, the consultant preparing the *Environmental Assessment* attended a Road Safety Day hosted by the Applicant in Bungonia and liaised with attendees. It is understood that some members of the Bungonia community actively discouraged others from attending, however, it is estimated that over 100 people attended throughout the day (which ran from 10:00am to 3:00pm).

Multiquip Consultation and Community Liaison Review (2003 to Present)

Noting that the Applicant has been active in the local area since 2003, when environmental investigations first commenced on the "Ardmore Park" property (initially for the purpose of a chicken farming enterprise before identification of the significant basalt and sand resources), significant reliance has been placed on information supplied by the Applicant's key personnel including:

- Mr Steve Mikosic: Managing Director of the Multiquip group of companies whose association with the Quarry dates to the initial purchase of the "Ardmore Park" property and inception of the Quarry development proposal. Steve was

centrally involved in consultation with local landowners, the Bungonia community (both individuals and the Bungonia Progress Association) and residents of surrounding villages and localities, e.g. Windellama, Quialigo, Tarago and Marulan over this time through the initial development application and commencement phases of the Quarry (2003 to 2013). Steve has continued to be involved in consultation since 2013, however, has ceded many responsibilities to other Applicant personnel who are in more regular contact with the local community (see below).

- Mr Jason Mikosic: General Manager of Multiquip Quarries. Jason has also been involved with the proposed Quarry development since its inception. Jason has actively participated in consultation with local landowners, the Bungonia community, residents of surrounding villages and localities, e.g. Windellama, Quialigo, Tarago and Marulan, and Goulburn Mulwaree Council over this period. Jason has been present at all community meetings where aspects of the Quarry have been presented and discussed and has been a member of the Ardmore Park Quarry Community Consultative Committee (CCC) since its inception. Jason is keenly aware of the dynamics within the Bungonia and wider community and understands the sentiments of those in the community towards the Quarry.
- Mr Michael (Mick) Rogers: Training and Community Liaison Manager. Mr Rogers has been active in this role since December 2016 and on regular visits to the Quarry has visited local landowners and community groups to discuss Quarry operations and, more recently, road upgrade works. Mr Rogers has encouraged those in the local community to contact him directly with complaints, matters of concern or suggestions. Mr Rogers also attends the Quarry CCC meetings. Through this face to face, telephone, email and CCC contact, Mr Rogers has obtained an excellent understanding as to the dynamics of the Bungonia and wider community, along with the matters of key concern.
- Mr Alexander Cox: Environmental Officer. Employed in this role since January 2017 and based full-time at the Quarry since September 2017. Since that date, Mr Cox has resided on site. He provides a locally based contact for adjoining landowners and the wider community to express concerns or ask questions. Mr Cox has been active in liaising with the local community, through meetings on various landholdings, CCC meetings, meetings with representatives of the Bungonia Progress Association and other community groups and other email or telephone contact. Similar to Mr Rogers, Mr Cox has obtained an excellent understanding as to the key environmental matters of concern to the local community.

The Mikosic's have owned and managed the "Ardmore Park" property for 15 years and have regularly visited the property and Bungonia over that time. Their experience in consulting with neighbouring landowners and the Bungonia community, both positive and negative, has been relied upon to gain an understanding of the social values held by the local community and the issues of greatest concern.

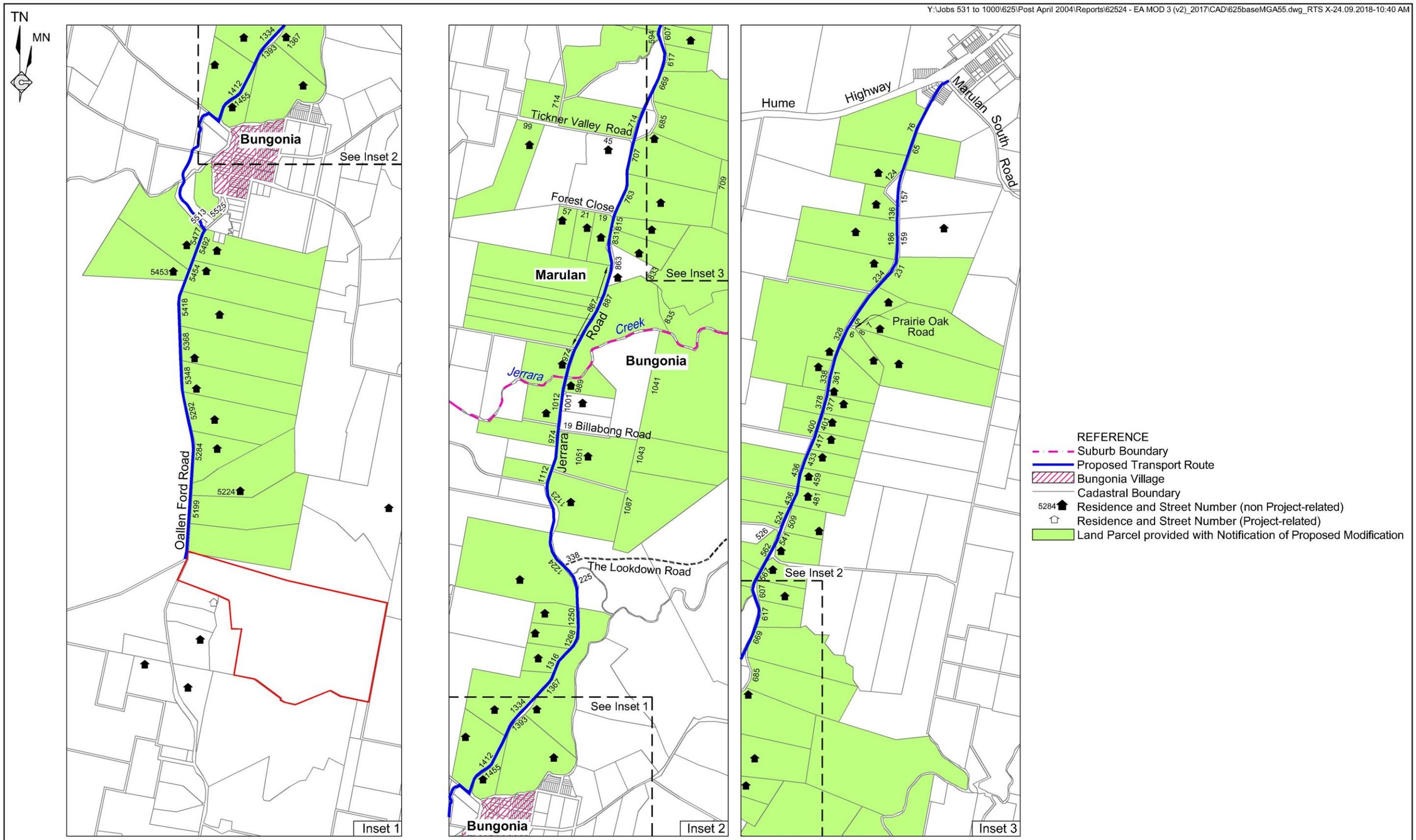


Figure 8
LETTER DISTRIBUTION - AUGUST 2017

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In order to document the knowledge and experience of these key Applicant personnel, a workshop was held in Goulburn with both Michael Rogers and Alexander Cox where information on the following was discussed and documented.

- Local land ownership and land use was reviewed.
- Key community groups and associations, including key members, were identified and defined. Information as to whether there were distinct groups within the local area, as defined by location, land use, interest or opinion on the Quarry was also obtained and influence on community cohesion reviewed.
- Consultation undertaken for the purpose of the proposed modification was analysed in more detail (with greater focus on social values and issue identification). Impediments to consultation efforts were also discussed where relevant.
- Local opposition to the Quarry operations was discussed, with opponents categorised based on issues of primary concern.

Desktop Review of Community Events and Functions

A desktop review of community related information was undertaken.

- Review of CCC meeting minutes and the matters raised.
- Review of historic issues of the Bungonia Times. Published between 1992 and December 2017, this publication provided editorial information on matters affecting Bungonia and surrounds, notification of upcoming events, information on local services and community organisations, community contacts and business directory.
- Search for and review of articles relevant to Bungonia and the Quarry in the Goulburn Post.
- Review of the Bungonia.com.au website which includes links to local groups, meetings and events.
- Review of the Bungonia Progress Association Facebook page. The page has over 420 followers and provides a forum for local issues to be raised.

Analysis of Submissions (2013 and 2018)

Each of the 49 submissions lodged following public exhibition of the *Environmental Assessment* were reviewed in search of statements expressing information on the social values or factors which contribute to their appreciation of the social setting. These statements were then assigned against one or more[3] of the nine key parameters of social impact assessment identified in Section 2.13.1.

[3] An individual statement could express an opinion on more than one parameter.

Once all statements were assembled, they were further categorised into themes and based on the number of submissions referencing a particular theme, those features of the social setting of greater significance have been identified.

A review of 26 of the 110 submissions received following the 2013 application for a modification to PA 07_0155 (which was approved), which were identified as referencing local amenity, was also completed to assess whether there has been any change in social setting over the intervening five years. The same approach to identifying, assigning and categorising statements in the submissions was followed described for the 2018 submissions.

2.13.3.3 Identify and Evaluate Key Impacts

Once a social baseline was established, the key matters associated with the proposed modification likely to result in impacts against this baseline was completed. This analysis draws upon a review of the submissions received, as well as:

- complaints and CCC meeting minutes;
- performance vs predictions from previous assessments; and
- social impacts attributable to similar projects with significant transport routes.

For the various issues affecting the social baseline identified, the significance of each potential negative social impact (without mitigation) has been evaluated. The evaluation considers:

- who is expected to be adversely affected and the level of concern they feel about the matter;
- when the potential negative social impact is expected occur;
- the four social impact characteristics of extent, duration, severity and sensitivity; and
- the potential impact in terms of the likelihood and consequence of the impact.

The evaluation takes into account the predicted impacts contained within the *Environmental Assessment*, specialist assessment provided as appendices to the *Environmental Assessment* or supplementary investigations or information presented in Sections 2.2 to 2.11.

2.13.3.4 Impact Management and Mitigation Measures

Following evaluation of the key impacts on the social baseline, measures which could be implemented to avoid, reduce, manage or mitigate these impacts were reviewed and discussed with the Applicant. Those measures which were identified as having a positive effect on social impacts, and were determined to be reasonable and feasible, have been adopted by the Applicant and considered in the assessment of residual social impacts.

2.13.3.5 Assessment of Social Impact

After consideration of all proposed management and mitigation measures, the residual social impacts of the proposed modification are identified. These are then considered against the benefits of the modified Quarry operations, to both the local and broader community in order to assess whether the proposed modification is in the public interest.

2.13.4 The Social Baseline

2.13.4.1 Local Setting

The Goulburn Mulwaree LGA is located in central New South Wales, about 200km southwest of the Sydney CBD, and 95km northeast of the Canberra CBD. The LGA is bounded by Upper Lachlan Shire in the north and west, Wingecarribee Shire and Shoalhaven City in the east, and the Queanbeyan-Palerang Regional Council area in the south. The LGA is predominantly rural, with the major centre being Goulburn in which approximately 76% of the LGA's 29 609 inhabitants reside. The remaining inhabitants are spread amongst a number of smaller villages and localities across the LGA, including Bungonia, Lake Bathurst, Marulan, Tallong and Tarago. Land is used largely for agriculture, particularly sheep grazing, with some cattle grazing and boutique industries.

Bungonia is located approximately 25km southeast of Goulburn. The Bungonia district was originally settled in the 1820s with the village plan drawn up in 1832[4]. There are a number of historic buildings within the village including the old Hotel Victoria (1837), St. Michael's Catholic Church (1839[5]) and the old Parsonage (1841) and an active historical society maintains significant interest in the conservation and maintenance of these structures. A significant proportion of the original settlers of Bungonia were convicts, ex-convicts or 'ticket of leave' men and women employed on the four or five larger properties of the area. These large properties have been subsequently sub-divided, however, large remnants remain on the "Lumley Park", "Reevesdale" and "Inverary Park" properties.

Many properties of the Bungonia areas continue to graze sheep or cattle, for which the locality was originally settled, however, land use is now far more diverse and includes:

- other agricultural activities such as mixed farming, and specialty crops/livestock such as olives, alpacas and wine grapes;
- a winery/nursery;
- motor racing circuit and driver training facility;
- quarries; and
- residential blocks within Bungonia village and sub-divisions located on several roads emanating from Jerrara Road.

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[4] https://www.goulburnaustralia.com.au/Towns-and-Villages-in-Goulburn-region-Australia/Bungonia.aspx?gclid=CjwKCAjw54fdBRBbEiwAW28S9oPoSfuR-k3FsTAoQfg228HI4rT1S9uD2XiXeLYFZlIe9SCgqYoSbBoC1u8QAvD_BwE

[5] St Michaels is identified as the oldest Roman Catholic Church in Australia and was consecrated in 1847 (http://www.aussietowns.com.au/town/bungonia-nsw)

While several property owners derive their primary income from on-property activities, many residents of Bungonia commute to and from Goulburn and other locations for their primary employment. The choice to reside in the local area is made based on factors associated with the local setting. On review of information gathered from local community organisations and committees, web-based social forums, discussions between the Applicant and residents and review of submissions on this and previous proposals, the landowners and residents can be categorised into one of three broad categories.

1. Long-term residents who have chosen to remain in the area to undertake agricultural activities on their properties or enjoy retirement.
2. More recent arrivals who have moved to the locality to enjoy the natural beauty, slower and more peaceful lifestyle. Some of these arrivals have established specialty income deriving activities on their properties, however, continue to work in Goulburn or other larger centres.
3. Landowners who travel to and from the area from Sydney, Canberra or other larger centres for weekends or restricted periods ("weekenders").

While certainly a core group of families and individuals remains the cornerstone of the Bungonia community, a review of real estate sales confirms there is a reasonable turnover of landowners and residents year on year. On average, 12 to 13 sales are registered annually and as most of these in recent years have included a dwelling, this indicates 3% to 4% of dwellings[6] are sold annually.

2.13.4.2 Census Data

The following demographic data was sourced primarily from the Australian Bureau of Statistics (ABS) 2011 and 2016 census data. All data has been gathered from the community profile tables and quick data sets from the ABS website (http://www.abs.gov.au/). The data was compiled and reviewed to assist in establishing the socio-economic conditions and setting of the Quarry Site and product delivery route.

Population and Age Characteristics

Table 7 presents the population data from both the 2011 and 2016 census. Population growth within the Goulburn Mulwaree LGA between 2011 and 2016 was slightly lower than the NSW average, with a 7.7% population gain, compared with an 8.1% gain for NSW as a whole. While the population of the Bungonia SS increased slightly between 2011 and 2016, the population of the Marulan SS decreased slightly.

[6] ABS 2016 Census QuickStats (http://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC10685) identifies 282 dwelling with nth Bungonia State Suburb.

Table 7
2006 and 2011 Census Population Statistics

	Bungonia SS		Marulan SS		Goulburn Mulwaree LGA			NSW		
	2011	2016	2011	2016	2011	2016	%	2011	2016	%
Total	355	367	1 382	1 178	27 481	29 609	7.7	6 917 658	7 480 228	8.1
Males	181	182	700	606	13 881	14 982	7.9	3 408 878	3 686 014	8.1
Females	174	191	682	570	13 600	14 631	7.6	3 508 780	3 794 217	8.1
Source: ABS 2011 and 2016 Census										

Table 8 presents the 2016 Census population data broken down by age. In summary, in comparison to the Goulburn Mulwaree LGA and NSW, the Bungonia SS had:

- a higher proportion of people aged 10 to 14;
- a significantly lower proportion of people aged 15 to 39; and a
- higher proportion of people in all age categories between 40 and 84.

Table 8
2016 Census Age Statistics

	Bungonia SS		Marulan SS		Goulburn Mulwaree LGA		NSW	
	No	%	No	%	No	%	No	%
Children								
0-4	11	3.0	68	5.8	1 742	5.9	465 135	6.2
5-9	17	4.6	105	8.9	1 871	6.3	478 184	6.4
10-14	27	7.4	86	7.3	1 762	6	443 009	5.9
Studying or Working								
15-19	16	4.4	60	5.1	1 741	5.9	448 425	6
20-24	9	2.5	60	5.1	1 669	5.6	489 673	6.5
25-29	13	3.5	57	4.8	1 769	6	527 161	7
30-34	12	3.3	60	5.1	1 795	6.1	540 360	7.2
35-39	14	3.8	70	6.0	1 663	5.6	499 724	6.7
40-44	34	9.3	78	6.6	1 860	6.3	503 169	6.7
45-49	32	8.7	86	7.3	1 984	6.7	492 440	6.6
50-54	38	10.4	75	6.4	2 060	7.0	485 546	6.5
Approaching Retirement or Retired								
55-59	31	8.4	78	6.6	2 025	6.8	469 726	6.3
60-64	34	9.3	74	6.3	1 923	6.5	420 044	5.6
65-69	31	8.4	79	6.7	1 812	6.1	384 470	5.1
70-74	22	6.0	60	5.1	1 437	4.9	292 556	3.9
75-79	13	3.5	36	3.1	1 043	3.5	217 308	2.9
80-84	10	2.7	32	2.7	713	2.4	155 806	2.1
85+	3	0.8	12	1.0	738	2.5	167 506	2.2
Total	**367**		**1 178**		**29 609**		**7 480 228**	
Median Age	**49**		**41**		**42**		**38**	
Source: ABS 2016 Census								

This suggests that while the overall age demographic of the Bungonia SS is biased towards people in their later working lives, with a median age of 49, there is still a significant proportion of the population made up of families with school-age children. The data for the Marulan SS is also suggestive of a substantial number of families with school-age children, but a lower proportion of younger adults.

In the Bungonia SS, the median age increased by two years between 2011 and 2016.

Employment

Table 9 presents employment statistics and indicates that the percentage of people involved in full-time work within the Bungonia SS (52.8%) is lower than that for Marulan SS (57.8%), Goulburn Mulwaree LGA (57.9%) and NSW (59.2%). Part-time employment is also lower in the Bungonia SS (27.8%) compared to the Marulan SS (30.4%), Goulburn Mulwaree LGA (30.4%) and NSW (29.7%). Correspondingly, unemployment rates are also higher in the Bungonia SS than in the Marulan SS and the Goulburn Mulwaree LGA, which are closer to the proportion across NSW.

Table 9
2016 Census Employment Statistics

	Bungonia SS	Marulan SS	Goulburn Mulwaree LGA	NSW
Employed				
Full-time	93 (52.8%)	302 (57.8%)	7 861 (57.9%)	2 134 521 (59.2%)
Part-time	49 (27.8%)	159 (30.4%)	4 121 (30.4%)	1 071 151 (29.7%)
Employed, away from work	11 (6.2%)	17 (3.2%)	494 (3.6%)	107 652 (2.9%)
Employed, hours not stated	3 (1.7%)	14 (2.7%)	243 (1.8%)	67 003 (1.8%)
Total	**157**	**492**	**12 722**	**3 380 332**
Unemployed, Looking for				
Full-time work	8 (4.5%)	17 (3.2%)	526 (3.9%)	123 987 (3.4%)
Part-time work	6 (3.4%)	16 (3.1%)	326 (2.4%)	101 567 (2.8%)
Total	**18**	**30**	**851**	**225 546**
Labour Force Participation				
Total labour force	176	522	13 569	3 605 881
Not in labour force	117	347	8 848	2 088 240
Labour force status not stated	18	49	1 820	399 773
Total persons	**312**	**921**	**24 238**	**6 093 895**
Labour force participation	**56.1%**	**56.7%**	**60.0%**	**59.2%**
Source: ABS 2016 Census				

Industry of Employment

Table 10 presents employment by industry statistics. The two most significant industries of employment in the Bungonia SS are agriculture, forestry and fishing; and construction, both employing 12.7% of the workforce. Notably, while the mining industry employs 1.9% and 1.6% of the workforce in the Bungonia SS and the Goulburn Mulwaree LGA respectively, it employs 7.1% in the Marulan SS, more than 7 times the proportion for NSW as a whole.

Table 10
2016 Census Industry of Employment Statistics

Industry	Bungonia SS		Marulan SS		Goulburn Mulwaree LGA		NSW	
	No.	% of Labour Force	No.	% of Labour Force	No.	% of Labour Force	No.	% of Labour Force
Agriculture, forestry & fishing	20	12.7	23	4.7	478	3.8	72 625	2.1
Mining	3	1.9	35	7.1	204	1.6	31 736	0.9
Manufacturing	12	7.6	28	5.7	705	5.5	197 331	5.8
Electricity, gas, water & waste services	0	0.0	4	0.8	155	1.2	31 881	0.9
Construction	20	12.7	66	13.4	1 174	9.2	282 491	8.4
Wholesale trade	3	1.9	9	1.8	233	1.8	103 722	3.1
Retail trade	12	7.6	36	7.3	1 366	10.7	326 396	9.7
Accommodation & food services	9	5.7	51	10.4	994	7.8	239 222	7.1
Transport, postal & warehousing	4	2.5	43	8.7	642	5.0	158 760	4.7
Information media & telecommunications	0	0.0	3	0.6	111	0.9	73 398	2.2
Financial & insurance services	3	1.9	9	1.8	177	1.4	167 259	4.9
Rental, hiring & real estate services	0	0.0	8	1.6	181	1.4	59 652	1.8
Professional, scientific & technical services	6	3.8	20	4.1	499	3.9	274 078	8.1
Administrative & support services	4	2.5	17	3.5	398	3.1	117 482	3.5
Public administration & safety	13	8.3	19	3.9	1 386	10.9	204 173	6.0
Education & training	7	4.5	24	4.9	942	7.4	282 568	8.4
Health care & social assistance	10	6.4	46	9.3	1 902	15.0	422 195	12.5
Arts & recreation services	3	1.9	3	0.6	159	1.2	51 775	1.5
Other services	9	5.7	23	4.7	532	4.2	124 477	3.7
Inadequately described/Not stated	15	9.6	28	5.7	493	3.9	159 108	4.7
Total	**157**		**492**		**12 722**		**3 380 332**	
Source: ABS 2016 Census								

Income

Table 11 presents income statistics from the 2016 Census and indicates that the median individual, family and household incomes in the Bungonia SS are lower than those in the Marulan SS, Goulburn Mulwaree LGA and NSW.

In the Bungonia SS between 2011 and 2016, median weekly individual income increased slightly from $526 to $544, while median family income decreased from $1,208 to $1,140, and household income fell from $1,187 to $1,025.

Table 11
2016 Census Income Statistics

	Bungonia SS	Marulan SS	Goulburn Mulwaree LGA	NSW
Median individual income ($/weekly)	544	562	625	664
Median family income ($/weekly)	1 140	1 380	1 505	1 780
Median household income ($/weekly)	1 025	1 143	1 196	1 486
Source: ABS 2016 Census				

Education

Table 12 presents post-school education statistics from the 2016 Census. The data indicates that the proportion of people aged 15 years and over with a qualification who hold bachelor degrees in the Bungonia SS (14.5%), the Marulan SS (13.0%) and the Goulburn Mulwaree LGA (13.7%) is roughly half that in NSW as a whole (26.3%). The percentage with postgraduate degrees in Bungonia SS (7.2%) was significantly higher than in the Marulan SS (1.4%) and the Goulburn Mulwaree LGA (3.6%), but still lower than the state average of 9.3%. By contrast, the proportion holding certificate-level qualifications in all three areas is significantly higher than across NSW (29.7%), with the percentage in the Marulan SS (52.4%) substantially higher again than in Bungonia SS (41.6%) and the Goulburn Mulwaree LGA (41.0%).

Table 12
Post School Level of Education

Education Level	Bungonia SS	Marulan SS	Goulburn Mulwaree LGA	NSW
Postgraduate Degree Level	12 (7.2%)	7 (1.4%)	508 (3.6%)	344 490 (9.3%)
Graduate Diploma and Graduate Certificate Level	0 (0.0%)	4 (0.8%)	341 (2.4%)	103 340 (2.8%)
Bachelor Degree Level	24 (14.5%)	63 (13.0%)	1 935 (13.7%)	976 888 (26.3%)
Advanced Diploma and Diploma Level	19 (11.4%)	60 (12.4%)	2 068 (14.6%)	543 142 (14.4%)
Certificate Level	69 (41.6%)	253 (52.4%)	5 811 (41.0%)	1 100 959 (29.7%)
Level of education inadequately described	0 (0.0%)	4 (0.8%)	163 (1.2%)	58 379 (1.6%)
Level of education not stated	42 (25.3%)	94 (19.5%)	3 352 (23.7%)	582 903 (15.7%)
Total	**166**	**483**	**14 169**	**3 710 095**
Source: ABS 2016 Census				

Summary

The key outcomes of the review of Census data with respect to the social baseline is as follows.

- The local setting, in particular the Bungonia SS, is skewed to older residents, many of whom are likely to be retirees, or approach retirement and families with school age children.
- The employment statistics confirm that while there is a proportion of residents who work on their properties (in agriculture), the majority work in industries requiring a commute to Goulburn or other larger centres.
- The employment statistics reinforce that there is an existing and significant extractive industries sector in the region, centred around Marulan.
- The median income of the local communities is below the state average which would suggest people may be more susceptible to changes in socio-economic circumstances locally (both positive and negative).

2.13.4.3 Community Organisations and Function

In addition to the Bungonia Progress Association (referenced in Section 2.13.2.1), several other community groups are active within Bungonia.

- Bungonia Brigade of the Rural Fire Service. Many in the local community are active members of this community serviced organisation. The RFS Shed is located within Bungonia and monthly meetings are held at the Bungonia Hall.
- The Bungonia Park Trust is a seven member Trust for the NSW Department of Lands formed to administer the management the public recreation area of Bungonia. The public recreation area, which fronts Bungonia Creek and provide BBQ, caravan and camping facilities, is identified on the Goulburn Mulwaree Local Environment Plan as having biodiversity values. Members of the Trust include local residents of Bungonia who have overseen several improvements which include:
  - Rehabilitation of the creeks as part of its larger village beautification plan by removing weeds, encouraging regeneration of local native vegetation, planting native shrubs and trees where necessary and stabilising the stream bed of Woodwards Creek.
  - Removal of willows from Bungonia Creek.
  - Development of a Park Walk, garden around the War Memorial, replacement of play equipment and construction of covered seating areas.

    There is very little funding available to the Bungonia Park Trust other than grants received from the NSW government. It is understood Goulburn Mulwaree Council has indicated an interest in taking on the responsibilities of the Trust with contributions obtained through a VPA potentially available for funding further projects.
- Rural Lifestyle Resident Action Group is an unincorporated group with membership including some residents of Bungonia and surrounds. While no stated objectives of this group are available, the Applicant has consulted with several members over the last 18 months and understands their primary interest to be the maintenance of the local area as a peaceful rural setting.
- Country Women's Association of NSW (CWA). A number of women in the Bungonia community are members of the Bungonia branch of this state-wide organisation. The Bungonia branch meets semi-regularly and is involved in assisting to reduce isolation amongst members and others in the local area.
- Bungonia & District Historical Society. With some executive common to the Bungonia Park Trust and Bungonia Progress Association, this organisation meets semi-regularly to discuss matters relating to local heritage.
- Other local groups or organisation include the Jacqua Creek Landcare Group and Rural Watch. The executive of these groups are common to those of the other referenced organisations.

The Bungonia Progress Association (BPA) maintains a website and calendar of local events to inform the community of local events and services. The executive and membership of the various community groups and organisations are common between these with most holding meetings the Bungonia Hall, managed and maintained by the BPA. The Bungonia Hall is the focal point for most community events with regular activities including:

- a weekly hot meal ($15) is prepared from 'Judy's Kitchen';
- a weekly bus service to Goulburn;
- village markets hosted by the BPA throughout the year (including Easter Saturday and the long weekend); and
- ad hoc community meetings and functions which are called from time to time.

The other main location for community gatherings is the old cricket pitch (Lot 2 DP735523) next to the cemetery to the south of Bungonia (now owned by the Applicant) which has been used for larger, open events.

Overall, the Bungonia community while reasonably small, maintains an active and cohesive structure. The distribution of information is well managed through regular meetings at the Bungonia Hall and active use of the internet and social media (e.g. Facebook) and those in the local community actively participate in community events and functions.

Until 2017, a monthly newspaper ("the Bungonia Times") was maintained. With its discontinuation, there is a risk that there could be a reduction in interaction as events and contact numbers are not advertised through this medium. The newspaper also functioned as a medium for issues of local concern to be raised and discussed (through editorial and responses via the BPA Facebook page). The dissemination of information is now restricted to the various community group meetings, social media and word of mouth. With the executive and membership to many of the community groups and organisations largely common, there is some risk that some ideas and opinions of some community members may be discouraged or disregarded.

2.13.4.4 Community Values and Concerns (Key Social Parameters)

As part of all consultation undertaken, the Applicant aimed to identify information on the following key matters.

- What is it about the Bungonia community / local setting which is most valued?
- What is it about the Quarry, approved and proposed, that is of concern?
- Is there anything that can be done or provided to address these concerns?

Table 13 provides a summary of the responses in relation to these issues following the consultation undertaken and documented in Section 2.13.2.1.

Table 13
Identified Themes for Key Social Parameters

Consultation	Issue	Results
Community Liaison (Individual landholders / stakeholders)	Values	Quiet rural setting / tranquillity Natural beauty Access to water resources Safety on roads / safe environment for children
	Concerns	Increased truck movements / potential for road accidents Increased noise (quarry and trucks) Impact on local amenity as a result of truck movements before 7am and after 6pm. Pollution through dust emissions / discharges from the Quarry Reduction in access to local groundwater Change to the amenity of the local area. Transformation from a quiet rural setting to a major thoroughfare for trucks and construction materials to Sydney. Contamination as a result of dumping of 'waste materials' on the Quarry Site.
	Suggestions	Don't increase the number of truck movements or hours of operations
Community Consultative Committee	Values	Quiet rural setting with opportunities for all landowners and residents Cohesive and engaged community Legitimate 'community' amongst landowners and residents
	Concerns	Size, scale and potential impacts of pre-coating activities Effect of extended hours of operations to residents on product delivery route Impact on tourist traffic and visitation Road safety
	Suggestions	Contributions to community projects welcomed and appreciated
Bungonia Progress Association	Values	Quiet rural setting / tranquillity of the region Not a major urban centre Perfect location to raise children
	Concerns	Road safety Impacts on wildlife Changes to the amenity of the local area
	Suggestions	Continued contribution to community events
Letter Distribution (no formal responses received, however, comments to the BPA Facebook page were reviewed)	Values	Bungonia is a quiet village Natural beauty and wildlife
	Concerns	Potential for road accidents Safety for school children Changes to local amenity / enjoyment of local properties and environment
	Suggestions	-

Table 13 (Cont'd)
Identified Themes for Key Social Parameters

Consultation	Issue	Results
Bungonia Market Stall / Road Safety Day	Values	Escape from stress of urban life Quiet rural setting / tranquillity of the region Access to water resources
	Concerns	Impact on local amenity through increase hours of operation Potential for road accidents
	Suggestions	Continue communication Continue community engagement
Community Liaison Review (2003 to Present)	Values	Quiet rural setting Clean air / environment Local history / heritage buildings Features of the natural environment such as local creeks, nearby conservation areas and rural vistas Community relationships Access to water resources
	Concerns	Change to the amenity of the local setting Change to the structure of the local community
	Suggestions	Create an off-site stockpiling location for movement of product outside of approved hours of operation

In addition to reviewing the active consultation completed for the proposed modification, the public submissions received following exhibition of the current and previous (2013) applications to modify DA 344-11-2001 were reviewed. This review focused on identifying the key themes raised in the submissions as relevant to the key social parameters identified in *Section 1.1* of the Guideline. **Table 14** identifies the key themes with respect to each of these parameters.

Table 14
Identified Themes for Key Social Parameters

Parameter	Themes (No. submissions where referenced)	
	2013	**2018**
Way of life (With respect to: how people live; how people work; how people play; and how people interact with one another on a daily basis)	Peace and quiet / Country lifestyle / Tranquillity (7) Low noise environment (1)	Rural landscape and lifestyle / not urban (9) Peace and quiet / country lifestyle (7) Tranquillity (5) Low noise environment (4) Clean air / health (1) Shift workers (2) Reliance on groundwater (1)
Community (composition, cohesion, character, how it functions and sense of place)	Lack of trust for Multiquip (2) Rural focus (3) Effect on community organisations (CWA) or emergency services (1)	Rural setting (9) Reference to 'we' (7) Reference to long-term residents (3) 'Quiet Community Village' (3) Focus on tourism (3) Families friendly environment (1)

Table 14 (Cont'd)
Identified Themes for Key Social Parameters

Parameter	Themes (No. submissions where referenced)	
	2013	**2018**
Infrastructure	Damage to roads (5) Impact on rate payers (1)	Damage to roads (6) Disruption caused by road works (1)
Culture (shared beliefs, customs, values and stories, and connections to land, places, and buildings)	Larbert Tree (2) Reevesdale property (1)	"We were here first" (10) Slower pace of life (10) Enjoyment of property (2) Heritage of Bungonia (1)
Health and Well-being (physical and mental health)	Road safety (7) Moved for health reasons (3) Emissions (1)	Safety on roads (11) Mental health / general well-being (4) Loss of sleep (2)
Surroundings (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)	Wildlife Mortality (2)	Groundwater concerns (15) Traffic / trucks (10) Amenity (rural) (9) Wildlife mortality (5) Creeks and streams (2)
Personal and property rights (whether their economic livelihoods are affected, and whether they experience personal disadvantage or have their civil liberties affected)	Property values (3) Impact on business (1)	Groundwater decline related reduction in income (8) Property value (6) Costs borne by rate payers (2)
Decision Making Systems (the extent to which they can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms)	Lack of trust (2) Community ignored (1)	Non-compliance (8) Concern over regulation / government (5) Tired of fighting (4) Community ignored (2)
Fears and aspirations	Road safety (15) Danger to children (2) Reduced amenity (2) Tourism (1)	Amenity destroyed (20+) Road safety / accidents (10) Water depletion (8) Impact on tourism (3) Development creep (3) Contamination (3) Disruption to lifestyle (1)

After assessment of the consultation (**Table 13**) and public submissions (**Table 14**), the key values and concerns of the local community can be summarised as follows for each of the key social parameters.

1. **Way of life**

   The dominant themes relate to the importance placed on the rural landscapes and amenity of the local area. Numerous residents nominated the tranquillity or peace and quiet of the local area as being of great value to them. This was consistent between those longer term residents as well as a number who identified that these factors influenced their decision to move to or stay in Bungonia.

It is evident that while some people residing in the Bungonia area derive an income from their property(ies), many travel to and from Goulburn or other larger centres for work. As a result, many use the local roads to commute to and from Goulburn or the Hume Highway. Others rely on the peaceful and quiet local setting to obtain adequate rest between shift-work. In each case, the effect of increased truck traffic on these roads is of concern.

Many of the property owners identified how they valued their recreational time spent on their properties.

The clean air and low noise were also commonly mentioned with concerns raised over how the Quarry would impact on these environmental factors.

2. **Community**

The submissions confirm a strong belief that Bungonia is a rural community, with those living here choosing to do so to enjoy the slower pace of life away from big cities and towns. Many of the submissions preface their statement of values or concerns with 'we', implying that this is the view or feeling of others in the local area.

While not all in the local community oppose the Quarry operation, a common theme to many of the submissions was either a direct statement or implication that the community was here first and that residents shouldn't have to put up with the disruption caused by the Quarry. Anti-Quarry sentiments has been a potentially unifying matter amongst those residing in Bungonia, on Jerrara Road to Marulan and local properties south of Bungonia who might otherwise have different values and concerns. It is evident that many of the community members objecting to the Quarry now objected to the original application proposed back in 2004.

A number of the submissions, both in 2013 and 2018, referenced the potential for Bungonia to be identified as a tourist destination rather than the location of quarry supplying Sydney markets. This relates to a feeling amongst the local community that Bungonia should be valued for its historic significance, rural ambience and natural beauty.

3. **Access to and use of infrastructure, services and facilities**

The common commentary in many of the submissions is concern over the shared road infrastructure, the potential damage to this which would be caused by the Quarry trucks and the costs which will be borne by the Council (and therefore rate payers) to maintain these roads.

4. **Culture**

Attention is given in several submissions to the historic significance of Bungonia and the local area. The existence and active participation in a historical society for Bungonia and districts highlights this value.

The most significant theme in relation to culture, however, is the repeated reference to the rural setting and slower pace of life.

5. **Health and wellbeing**

The potentially detrimental effects of increased heavy vehicle movements on local roads is a common theme, both in 2013 and 2018. Concerns over injury or fatalities on local roads is a key issue for most of those consulted.

There are also a number of residents in the local area who identify the clean air and peaceful setting as important to existing health issues. These residents are concerned that the Quarry will reduce the benefits the local setting has on their health.

Others are concerned over the mental health implications the proposed increase in truck traffic might have on themselves and others.

6. **Surroundings**

Many submissions, particularly those of 2018, reference several key aspects of the natural and built environment.

– The reliance on groundwater of many residents.

– The high value placed on the rural amenity.

– The high value placed on the wildlife of the local setting.

7. **Personal and property rights**

A number of those objecting to the proposed modification identify the fact that they rely on groundwater for the income deriving activities on their properties. There is high value placed on the rights of local landholders to equitable access to this resource.

There is also a concern that the Quarry has, or will have, a negative impact on property values resulting in personal disadvantage.

There is a sense among those who oppose or object to the Quarry that their concerns and objections have not been appropriately considered by the Applicant or the various government agencies responsible for approving and regulating the Quarry. There is a feeling that the rights of the local community have been diminished.

8. **Decision-making systems**

Whilst not representative of the whole community, there are some in the Bungonia area who reference a distrust of the Applicant and believe that complaints are not addressed adequately. Others admit to becoming tired of fighting the Applicant and government on matters related to their opposition or concerns over the Quarry.

There is a feeling amongst some that the community is ignored both by the Applicant and government regulators which compromises the value of the compliant and conflict resolution processes.

9. **Fears and aspirations**

Overall, the submissions identify Bungonia as a community which aspires to:

- retain its rural ambience and tranquillity;
- remain a rural community unified by a shared appreciation of the historic significance and natural beauty of the local setting;
- provide opportunities to those who derive income from their properties or travel to and from Goulburn for employment; and
- promote tourism.

Common fears revolve around the following.

- The reduction or destruction of the rural amenity as a result of increased noise, traffic and emissions from the Quarry.
- The potential for accidents on local roads, in particular as this might impact on local families and children.
- Reduced availability of groundwater and the subsequent impact on income deriving activities.
- The negative impact on tourism the Quarry might have.
- The potential that this modification is one more step towards an even bigger development.
- The potential for contamination of the local environment.

2.13.5 Social Impact Assessment Outcomes

2.13.5.1 Identification and Evaluation of Social Impacts

Based on the social baseline summarised in Section 2.13.4, and the additional impacts of the Quarry predicted as a result of the proposed modification, the issues most likely to impact on the social setting, function or values of the local community have been identified as follows.

- A reduction in the 'peace and quiet', 'tranquillity' and/or rural amenity of the local setting. The key modifications with the potential to impact on these social parameters are as follows.
  - The proposed early morning truck movements which could increase noise levels and result in sleep disturbance and a reduced tranquillity of early mornings.
  - The proposed evening truck movements which increase noise and disrupt the enjoyment of the later afternoon / early evening when residents may be outdoors.
  - An increase in noise from the Quarry Site, both during approved hours of operation and during the proposed extended hours.
- An increase in the risk of traffic accident on local roads. The key modifications with the potential to impact on this matter relates to the proposed extended hours of transport operations increasing the overall time that Quarry trucks are operating on local roads.

- A reduction in the access of local landholders to water or other important natural resources, thereby impacting on income and viability of property operations. While limited in potential effect, the key modifications which could influence water availability are as follows.
  - The proposed increase to the basalt extraction area.
  - The proposed increase to production.
- A reduction in property values resultant from a change in local amenity. This could be influenced by factors associated with the proposed modification as follows.
  - The proposed increased to transport hours and associated noise and visual impact on properties.
  - Increased emissions from the Quarry Site (noise and dust).
  - Reduced water availability (perceived).
- Changes which may result in increased adverse impacts on local biodiversity and the natural beauty of the local setting. While limited in potential effect, the key modification which could impact on the natural environment are as follows.
  - The proposed extended hours of transport operations resulting in increased roadkill.
  - The proposed increase to the basalt extraction area impact on local biodiversity.
- Changes which could reduce tourist traffic and visitation. The modification which could impact on tourism area as follows.
  - The proposed extended hours of transport operations affecting the appreciation of the local setting.
  - A perception that Bungonia is quarry affected.

Table 15 evaluates each of the above issues and influences with the potential to impact negatively on the social values of the community, considering who is likely to be affected, the material effects on the social setting and a rating as to the significance of the potential impact(s).

The significance ratings noted on **Table 15** are those arising from the evaluation without consideration of the impact minimisation, mitigation or management measures that the Applicant already has adopted or proposes to adopt. Section 2.13.5.2 provides details of the Applicant's commitments regarding the impact minimisation, mitigation and management measures.

In preparing **Table 15**, the identification of material effects on the social impact characteristics of the community draws from the definitions and descriptions provided by *Table 5* of the *Social Impact Assessment Guideline* (DPE, 2017). The assessment of likelihood and consequence are based on the definitions contained in **Table 16** and **17**.

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Table 15
Significance Rating of Potential Social Impacts

Issue	Influence	Effect On	Social Impact Characteristics				Likelihood	Consequence	Significance Rating
			Extent	Duration	Severity	Sensitivity			
Reduction in the 'peace and quiet', 'tranquillity' and/or rural amenity	Early morning truck movements	Residents and landowners adjoining the Quarry Site and product delivery route	Impacts occur beyond the Quarry Site boundary Impacts are restricted to adjoining landholdings Impacts are on a moderate proportion of community	Life of Quarry	Moderate changes anticipated Reversible at end of Quarry life Potential disruption to lifestyle	Impacts on residential receivers.	Likely	Moderate	High
	Evening truck movements						Likely	Moderate	High
	Increased Quarry noise	Residents and Landowners where Quarry operations may be audible	Impacts occur beyond the Quarry Site boundary Impacts may extend beyond adjoining landholdings Impacts are on small proportion of community	Life of Quarry. Reducing over time (as extraction area developed to greater depth)	Minimal changes anticipated	Impacts on residential receivers	Possible	Minor	Medium
Increased risk of traffic accident	Extended hours of transport operations	Road users	Impacts limited to product delivery route and adjoining landholdings	Life of the Quarry	Minimal changes anticipated Reversible at end of Quarry life	No specific sensitivities	Unlikely	Severe	High
		Residents adjoining the product delivery route							
Reduced water availability	Increase to the basalt extraction	Landowners drawing water from groundwater	Impacts potentially beyond the Quarry Site boundary	Life of Quarry or longer	Minimal changes anticipated	Local water users	Rare	Moderate	Medium
	Increase to production			Life of Quarry					
Reduced property values	Extended hours of transport operations and associated noise and visual impact	Residents and landowners adjoining the Quarry Site and product delivery route	Impacts occur beyond the Quarry Site boundary Impacts are restricted to adjoining landholdings Impact on individual landowners	Life of Quarry or longer	Minimal changes anticipated Reversible at end of Quarry life	Individual landowners	Possible	Minor	Medium
	Increased emissions from the Quarry Site (noise and dust)								
	Reduced water availability								
Impacts to Biodiversity	Increased roadkill due to extended hours of transport	Wildlife	Impacts limited to product delivery route	Life of Quarry	Minimal change from approved conditions	No threated biota identified	Likely	Minor	Medium
	Increased disturbance footprint	Wildlife	Impacts limited to the disturbance footprint of the proposed modification				Rare	Minor	Low
Reduced Tourism	Extended hours of transport operations	Bungonia community	Impact on Bungonia and district	Life of Quarry or longer	Could take significant time and effort to reverse	Historic significance of Bungonia	Unlikely	Moderate	Medium
	Perception that Bungonia is quarry affected						Possible	Moderate	High

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Table 16
Likelihood Rating

Level	Descriptor	Description
A	Certain	The event will occur
B	Likely	The event is known to have occurred under similar circumstances
C	Possible	There is uncertainty as to whether the event might occur
D	Unlikely	Experience suggests the event has limited potential to occur
E	Rare	It can be demonstrated the event will not occur

Table 17
Consequence Rating

Level	Severity Level	Health and Safety	Natural Environment	Social /Cultural Heritage	Community /govt./ reputation /media
5	Severe	Fatality	Long-term impairment of ecosystem	On-going serious social issues, major permanent impact to cultural and heritage sites	Serious public or media outcry (national coverage) / major reputation impact
4	Major	Hospitalisation required leading to permanent injury	Medium term impairment of an ecosystem	Significant social issues, significant damage to structures / items of cultural significance	Major public embarrassment / adverse media coverage
3	Moderate	Medical treatment leading to lost time or restricted duties	Short term impairment of ecosystem affecting function	On-going social issues, damage to items of cultural significance	Adverse media /public / NGO attention
2	Minor	First aid treatment required but no lost time or restricted duties	Short-term impact not affecting ecosystem functions	Minor medium-term social impacts on local population. Mostly repairable	Attention from media and/or heightened concern by local community
1	Insignificant	No injury or review required	Minor impact on biological or physical environment	Minor social issues, repairable damage	Minor adverse local public or media attention or complaints

The Significance Rating of each potential social impact, without the inclusion of any controls or safeguards in place, is assessed as low, medium, high or very high based on the matrix presented in **Table 18**.

Table 18
Significance Rating Matrix

Likelihood		Consequences				
		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Severe
A	Almost Certain	M	H	H	VH	VH
B	Likely	M	M	H	H	VH
C	Possible	L	M	H	H	H
D	Unlikely	L	L	M	M	H
E	Rare	L	L	M	M	H

The four significance ratings are defined as follows.

Low (L): No specific management measures required.

Medium (M): Monitor impacts and reassess requirement for implementation of additional management measures periodically.

High (H): Provide for management measures to reduce the impact (or perceived impact).

Very High (VH): Consider modifying operations to address real or perceived impacts.

2.13.5.2 Impact Minimisation, Mitigation and Management Measures

Impact minimisation, mitigation and management will take three forms.

1. Community Engagement.
2. Operational Controls, Mitigation Measures and Adaptive Management.
3. Community Contributions.

Community Engagement

The Applicant proposes to build upon the consultation and community engagement already undertaken by developing and implementing a Community Engagement Strategy (CES) which will build upon the engagement which is currently undertaken. The objective of the CES will be to ensure that the local community:

- is informed of the activities and operations which are being undertaken;
- understands the obligations of the Applicant with respect to limits, restrictions and commitments to environmental management;
- is provided with opportunity to comment on activities and operations, or community contributions; and
- receives responses to queries, complaints or suggestions in a timely manner.

Many of the elements of a proposed CES are already in place, however, the community may not be aware of, or understand how to access these. The CES will provide a more structured approach and ensure that the Applicant regularly engages through the preparation of newsletters and presentations to community meetings. Key elements of the CES will be as follows.

1. The Applicant will maintain a community register which identifies (to the best of the ability of the Applicant) the name and address of all landowners surrounding the Quarry Site and adjoining the product delivery route. Other landowners or stakeholders will be included on the register, as identified or requested.
2. The Applicant will provide a summary of operations at each CCC meeting and will advertise the details of each CCC meeting to the public. CCC meetings will continue to be held in the Bungonia Community Hall and members of the public who wish to ask questions of the Applicant or receive updates on the progress of the project will be welcome to attend.

3. The Applicant will continue to send a representative to the meetings of the BPA and answer questions about the Quarry's operations, if asked. A representative of the Applicant will also attend and present information to other local community groups and organisations, as requested.
4. The Applicant will record all complaints on the community register, along with the response provided. A summary of community engagement will be reported annually as part of the Quarry Annual Review[7].
5. The Applicant will regularly update the Quarry website with updated monitoring data, project approval documentation and all currently active management plans.
6. The Applicant will continue to offer the use of their 'cricket pitch' site (Lot 2 DP735523) to local community events such as market days, or other events.
7. The CES will be reviewed periodically, in consultation with local community representatives, and updated as required.

In developing and finalising the CES, the Applicant will invite the input of representatives of the local community.

The Applicant is committed to the adoption of an "open door" policy for any member of the community who wishes to discuss any aspect of Quarry operations. The Applicant's Community Liaison Manager has confirmed that he is contactable 24 hours a day, seven days a week to respond to community concerns or issues.

Operational Controls, Mitigation Measures and Adaptive Management

Transport Operations

An important mitigation measure already introduced by the Applicant is the use of the privately owned and operated Bungonia By-pass Road, a measure that was introduced during the initial proposal to develop the Ardmore Park Quarry. The By-pass Road has enabled the Applicant to limit impacts upon the residents of Bungonia and to maintain its tourist appeal.

Recognising the concerns held by the local community over the proposed extension of transport hours of operation, the Applicant has proposed a number of additional controls to minimise impacts on road users and residents adjoining the product delivery route.

These are summarised as follows.

- By utilising the Applicant's fleet of PBS approved, larger capacity trucks, the total number of truck movements required to despatch the increased production limit does not require any increase. While larger in capacity, the PBS trucks incorporate the most up-to-date operational, safety and emissions standards. That is, these trucks are quieter, safer and produce less emissions per tonne of material transported than the standard 19m trucks used by many other quarry operators and transport companies.

[7] Annual Reviews will be submitted annually to the DPE (for the period ending 20 August each year and also placed on the Quarry website.

- The maximum number of truck movements outside of the currently approved hours of operation would be limited to 10 per hour (as opposed to 14 which is the approved hourly maximum between 7:00am and 6:00pm). The maximum number of truck movements per hour between 7:00am and 6:00pm would remain 14.
- While noting the maximum hourly truck movements limits above, the Applicant has developed an indicative schedule which will result in truck movements below these maximum levels most of the time.
  - A daily maximum of 124 truck movements will be imposed.
  - As identified in Section 2.3 and **Table 1**, on an average production day truck movements would be spread evenly over the day and evening with hourly volumes below the maximum allowable. Importantly, by increasing the number of truck cycles, and allowing for earlier commencement of transport, the concentration of truck movements between 7:00am and 10:00am can be avoided.
  - In order to maximise the utilisation and efficiency of its truck fleet, the Applicant will aim to schedule production and deliveries to remain as close to the indicative 88 movements per day schedule as much as possible. While indicative high demand and maximum production day schedules are provided, the Applicant would aim to avoid these as they would require additional trucks on those days and standing down of trucks on corresponding low production days to ensure that annual production limits are not exceeded.

  While noting that the scheduling presented in Section 2.3 and **Table 1** is indicative and would be subject to some variation over the life of the Quarry, it is based on the most economically and commercially expedient approach to product delivery to the Applicant's target markets in Sydney and Canberra.
- The Applicant's indicative schedule also aims to address concerns held by the local community over safety, noise and amenity impacts.
  - Truck movements when the local school bus service operates (between 7:00am and 8:00am, and 4:00pm and 5:00pm) would be restricted as far as practicable.
  - Truck movements after 6:00pm would be limited principally to returning trucks to be pre-loaded for the next morning's deliveries. This would also reduce the number of movements required the next morning as there would be less reliance on trucks travelling to the Quarry Site to be loaded.
- As discussed in Section 2.3 (and *Section 5.3.3.3* of the *Environmental Assessment*), the Applicant would:
  - require drivers to use UHF Channel 30 when operating during periods of 7:00am to 8:00am and 4:00pm and 5:00pm to establish contact with the school bus driver;
  - require drivers to identify the location of the school bus on the product delivery route and notify the bus driver on approach;

- enforce a speed limit of 40km/hr when approaching and passing the school bus; and
- contact the school bus service operator at the commencement of each term to confirm the timetable remains unchanged or to identify any additional or modified pick-up / drop-off locations or times.

Quarry Noise and Other Emissions

Emissions from the Quarry Site have also been identified as having the potential to reduce the amenity of local landowners and the enjoyment of their properties. A summary of noise management and mitigation is presented in Section 2.11.3 which should ensure that noise levels from the Quarry do not increase as a result of the proposed modification. Dust emissions will be closely monitored and the Quarry *Air Quality Management Plan* will be reviewed and updated following determination of the proposed modification to ensure that emission levels remain below the criteria of PA 07_0155 and EPL 13213.

Importantly, the Applicant employs a full-time, site-based Environmental Officer who monitors environmental performance and emission levels. The Environmental Officer has the authority to require modifications to operations to reduce noise or dust emissions. Furthermore, the Environmental Officer has access to and training in the use of noise monitoring equipment to ensure that any noise-related complaints can be immediately reviewed and addressed.

Water Availability

The hydrogeological investigations completed on behalf of the Applicant and documented in Section 2.8 demonstrate that the Quarry operations are located within an aquifer system from which a sustainable yield may be drawn.

The above notwithstanding, the Applicant recognises that a number of surrounding landholders rely upon groundwater for their property activities. Acknowledging this, the Applicant will continue to monitor water levels in bores surrounding the extraction area and production bore. In the event that water levels within these begin decreasing, the contingency actions nominated in the Quarry *Water Management Plan* would be implemented. The Applicant will also continue to investigate claims of negative impacts on the water supply of neighbouring landholders. As demonstrated by the investigation completed into claims by the owner of the "Inverary Park" property over reduced spring flows (see Section 2.8), the Applicant is committed to thorough and comprehensive investigations. In accordance with the commitments made in the Quarry *Water Management Plan*, where a negative impact on water supply can be attributed to the Applicant's operations, the Applicant will compensate the landholder for this loss.

The Applicant does note, however, that it has obtained a water access licence from the NSW government which entitles it to extract up to 110ML of groundwater annually. Water access licences are only granted where the groundwater source is identified as not overallocated and where the licence holder has demonstrated through assessment that the draw of this volume of water is sustainable. The Applicant has satisfied these requirements and evidence from monitoring on the Quarry Site to date supports the sustainability of yield from the groundwater source.

Property Values

While the Applicant cannot directly influence property values, the measures taken to reduce adverse impacts on the local environment and amenity will reduce any negative effects on local property values.

Biodiversity Values

The interaction between wildlife and vehicles on roads is a feature of the local environment. The recent road upgrades to widen the roads of the product delivery route will increase the distance between the trafficked lanes and vegetated areas within the road easement. The widened roads will also improve visibility for all drivers and therefore reduce the potential for a collision with wildlife.

The Applicant proposes to include information in the Driver Code of Conduct to inform drivers of the potential for wildlife to be present, especially during the early morning and evening, and operate the vehicles accordingly. The information will warn drivers to take special care when conditions are foggy, or following recent rainfall when herbivores often graze on the grasses which grow on the road verges and drains.

Tourism

On review of the comment and concerns raised by the local community, it is evident that the matter of product transportation is considered the primary deterrent to local tourism. The upgraded Jerrara Road and the safeguards, controls and adaptive modification to transport operations noted above would minimise the changes to local traffic conditions and as such, the proposed modification is unlikely to have a significant influence on tourism.

In fact, the improvement to road infrastructure could encourage travellers to investigate and return to the local area to enjoy its natural beauty, historic buildings and rural amenity.

The Applicant continues to engage with the local community and hopes that by continuing to do so in accordance with a CES, the Quarry continues to establish itself as a contributor rather than an adversary to the local community.

It is also likely that contribution to a community fund, as proposed as part of a VPA, could direct funds to projects to promote local tourism, either through improvements to facilities or advertising. This is discussed in more detail below.

Community Contribution

Current Contributions

The Applicant has historically contributed to the local and regional communities, both directly and indirectly.

- The Applicant has made contributions to the BPA as requested. These include:
  - the Bungonia Hall was painted (at a cost of approximately $15,000);
  - signage for the Bungonia Hall was purchased and erected; and
  - equipment for landscaping works within Bungonia has been made available at an approximate cost of $5,000.

- Other contributions include:
  - money raised at the Bungonia Road Safety Day through the operation of a breakfast and lunch stall (~$500);
  - in-kind donation of food, beverages and equipment at the Road Safety Day to the value of approximately $6,500; and
  - in-kind improvements of many entrances to driveways to improve visibility or make flush existing access roads to the upgraded Jerrara and Oallen Ford Road formation.

The Applicant is also a significant contributor to the regional economy as a major employer in the region. Excluding contract drivers, Multiquip paid over $5 million in wages to between an average of 50 to 60 employees working on various projects in the local area such as the Quarry, Jerrara and Oallen Ford road works, Crookwell Road wind farm development over the 2017/2018 financial year. These wages also exclude wages paid to contractors and other businesses involved in these projects.

The Applicant encourages the employment from within the local community. The Applicant also encourages its workforce to live locally. Of the current workforce, the Applicant estimates 50% were drawn from the local area. Of these, at least six reside within the Bungonia / Marulan district.

The Applicant maintains the historic 'Old Parsonage', constructed in 1841[8], on Lot 82 DP1117175. While located on private land, the Applicant takes the opportunity when hosting community days such as the Road Safety Day to exhibit the building.

The Applicant is also supportive of community projects to maintain and improve the condition of local creeks and waterways. The Applicant has held discussions with several members of the local community, notably Mr Peter Andrews, about the possibility of implementing his 'natural sequence' method to address erosion within Woodwards Creek. Funding of projects such as this would fit within the Community Fund component of the VPA proposed by the Applicant.

Future Community Contribution

The Applicant considers contribution to the local community as comprising both economic and non-economic contributions.

It is the preference of the Applicant that economic contributions be generated through the VPA and administered through a Community Enhancement Fund. The proposed terms of a VPA discussed in Section 2.12 provide a proposed template for the collection, administration and distribution of funds. Based on the terms of the VPA proposed by the Applicant, up to $25,000 would be available annually for community projects. This would be in addition to the Council funding provided to the LGA's villages which could provide for a combined $40,000 to $50,000 annually.

[8] https://www.goulburnaustralia.com.au/Towns-and-Villages-in-Goulburn-region-Australia/Bungonia.aspx

The Applicant would encourage projects to be proposed and developed by the local community, remaining independent of the decision-making process as to the allocation of these funds. This notwithstanding, and noting the value placed in the historic significance of Bungonia, natural beauty of the local setting and aspiration for tourism to be promoted, the Applicant believes there would be significant value in the funding of projects such as the following.

- Improvement of facilities within the Bungonia Public Recreation Area (for picnics, camping and/or caravans).
- Establishment of a historic walk through Bungonia.
- Advertisement of Bungonia for tourism.
- Local creek restoration projects.

Outside to the Community Enhancement Fund, the Applicant would still consider individual applications for funding or assistance. In particular, and as has been undertaken in the past, the Applicant would review property access points to the product delivery route as requested by local landowners and where warranted provide assistance in the upgrade of these.

The Applicant would also continue to encourage personnel to reside within the local community and support and contribute to local groups and organisations. The Applicant remains happy to liaise with these local groups and organisations for the use of the cricket pitch site (Lot 2 DP735523) for local events or training.

2.13.5.3 Social Impact Assessment

Considering the current and proposed impact minimisation, mitigation and management measures for each of the potential social impacts listed on **Table 15**, the following impacts have been assessed.

Reduction in 'peace and quiet', 'tranquillity' and/or rural amenity

The proposed controls and management measures nominated by the Applicant would ensure that emissions from the Quarry Site remain equivalent to that of the currently approved operations and, subject to the implementation of management measures to restrict activities during noise enhancing conditions, comply with the proposed Project Noise Trigger Levels (refer to Sections 2.11.2 and 2.11.3).

The proposed strategy of the Applicant to the scheduling of product transportation would both maximise the utilisation of its transport fleet whilst minimising the additional impacts of transport operations outside the currently approved hours of operation. Considering the improvements to the road network completed by the Applicant and commitment through a VPA to the maintenance, use of vehicles with the most up to date operational, safety and emission reducing standards, planned reduction or maintenance of existing hourly frequency of truck movements, and ongoing implementation of the Driver Code of Conduct (which will include penalties for drivers who fail to adhere to its requirements), the additional impact on the amenity of adjoining landholders and residents would be significantly mitigated.

It is important to note that it is the proposed modified transport operations which are being assessed. As noted above, the proposed modification would in fact involve no more trucks than are currently approved and include changes to operations which would improve road safety, reduce noise emissions and reduce the frequency of truck movements during the daytime period.

It is assessed that the proposed management of the extended hours of product transportation would result in only minor changes to the amenity of the local setting. While subjective in nature, it is also assessed that with the proposed management measures and controls in place, further adverse impacts on the lifestyle of local residents would be minimised.

Road Safety

Concerns over increased road safety risks are understandable, however, the Applicant has gone to great lengths to ensure that the road is upgraded to an appropriate standard, the trucks to be used incorporate the most up-to-date safety features, the scheduling accounts for local road use and truck drivers are provided with proper instructions on safe and courteous road use.

Both the issuing of PBS Permit 168751v4 for the product delivery route and the results of the road safety audits conducted on the product delivery route demonstrate the roads are safe for the proposed traffic.

While committed to continually improving performance, which would include consideration and response to any complaints or suggestions from the local community with respect to transport management, it is assessed that the proposed modification would not increase the road safety risk of transportation operations. There is therefore no reason to imply that the proposed modification would impact on the ability of the local community to safely and effectively use these roads. In fact, with the recent road upgrades and proposed contribution to maintenance, these roads are likely to remain amongst the best maintained within the LGA.

Water Availability

There is no evidence to support claims the Quarry has, or will have, a negative impact on the availability of groundwater on properties surrounding the Quarry Site. Claims of hardship resultant from falling groundwater levels are therefore not a result of the current Quarry operations.

It is important to note that the proposed modification would not involve the Applicant pumping any more than its entitlement from the Quarry.

The above notwithstanding, and as demonstrated in Section 2.8, the Applicant will continue to respond to requests made with respect to water availability and, where relevant, undertake investigations to assess any claims.

Biodiversity Values

The proposed modification would have limited additional impact on the natural beauty of the local setting or the native biodiversity within or surrounding the Quarry Site. The Applicant is open to the funding of local projects to improve the conservation of the natural and built environment within and surrounding Bungonia.

Property Values

The proposed modification would involve changes unlikely to have a significant influence on the local property market.

- The area of disturbance would be imperceptible when viewed from locations surrounding the Quarry Site.
- There would be no further impact on local water resources.
- There would be no further impacts on Bungonia Village.
- While the number of trucks travelling to and from the Quarry Site on a daily basis could increase from 88 to 124, the overall number of trucks in any month would remain the same as currently approved.
- While the hours of transport operations would be extended, the frequency of truck movements during these extended hours would be carefully managed, with scheduling undertaken to control the number of hourly truck movements. Notably, by increasing the hours of operation, the frequency of truck movement per hour can be reduced.

A review of the local property market, as available through real estate website realestate.com.au, is also instructive as to the influence of the existing Quarry on property prices within the Bungonia area. In 2018, eight properties of varying sizes were sold (five 10.1ha properties and three properties between 39ha and 49ha). This is in line with the sale rate for previous years of between 12 and 14 properties per year. The median house price for the Bungonia district (based on 13 sales between August 2017 and July 2018) to be $495,000, an increase of $32,500 on the median house price for the preceding 12 month period (based on 12 sales)[9]. It is noted that there are various factors influencing property sales, however, the evidence suggests that the increased production of the Quarry has not had a noticeable effect on the local property values.

On balance, there is no evidence to support claims that the proposed modification would have an adverse impact on local property values.

Tourism

The proposed modification does not involve any significant changes to operations which are likely to discourage local tourism. In fact, it is assessed that engagement between the Applicant and local community could increase the tourism potential of Bungonia and surrounds through:

- improved access (road upgrades and maintenance);
- improved facilities (funded through the VPA); and
- promoting the Bungonia district as a tourist destination.

The Applicant is committed to being an active participant in efforts to increase tourist visitation to the local district.

[9] https://www.realestate.com.au/neighbourhoods/bungonia-2580-nsw?cid=srp

Contribution to the Socio-economic Setting

While many of the perceived negative impacts on the social setting of Bungonia and surrounds are addressed, the assessment also considers the potential benefits offered by the Quarry.

i) The proposed modification would provide ongoing security for the full-time employment of up to 26 Quarry personnel and a further 20 truck drivers.

ii) The Applicant would also continue to provide employment for local contractors and service companies providing mechanical, technical and cleaning type services. With the workforce to be drawn predominantly from the Goulburn district, the economic benefits are likely to continue to be experienced within the Goulburn Mulwaree LGA.

iii) Increased employment opportunities would have additional flow-on benefits including:

- the provision of new and/or continued employment would provide an impetus to other local businesses;
- quarry expenditure on fuel, parts and consumables; and
- support of local community services and projects.

iv) The Applicant anticipates that Quarry would contribute up to $6 million per year to the local, regional and NSW economies as follows.

- Wages (direct employees only): $3.5 million per annum.
- Consumables, goods and services: up to $1.5 million per annum.
- Contractors and suppliers: approximately $500,000 per annum.
- Rates and taxes: up to $500,000 per annum.

These figures are supported by the wage payments by Multiquip to the 50 to 60 Goulburn-based employees for the 2017/2018 financial year for work on various projects in the local area. In addition, Multiquip notes this figure has been substantially higher in previous years.

v) The Quarry would provide for flow-on benefits to the local economy through the expenditure of wages paid to employees, profits made on the sale of quarry profits and through the purchase of goods and services for the ongoing operation of the Quarry.

vi) The proposed modification would allow for the establishment of a VPA which would segregate a proportion of contributions to be spent on local community projects.

vii) Diversification of development / industry in the LGA would lead to increased training opportunities for the residents of the LGA and appeal to people looking to move to the area.

viii) The final landform of the Quarry Site would incorporate land available for future agricultural or other uses, thereby maintaining the economic value of the site post-Quarry, as well as passive nature conservation, thereby compensating for any temporary loss in biodiversity value.

The Applicant is committed to remaining a strong economic contributor to the region. As noted in Section 2.13.5.2, Multiquip employed between 50 to 60 personnel (on average) within the Goulburn Mulwaree LGA during the 2017/2018 financial year. This contribution will continue and likely increase once the Quarry approaches full production, with the establishment of up to 26 Quarry personnel and a further 20 truck drivers. The Quarry would supply supplementary businesses such as a concrete plant for which a development application has been lodged with Goulburn Mulwaree Council, further increasing employment opportunities and economic contributions to the Goulburn Mulwaree economy.

2.13.6 Conclusion

The Applicant has a very good understanding of the social values and concerns of the local community obtained through the consultation and community engagement undertaken since the commencement of operations on the Quarry Site and additional review and research conducted as part of this SSIA.

The Applicant acknowledges that the local community places a high value on the rural amenity of the local setting, its tranquillity, significant features of the built and natural environment, access to water resources, the safe use of local roads and maintenance of a peaceful rural lifestyle. The fear that the Quarry will reduce the enjoyment of the local setting as a result of adverse impacts to these values is understood and evident both in comments made during consultation and in the submissions during the exhibition of the *Environmental Assessment*.

The potential for the Quarry to impact on the amenity or natural resources of the local setting, and lifestyle of those who reside on land adjoining the Quarry Site, product delivery route and surrounding lands, has been acknowledged. However, noting the significant operational controls, safeguards and management measures proposed by the Applicant, the increase in impacts associated with the proposed modification on the principal social values are unlikely to result in significant changes to the use or enjoyment of local properties and the local setting. On this basis, the significant economic and social contribution that the Quarry to the local and regional economies, including the opportunities available through this proposed modification for direct funding of community projects and promotion of tourism, outweigh the minor impacts associated with the increased hours of transport operations on the product delivery route.

The Applicant is committed to continuing to engage with and assist the local community wherever possible throughout the life of the Quarry.

3. COMPLIANCE HISTORY AND MANAGEMENT

3.1 INTRODUCTION

The matter of historic non-compliances against conditions of PA 07_0155 and EPL 13213 has been raised by the DPE, several government agencies and a number of public submissions on the proposed modification.

The Applicant acknowledges that various conditions of consent have not been complied with since activities commenced at the Quarry in November 2013. As is discussed in more detail in Section 3.2.1, many of the non-compliances are explained by two key factors.

1. The time between the issue of PA 07_0155, preparation of management plans and the commencement of activities (approximately 4 years).
2. The initial campaign based approach to operations and the absence of a consistent workforce and management personnel to oversee operations.

The Applicant stresses these factors are not proposed to excuse the breaches of conditions which have occurred. However, their identification and acknowledgement provide the basis for the adoption of procedures to avoid future non-compliances against the conditional requirements of PA 07_0155 and EPL 13213.

This section provides:

- a summary of the compliance history of the Quarry, along with information as to how breaches were identified and addressed (Section 3.2);
- a review of the issues related to compliance raised in the public submissions (Section 3.3); and
- a summary of the measures being implemented or proposed to ensure that compliance with all conditional requirements is achieved in the future.

3.2 COMPLIANCE HISTORY

3.2.1 Incidents, Notices and Other Records

Since commencement of operations under PA 07_0155 in 2013, various regulatory authorities have raised matters related to the compliance of the Quarry against the conditions of PA 07_0155, EPL 13213 or other statutory requirements. **Table 19** provides a summary of the notices and other correspondence received by the Applicant, the actions taken (both by the regulator and Applicant) and their current status.

Table 19
Notices and Other Records

Date	Issuer	Incident, Notice or Request	Action Taken	Current Status
Feb 2014	Sydney Catchment Authority (now WaterNSW)	Rainfall event resulted in the discharge of water from a sediment basin constructed on the northern side of Bungonia Creek into the creek. Following inspection on 17 February 2014, SCA noted this as a pollution incident and advised that effective erosion and sediment controls were not installed. On inspection, NSW EPA were not able to confirm a pollution incident had occurred.	Fine of $1,500 issued by SCA for breach of Section 91 of the POEO Act. Fine paid by the Applicant. A specialist consultancy was engaged to provide recommendations for upgraded erosion and sediment control. The recommended controls were installed.	Fines Paid and actions complete. Erosion and Sediment Control now managed in accordance with the Quarry Water Management Plan (Nov 2017) and various appended Erosion and Sediment Control Plans)
Jun 2014		Following an SCA inspection on 17 and 20 June 2014 a second breach notice issued as it the structures were not being adequately maintained.	Fine of $1,500 issued by SCA for breach of Section 91 of the POEO Act. Fine paid by the Applicant. Accumulated sediment cleaned out and regular inspections undertaken until construction complete and ground stabilised.	
Jul 2015	EPA	Groundwater monitoring data not included in the Annual Return for the reporting period 21 August 2013 to 20 August 2014.	Show cause notice issued by EPA. Available groundwater monitoring data supplied and monitoring undertaken in accordance with the Water Management Plan.	Issue Resolved without fine or penalty notice.
2016	DPE	A show cause notice issued by the DPE in relation to truck movements additional to that approved Condition 3(25A).	The Applicant responded that the truck movements had been with the consent of the road authority (Goulburn Mulwaree Council). Penalty Infringement Notice (PIN) issued by DPE.	Fine associated within PIN paid by the Applicant. All subsequent transport has been in accordance with Condition 25 and 25A of PA 07_0155.
2017	DPE/EPA	Overflow from dam adjoining the production bore.	No action taken as no material harm to the environment resultant. DPE reiterated all incidents to be reported.	Issue resolved.
2017	EPA	The Applicant was contacted regarding complaints received in relation to dust emissions.	The Applicant reviewed wind data for periods in questions which suggested there would have been limited impact at complainant's location(s). Official caution issued by the EPA.	Issue resolved (as far as practicable). The Applicant continues to manage dust emissions and monitor dust in accordance with the Quarry Air Quality Management Plan.

Table 19 (Cont'd)
Notices and Other Records

Date	Issuer	Incident, Notice or Request	Action Taken	Current Status
Feb 2016	DPE	Off-site sediment discharges identified by DPE from the Bungonia By-pass Road.	The DPE requested the Quarry Water Management Plan be reviewed and revised to ensure better management of stormwater. A revised Erosion and Sediment Control Plan was submitted by the Applicant on 4 March 2016.	Resolved
Mar 2016			DPE requested a revised Water Management Plan.	
Feb 2017			Show cause notice issued by DPE. Applicant met with the DPE in March 2017 and agreed to update the Water Management Plan	
Aug 2017			DPE submitted an Order to the Applicant requiring the Water Management Plan to be updated. The Applicant submitted an updated Water Management Plan on 11 September 2017	
Feb 2017	DPE	2016 AEMR not submitted on time	Show cause notice issued by the DPE. The Applicant subsequently completed and submitted the AEMR.	Resolved
2018	DPE	The location of the crushing plant was identified as non-compliant with the statement of commitments appended to PA 07_0155.	PIN issued by DPE. Response from the Applicant nominated that: • the Quarry was operating within the construction period (with enclosed plant not required); • at the time there was insufficient room in the pit to safely operate a crushing plant; and • the noise and dust complaints received were not substantiated.	See below.
			An Order issued by DPE requiring cessation of crushing and relocation prior to resumption of crushing. The Applicant responded to the draft order requesting amendment to allow for limited crushing in existing location to complete internal construction prior to relocation.	.

Table 19 (Cont'd)
Notices and Other Records

Date	Issuer	Incident, Notice or Request	Action Taken	Current Status
Aug 2018	EPA	Unattended noise monitoring by the EPA at a residence on the "Inverary Park" property identified possible exceedances of noise criteria.	The EPA issued a licence variation to include a Pollution Reduction Program aimed at identifying noise levels and mitigating these. The Applicant responded agreeing to the PRP with amendments (see also **Appendix 13**). An amended PRP was issued as part of a variation to EPL 13213.	Noise monitoring required by the PRP has been commenced.
Sep 2018	DPE	The Applicant investigated the potential for previously identified Aboriginal heritage sites to have been disturbed during construction of the Bungonia By-pass. A report by consultancy OzArk Environmental & Heritage Management was provided to OEH and DPE.	Show cause notice issued by DPE in relation to non-implementation of the Aboriginal Heritage Management Plan.	Response being prepared by the Applicant.

The Applicant recognises that the record of notices, cautions and penalties/fines is not in accordance with their objective to operate the Quarry to the best environmental standards. As noted in Section 3.1, many of the non-compliances stem from a lack of a consistent presence on the Quarry Site during the construction phase and a lack of understanding of management personnel involved in these campaign activities of the commitments contained in management plans.

The Applicant notes that there has always been an objective to comply with the conditions of PA 07_0155, EPL 13213 and environmental legislation, however, acknowledges that past actions in not meeting this objective is regrettable and not acceptable. The Applicant makes the point that in most cases, the non-compliances related to a lack or documentation, or implementation of operations in accordance with documentation. While there have been isolated incidents such as water discharges without consent, overall the Quarry has operated without causing any significant harm to the environment.

The above point is reinforced by the results of environmental audits of the Quarry (refer to Section 3.2.2) which identify that non-compliances have been predominantly administrative or low risk in nature.

The above notwithstanding, the Applicant has put in place a number of measures to prevent the re-occurrence of non-compliances at the Quarry. These are discussed in Section 3.4. It is noted that up until 31 October 2018, Multiquip produced and delivered over 100 000t of sand products fully in compliance with all relevant project approval conditions.

3.2.2 Environmental Audits

Two environmental audits have been completed for the Quarry since commencement of operations in 2013.

Department of Planning and Environment Compliance Audit – July 2015

Shortly after commencing operations of PA 07_0155, the DPE Compliance Unit conducted a compliance audit as part of NSW wide campaign auditing the compliance of sand quarries (May – August 2015) (DPE, 2015).

The audit concluded that the Quarry was operating in compliance with the majority of the conditions of PA 07_0155. Of the non-compliances identified, some of which were sub-elements of conditions:

- 10 were administrative;
- 1 identified as low risk; and
- 3 moderate risk non-compliances with conditions.

The moderate risk non-compliance related to a lack of noise monitoring and potentially polluting dust emissions. It is noted noise and dust monitoring is now being undertaken in accordance with all relevant conditional requirements.

On review of the management plans required by PA 07_0155, the audit concluded that the Applicant was operating generally in compliance with commitments of the management plans. Of the non-compliances:

- 2 were administrative; and
- 5 low risk.

The audit drew particular attention to non-compliances related to groundwater monitoring. The risk of these non-compliances was assessed as low at the time due to the small scale of extraction operations, the hydrogeology of the Quarry Site, and restriction to basalt extraction well above the known groundwater levels. However, the audit report stressed that these non-compliances, if allowed to continue could represent a significantly higher level of risk. It is noted that groundwater monitoring is now being undertaken in accordance with all relevant conditional requirements.

Independent Environmental Audit – October 2015

Within several months of the DPE's compliance audit, the Applicant commissioned an Independent Environmental Audit (IEA) by Trevor Brown & Associates (TBA, 2015). The IEA findings were generally consistent with the conclusions of the DPE (2015) with non-compliances generally:

- administrative (8 non-compliances); or
- low risk (7 non-compliances).

Only one moderate risk non-compliance was reported. This was related to an uncontrolled discharge of water from a sediment basin constructed on northern side of Bungonia Creek in 2014. Notably, this incident was reported to the EPA and (the then) Sydney Catchment Authority and resolved appropriately (refer to **Table 19** – page 1 of 3).

The next IEA has been scheduled for October 2018.

It is noted that the audits were undertaken at a time when operations were still in the construction and development stage. These audits do, however, illustrate that high levels of compliance, with no high risk and limited moderate risk matters identified. The findings, which identify a number of administrative non-compliances related to the preparation or implementation of management plans, do reiterate the statements made in Section 3.1 regarding the reasons for non-compliances on the Quarry Site. Unfortunately, not long after the audits were completed, operations went into another period of extended care and maintenance with the opportunity to 'bed in' change with respect to the implementation of management plans and other documents lost.

In early 2017, the Applicant re-commenced operations within the Quarry Site with a focus upon future continuous operations and with a full-time Training and Community Liaison Manager and site-based Environmental Officer. The Applicant is fully committed to the future continuous operation of the Quarry in a manner that achieves compliance with all conditional requirements and the ultimate acceptance of its social licence.

3.3 COMMUNITY CONCERNS (PUBLIC SUBMISSIONS)

3.3.1 Overview

Of the 49 public submissions received, eight referenced a poor compliance history of the Quarry as a reason to object to the proposed modification. The specific matters raised in these submissions included comments on compliance history as follows.

- One submission noted that the Applicant should be required to demonstrate compliance at full production before making application for modification.
- Five submissions objected on the basis that breaches of approval conditions have been recorded suggesting this displays a lack of regard for regulatory requirements and the community.
- Other submissions made more specific reference to individual breaches of approval conditions as the basis for their objection. The general comments and individual matter raised in the submissions are addressed in the following sub-sections.

The following sub-sections identify each of the compliance related issues raised, provide a direct quote(s) from a relevant submission referencing the issue, and provide a response to the issue raised, including reference back to the *Environmental Assessment* or specialist assessments, where relevant. The bracketed text for each sub-heading reference the specific issues identified in the objection matrix of **Appendix 1**.

3.3.2 Compliance with Original Consent Conditions [OC]

Representative Comment(s)

Because the quarry is not yet in full production (as I understand it) the applicant has not yet demonstrated that they are able to operate their quarry according to the conditions of the original consent so residents have not yet experienced consequences of its operating at its

original capacity. The applicant should be required to demonstrate that they can and will comply with the existing conditions before being granted their request for such a large expansion of their activities.

245675 Submission

Response

The *Environmental Planning & Assessment Act 1979* (EP&A Act) does not require a development to achieve full production before an application for a variation may be lodged. In fact, as is the case for the proposed modification to the Quarry, improvements to operations which require modification to approval conditions are often only identified following commencement of the development. In the case of the Ardmore Park Quarry, a more efficient and effective approach to transport operations has been identified which would allow for an increase in overall production without an increase in the total number of trucks travelling to and from the Quarry Site. The conditions of PA 07_0155 prevent this more efficient and effective transport operations and hence application to modify the relevant conditions has been made prior to the commencement of production and transportation at the currently approved maximum levels.

In the case of a modification to an existing State Significant Development, the Applicant must illustrate that the development remains substantially the same to that for which approval was previously issued and demonstrate that the modified operation can comply with *Section 4.15* (formerly Section 79C) of the EP&A Act. *Section 4.15* of the EP&A Act requires that the modified development complies with environmental planning instruments, development control plans and planning agreements, has acceptable environmental, social and economic impacts in the locality, is located on a suitable site, consider any submissions made and is in the public interest.

Section 7 of the *Environmental Assessment* provides an evaluation and justification of the proposed modification, with the evaluation requirements of Section 4.15 (Section 79C) of the EP&A Act addressed specifically in *Section 7.2.3*. Concerns related to the impacts associated with the proposed modification have been taken on board following the exhibition of the *Environmental Assessment* with Section 2 documenting the additional information collated and collected to assist in addressing the requests for additional information raised by the DPE and other government agencies and objections raised in public submissions. Together with the assessment provided by the *Environmental Assessment*, this RTS confirms that the evaluation requirements for assessment of the proposed modification have been met.

3.3.3 Breaches of Current Consent Conditions [BC]

Representative Comment(s)

In November 2015 The State Planning Department identified 21 breaches of consent conditions related to the Ardmore Park Quarry. This proves Multiquip quarries has no regard to the conditions that were imposed on it and the impact it had to the residents. This audit came out of the local residents of Bungonia complaining – if it wasn't for the local residents patrolling this quarry then these breaches would have continued.

245882 Submission

Bungonia residents are fed up with nearly 13 years of fighting Ardmore Park. Modifications should not even be addressed until certain conditions on various stages and levels are met. These levels are already being broken, going on to another level before the next level is finished.

247280 Submission

Response

The Applicant acknowledges that various conditions of consent have not been complied with since activities commenced at the Quarry in November 2013. The initial operations were focused primarily on the construction of the Bungonia By-pass Road and Bungonia Creek crossing, with a lack of consistent workforce and management personnel resulting in various breaches of operating conditions.

It is relevant to note that following the DPE Compliance Audit of the Ardmore Park Quarry (September 2015) which is referenced by Submission 245882, the Applicant commissioned an Independent Environmental Audit (IEA) by Trevor Brown & Associates (TBA, 2015). The IEA findings were generally consistent with the conclusions of the DPE Compliance Audit of the Quarry report dated September 2015 with non-compliances generally:

- administrative (8 non-compliances); or
- low risk (7 non-compliances).

Only one moderate risk non-compliance was reported. This was related to an uncontrolled discharge of water from a sediment basin constructed on northern side of Bungonia Creek in 2014. Notably, this incident was reported to the EPA and (the then) Sydney Catchment Authority and resolved appropriately.

As discussed in Section 3.2.2, breaches of conditional requirements of the approvals held by the Applicant have occurred since the DPE Compliance Audit and IEA of 2015 were completed. The Applicant note that these breaches of conditions, many of which revolve around monitoring and administrative requirements or individual incidents, reflected the above-mentioned lack of consistent presence on site as opposed to a disregard of the conditions themselves or dismissiveness of the community. Notably, and coinciding with the commencement of more consistent hard rock extraction activities in 2017, the Applicant has employed an Environmental Officer to manage environmental performance at the Quarry. Since the end of 2017, the Environmental Officer has been based solely at the Ardmore Park Quarry. The Environmental Officer has worked with other Applicant personnel throughout this period to improve the overall environmental performance of the Quarry. Specifically, the Environmental Officer has improved adherence to the Quarry environmental management plans, ensured monitoring is undertaken as required, complaints are recorded and responded to and incidents identified and reported.

The Applicant now maintains a comprehensive complaints register and acknowledges that complaints are regularly received from neighbouring landowners regarding quarry noise, dust emissions and overall performance. Complaints are also received (less frequently) from residents of Oallen Ford Road and Jerrara Road in relation to trucks or road conditions. It is important to note that complaints received do not directly correlate with non-compliances. For example, while the Applicant has received 28 complaints related to noise emissions between January and July 2018, noise monitoring undertaken in March and June 2018 has determined

the Quarry to be compliant with noise criteria (refer to Section 2.11.1). Compliance with noise criteria can still result in noise from the Quarry being heard, albeit at a level determined by the EPA to be non-offensive. To some in the local community, hearing the Quarry operate, albeit at low levels, is offensive. However, compliance with the EPA limits prevails.

In conclusion, while the Applicant acknowledge that breaches of approval conditions have been recorded and reported, and that Quarry operations are a source of reasonably regular compliant by surrounding landowners, performance against the conditional requirements of PA 07_0155 and EPL 13213 is much better than the objections to the proposed modification suggest. Importantly, management decisions made by the Applicant such as to employ a dedicated site-based Environmental Officer, have seen a continued improvement in environmental performance. The Applicant would point to the completion of road upgrade works which have been completed to the satisfaction of Council and without significant environmental incident. Furthermore, noise and air emissions have been demonstrated to be compliant in 2017 and 2018 as extraction and processing operations increased on the Quarry Site. The Applicant notes that a second Independent Environmental Audit is scheduled for October 2018 when it is expected that despite the increased activity on the Quarry Site, compliance with the majority of approval conditions will be demonstrated.

3.3.4 Bungonia By-pass Road Construction [BB]

Representative Comment(s)

The Bungonia bypass road has not been build in accordance with the original drawings. It is closer to the village and passes across the saddle between the two hills that shielded my property and the village from direct traffic noise. Furthermore, earth barriers proposed on the original drawings have not been installed…Since the route has changed and the noise bunds not been built, the noise studies are invalid. Given the proximity of the contours to the residences in the village, the sound levels will almost certainly breach the levels specified in Table 1 of Schedule 3 of the approval document dated 20 September 2009 when the contours are remapped to reflect the actual truck route.

246738 Submission

Response

It is understood the modified alignment of the By-pass Road was used to avoid the waterlogged conditions within and around a large dam on the property. Furthermore , the configuration of the road was adjusted to provide a more practical alignment for heavy vehicles than that shown in the original design of road.

Noting that the Aboriginal Heritage Management Plan for the Quarry identifies several Aboriginal sites on Lot 2 DP735523 which the nominated alignment of the Bungonia By-pass Road avoided, the Applicant has subsequently engaged OzArk to complete an inspection of the current alignment to assess whether there has been any disturbance to these sites. A report prepared by OzArk has been forwarded to OEH for consideration.

With respect to the potential for noise impacts on neighbouring land and within the village of Bungonia, it is important to note that the section of the Bungonia by-pass which is near to the boundary of Lots 1 and 2 DP735523, occurs to the west of a significant cut section into the hill. As a result, any noise generated by the movement of vehicles closer to this eastern boundary would be attenuated by this cut slope.

3.3.5 Compliance with Noise Monitoring Consent Condition [NM]

Representative Comment(s)

As part of the Conditions of Consent noise monitoring would be taken at nearby residences namely Resident 3 (which is us) Resident 7 was bought out as part of their Conditions of Consent. See Monitoring 4.2.8 – Monitoring Locations (See third highlighted area page 3). The monitoring of our property has never been done, even though we have told Multiquip personnel that we experience noise issues.

246970 Submission

Response

Prior to the June 2018 noise monitoring campaign, noise monitoring was undertaken at the boundary of the "Ardmore Park" property between the receivers nominated in the Noise Monitoring Plan and Quarry operations. Noise levels were then back calculated to the residential receivers with compliance determined in each case.

In June 2018, the noise monitoring was undertaken at Residence 3 where it was determined that under the prevailing daytime conditions of the local setting, compliance with noise criteria was achieved.

It is proposed that all future noise monitoring is undertaken at the respective residential receivers, unless access to this location is denied by the landowner.

3.3.6 Bungonia By-pass Road Traffic [TB]

Representative Comment(s)

The traffic on the bypass road routinely breaches the Condition 4 of Schedule 3 of the approval document dated 20 September 2009, which prevents usage between 6pm and 7am…A proponent who fails to comply with generous existing conditions should not be rewarded with a further extension of operating hours.

246738 Submission

Response

The Applicant advises that in the past some trucks may have travelled to the Quarry Site prior to 7:00am in order to leave as close to 7:00am as possible. The Applicant have advised that all drivers have been notified that this represents a breach of the conditions of PA 07_0155 and since this notification no such breaches are known to have occurred.

The same control will be applied to truck drivers should the proposed extension in hours of operation be approved, i.e. trucks will be prohibited from travelling on the product delivery route between the hours of 10:00pm and 5:00am. In order to ensure deliveries can commence as close to 5:00am as possible, the Applicant intends that trucks may be pre-loaded with quarry products the night before and parked on the Quarry Site overnight. No incoming unladen trucks will be permitted to enter the northern end of Jerrara Road until 5:00am. No laden trucks will be permitted to leave the Quarry Site beyond 10:00pm.

3.3.7 Enclosure of Crushing and Screening Plant [PE]

Representative Comment(s)

As part of the Conditions of Consent the crushing and screening components of the hard rock processing plant were supposed to be enclosed in sheds to reduce dust & noise to neighbours (see highlighted area below). This has never been done and we have been putting up with the dust for years.

246970 Submission

Response

The proposed enclosure of the hard rock crushing plant was with reference to a proposed fixed plant to be constructed on the Quarry Site. Based on current market demand for sand and hard rock products, the Applicant no longer requires a fixed crushing plant to supply large volumes of crushed basalt and will continue to operate a mobile crushing plant.

The mobile crushing plant has been operated on the Quarry Site on a campaign basis since operations commenced in November 2013. It is noted that visible dust has been generated by the mobile crushing operations at different times, however, it is important to note that compliance with the 12 month deposited dust criteria has been demonstrated since commencement[10]. It is also acknowledged that the operation of the mobile crushing plant is likely to have been audible on neighbouring properties, however, noise monitoring undertaken has indicated that compliance with noise criteria was still achieved. In particular, the noise monitoring of April 2018 reported compliant noise levels even with all equipment, including a rock-breaker, operational.

It is acknowledged that the current location of the mobile crushing plant was only ever to be temporary prior to either the construction of a below ground ROM Pad or relocation of the crushing plant to the eastern edge of the extraction area. The Applicant has agreed to cease crushing until the crushing plant can be relocated as noted.

3.3.8 Quarry Start Time [CC]

Representative Comment(s)

As part of the Conditions of Consent the operation times were supposed to be adhered to. They start prior to 7.00am on many occasions.

246970 Submission

Response

The Applicant refutes this claim. The Applicant now maintains records on site that documents the commencement time of all key activities/operations.

[10] It is noted that some anomalous results have been excluded from assessment against criteria. This is an accepted practice where such results are clearly non-representative of dust levels within the local setting.

3.3.9 Inadequate Reporting of Monitoring Data [MD]

Representative Comment(s)

Once again self-monitoring has not worked for this company. The dust reports are incomplete in months and missing months that relate to dust photographs. How do these reports go missing? These reports could easily be obtained from the company that is supposed to check the samples that are required on a monthly basis, as per conditions of consent. There are discrepancies with report numbers of dust reports that are not in ascending order, there are Figures supplied in Appendix 8 in the proposed modifications that don't match the data that is on the website. There is the question of why a dust funnel was left broken, where was the missing piece of glass. They do not upload dust reports monthly, sometimes we have asked for nearly a years' worth.

246970 Submission

Response

The Applicant acknowledge that there have been failings in the collection and reporting of dust monitoring data. Since October 2013, dust monitoring data is unavailable for August 2014 to March 2015, October 2015, July, September and December 2016, and November 2017. However, with a dedicated site-based Environmental Officer now employed by the Applicant, dust monitoring is now completed each month and the results uploaded to the Multiquip Quarries website. There have been some occasions when the delivery of results from the laboratory have been delayed, or the results need to be checked by independent consultants, which has delayed the uploading of the results to the website. The Applicant aims to have each month's results uploaded within 1 month of sample collection and delivery to the laboratory. It is proposed that a 12 month rolling average of results is maintained on the website to allow visitors to the website to confirm that the relevant results remain below the nominated 12 month dust deposition criteria.

With respect to the results of dust monitoring, the Air Quality Impact Assessment reviewed the results to ensure that these represented a reasonable background. Some anomalous results were removed in order to ensure the existing environment is correctly characterised.

3.3.10 Increased Production Rate [IP]

Representative Comment(s)

Initial application was for 580ktpa and it was not approved. After gaining approval for a 400ktpa operation, Multiquip is now seeking an increase by 45% to the initial application production rate. If this is approved then it is in direct conflict with initially rejected proposal.

246719 Submission

Response

The original development application was rejected on the basis that it involved the delivery of quarry products through the village of Bungonia. The matter of production was immaterial to that decision.

The above notwithstanding, this application will be assessed on the merits of the information presented to the DPE. On the basis that the proposed production increase can be achieved without an increase in the total number of truck movements from the Quarry Site and without additional impacts on surrounding landowners, it is assessed as achieving key environmental, social and economic impact requirements.

3.3.11 Broken Dust Monitoring Equipment [DM]

Representative Comment(s)

How long was our dust meter (regulated by Multiquip) been broken on the eastern side before we discovered it and told them and where is the broken glass that supposedly came off the monitor? We have glass bottles in our paddocks from the 1800's that are still there where they fell, yet the piece of glass from a very important dust monitor is missing? The only people that monitor this device is Multiquip. How come there is still no dust monitor on our adjoining boundary fence line which they have promised us for the last few years?

Additional Submission 1

Response

The Applicant advise that the dust gauge was replaced as soon as it was identified as broken. The Applicant is unable to comment on the cause of the breakage, or what happened to the glass. The Applicant's commitment to monthly collection of deposited dust samples would ensure any difficulties with the glass funnels or bottles (a requirement of the Australian Standard) are identified which would allow the bottles and/or funnels to be replaced.

3.4 COMPLAINTS MANAGEMENT

The Applicant notes that a complaint is not indicative of a non-compliance, however, acknowledges that it illustrates concern or unhappiness of the complainant in relation to Quarry's operations. The Applicant acknowledges that it receives many complaints from neighbouring landowners, primarily with respect to Quarry noise, dust emissions and effects on water resources. The Applicant notes that many of these complaints have been received by the EPA and DPE in recent times.

As demonstrated by the most recent noise monitoring undertaken of Quarry operations, compliance with noise criteria is achieved (see Section 2.11.1). Furthermore, recent dust monitoring confirms that dust deposition levels have been compliant with the nominated criteria over the last 12 months (coinciding with a significant increase in on-site activity) (refer to Section 5.2.3.4 and **Table 25**).

As is discussed in Section 2.13.5.2, the Applicant's preferred method of managing the concerns or issues of the local community and surrounding land holders has been to have these managed by the Applicant Community Liaison Manager on a case-by-case basis with the community. As a result, through 2017, a number of these contacts which could have been registered as complaints were not identified as such as the Applicant considered the matters addressed at the time with the respective stakeholder. The Applicant has subsequently implemented a more detailed complaints register which is managed by the Environmental Officer. Since the beginning of 2018, every complaint or comment received is registered, categorised and the relevant details recorded such that appropriate action can be taken. The register identifies what actions are taken to resolve the complaint and any other details relevant to each case.

As is also discussed in Section 5.2.4.5, a high number of noise complaints have been received from a single resident through the first half of 2018. While the noise monitoring undertaken by the Applicant has confirmed compliance with noise criteria, the Applicant has taken the following additional steps, as summarised in Section 2.11.3, to reduce noise levels and/or respond to noise-related complaints.

- Hard rock crushing operations will not be undertaken until the mobile crusher is relocated to the basalt extraction area, i.e. below natural ground level.
- The sand washing plant has been replaced by a model which replaces the current diesel-powered water pump with electric pumps.
- The site-based Environmental Officer has been trained and has access to noise monitoring equipment. The Environmental Officer will periodically check noise levels and protocols and procedures for this site-based monitoring which will be included in an updated version of the Noise Management Plan.
- The conditions of the PRP applied to EPL 13213 will be implemented.
- Noise monitoring will continue to be undertaken at least quarterly for the next 12 months to demonstrate compliance.
- The Noise Management Plan will be reviewed and updated to reflect the commitments made in the *Environmental Assessment* and this RTS.

A summary of the complaints register will be included in each Annual Review and trends in the number and nature of complaints tracked. Unfortunately, this analysis of trends may not be possible for the next Annual Review and this represents the first where this comprehensive registration of complaints has been undertaken.

3.5 COMPLIANCE MANAGEMENT

As a response to the escalating number of notices and other correspondence received from the DPE and other government agencies, as well as an increasing number of complaints received, the Applicant has taken a number of steps to ensure that compliance of the Quarry operations is regularly reviewed and documented. A summary of these actions are as follows.

- The Quarry is serviced by a dedicated site-based Environmental Officer to manage environmental performance at the Quarry. One of the primary roles of the Environmental Officer, who is based at the Quarry, is to promote the full implementation of the Quarry's management plans.
- As discussed in Section 3.4, a comprehensive complaints register is maintained allowing Quarry management to track any trends in complaints and address operations accordingly.
- The Applicant is committed to providing a quarterly update of environmental performance on their website. This performance report will identify:
  - Monitoring undertaken along with a summary of results and analysis of compliance;

  - A record of complaints received and how these were addressed;
  - A record of any incidents and how these were managed;
  - A record of any notices or other correspondence from regulators and actions to be taken; and
  - Information on upcoming operations.

- All management plans are now to be reviewed, i.e. initially following the determination of this proposed modification and then at least annually, in accordance with the conditions of PA 07_0155. The Environmental Officer will also review the management plans should substantiated complaints received warrant this or if opportunities to improve performance are identified.

  It is relevant to note that the most recent Show Cause notice issued by the DPE (see **Table 19**) was a result of self-reporting by the Applicant after the Aboriginal Heritage Management Plan was reviewed by the Environmental Officer.

- The Community Liaison Manager will continue to consult with the local community and investigate opportunities to either reduce or mitigate impacts.

It is noted that an Independent Environmental Audit is scheduled for the end of 2018 and this will provide an up to date record of compliance at the Quarry. This will also provide recommendations for rectification of any non-compliances or where performance could be improved. The Applicant is committed to providing the DPE with a copy of the IEA and an action plan responding to any non-compliance and identifying what actions would be taken with respect to the recommendations.

4. GOVERNMENT AGENCY SUBMISSIONS

4.1 ENVIRONMENT PROTECTION AUTHORITY

4.1.1 Introduction

The submission from the Environment Protection Authority (EPA) dated 1 March 2018 identified several issues for consideration by the Department of Planning and Environment in relation to:

- inaccuracies and errors;
- waste management;
- noise; and
- air quality.

These issues are summarised in the following subsections and a response provided to address each issue.

4.1.2 Inaccuracies and Errors

The following inaccuracies noted in the EPA submission are identified and addressed as follows.

1. *The EPA believes that Plates 1-4 of the EA are labelled incorrectly, with Plates 1 and 2 being of Jerrara Road, Marulan and Plates 3 and 4 being of Oallen ford Road, Bungonia.*
    - *Recommendation: this error be corrected.*

Response

On review of page 64 of the *Environmental Assessment* the error is acknowledged. This has no material effect on the overall assessment. **Plates 1** to **4** have present the recently completed road widening upgrades.

2. *Table 3 in the NIA provides details of noise related complaints recorded by Multiquip. The EPA has provided details to Multiquip of complaints lodged to the NSW Environment Line in November 2013 and August 2016, however these complaints do not appear in Table 3 of the NIA.*
    - *Recommendation: Update Table 3 in NIA with an accurate register of complaints reported to Multiquip and the EPA.*

Response

The information on these and other noise related complaints have been provided to VMS Australia Pty Ltd and incorporated into an updated Noise Impact Assessment (NIA) (refer to **Appendix 14**).

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Plate 1: Pavement Widening of Oallen Ford Road (view north) (Ref: Oallen Ford 1)

Plate 2: Pavement Widening of Jerrara Road 1 (Ref: Jerrara Road 1)

Plate 3: Pavement Widening of Jerrara Road 2 (Ref:Jerrara 1)

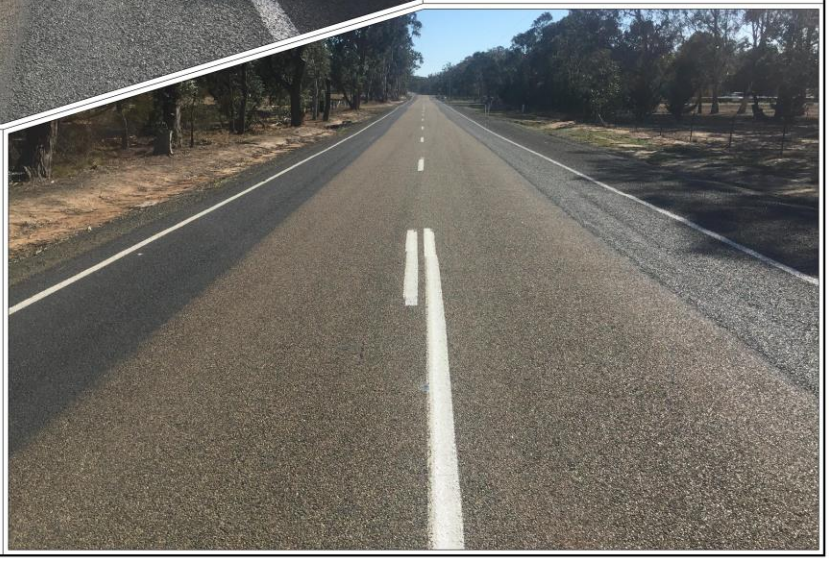

Plate 4: Pavement Widening of Jerrara Road 3 (Ref: Jerrara 2)

It is noted that in 2018, 24 of 28 complaints related to noise have been made by the neighbouring landowner of the "Inverary Park" property, Phil & Di Broadhead. As noted in Section 2.11.1, noise monitoring has been undertaken to assess noise levels at this residence which indicates that compliance with current noise criteria has been achieved. Elevated noise levels under inversion or other noise enhancing meteorological conditions are likely, however, it is important to note that assessment (of compliance) against noise criteria under such non-prevailing conditions is excluded in accordance with the NSW Industrial Noise Policy (under which the current noise criteria of PA 07_0155 have been established). As discussed in Section 2.11.2, the Applicant proposes the noise criteria of PA 07_0155 be modified to reflect the current Noise Policy for Industry (EPA, 2017). In doing so, the Applicant will be required to demonstrate compliance with these noise criteria under standard noise enhancing conditions.

Notwithstanding the above, and as discussed in Section 2.11.3, Multiquip is committed to implementing a Pollution Reduction Program (PRP) as required by Condition U of EPL 13213, as well as a variety of other design and management-based controls to ensure that noise levels are minimised.

3. *Figure 3 Sensitive Receptor Locations in the NIA appears to indicate that Residence 6 is project related, however the NIA provides calculations for that Residence as if it were not project related. Table 1 of the AQIA indicates that Receptor R6 is a project owned residence.*

   - *Recommendation: Clarify which sensitive receptors are project related and which are not, as this has implications from a noise perspective in terms of agreed/acceptable impacts.*

Response

It is confirmed that Residence 6 is not Project related (as reflected in ***Figure 3*** of the NIA).

It is noted that the footnote to *Table 1* of the Air Quality Impact Assessment (AQIA), Residence R6 is incorrectly identified as being owned by the Applicant. While this error is noted, Residence 6 has been assessed in both the NIA and AQIA as a non-project related sensitive receiver.

It is noted that an additional residence Residences 13 has been identified and included in the assessment of noise levels received at surrounding residences in the NIA (see Section 2.11.2 and **Figure 6**).

4.1.3 Waste

The EPA submission notes the following regarding waste materials.

4. <u>*Excavated Natural Material*</u>

   The EPA notes the proposal to import Excavated Natural Material (ENM) into the quarry primarily to backfill the extract area as part of final landform creation and rehabilitation of the Quarry, or to stockpile and on-sell within 12 months pf receipt at the quarry. … The EPA also notes, however, that the proponent intends to screen and blend ENM with

extracted sand and/or basalt to meet specific customer requirements. This is contrary to the conditions of the ENM exemption … would trigger the waste processing provision of the Protection of the Environment Operations Act 1997 for which the proponent does not have consent.

- *Recommendation: That the proponent clarify their intentions with regard to the future use of ENM, and what other actions or consent would be required in order to undertaken waste processing.*

5. *Treated drilling mud*

Similar to the issue of ENM, the EPA notes that treated drilling mud is mentioned in passing on page 121 of the EA. Under the treated drilling mud exemption 2014, the treated drilling mud can only be applied to land as engineering fill or for use in earthworks …

- *Recommendation: That the proponent clarify their intentions with regard to the future use of treated drilling mud, and what other actions or consent would be required in order to undertaken waste processing.*

Response

The Applicant acknowledges that once blended with material excavated from the Quarry Site, the Resource Recovery Orders and Exemptions for ENM and Treated Drilling Mud cannot be relied upon, either for application to land or delivery to another site. The Applicant confirms that prior to any such blending an application (separate to the development application) will be made to the EPA for a specific Resource Recovery Order and Exemption for the blended product(s).

4.1.4 Noise

4.1.4.1 Overview

The EPA submission identified a number of aspects of the 2017 Noise Impact Assessment (2017 NIA) for which further information or clarification was required. As discussed in Section 2.11.2, the Applicant commissioned VMS Australia to review and revise the NIA to address the EPA's submission. Throughout this response, reference is made to the "Revised NIA" that has been prepared in response to the EPA's comments.

The following provides the individual comments and recommendations of the EPA (in italics), as they related to the assessment of impacts associated with the:

- on-site activities of the Ardmore Park Quarry, for which the EPA is the Appropriate Regulatory Authority (ARA) (see Section 3.1.4.2); and
- off-site (traffic noise) impacts, for which the EPA is not the ARA (see Section 3.1.4.3).

The responses are provided after each of the EPA raised issues along with reference to the relevant section(s) of a revised NIA where relevant (see **Appendix 14**).

4.1.4.2 On-site Noise Impacts

The EPA wrote:

6. *The EPA notes that as part of the modification process, the quarry proposes to extend its operating hours (product transportation) during part of the 'night' period as defined in the NSW Industrial Noise Policy (INP), from 5am to 7am. The EPA notes that the proponent identifies F-class and G-class temperature inversions as a feature of the area according to the methodology in the INP, but does not consider temperature inversions in the NIA due to "the significantly reduced morning shoulder period operations". The EPA disagrees with this approach and believes that as the increased hours of operation specifically occur during the defined night period, temperature inversions should be considered.*
   - *Recommendation: That the NIA considers temperature inversions.*

Response

The last paragraph in *Section 6* of the Revised NIA has been amended to identify F-class temperature inversions as being relevant to the assessment of the extended operating hours occurring during the night-time period.

Table 13 and *Table 14* have been added to the Revised NIA and present the noise emissions under night-time calm and F-class temperature inversions (see also Section 2.11.2 and **Table 6**). These demonstrate compliance with the existing noise criteria can be achieved subject to operation in accordance with the modelled scenarios.

The EPA wrote:

7. *No prevailing winds were included in the modelling, yet the NIA states in Section 3.4 that there was 'a prevailing south to south-westerly wind' during attended monitoring in response to a complaint. A south to south-westerly wind would enhance the noise levels at some of the identified residential receivers, especially at any sensitive receivers to the north and north-east of the site.*
   - *Recommendation: That the NIA should be clear on whether any winds are 'prevailing' in accordance with the methodology in the INP.*

Response

VMS Australia acknowledge the potentially confusing wording used in *Section 3.4* of the 2017 NIA and have removed / amended this accordingly. VMS confirm that the determination of no prevailing winds as presented in *Section 6* of the NIA remains correct.

The above notwithstanding, the revised NIA (see **Appendix 14**) now includes modelling results under noise enhancing weather conditions representative of wind up to 3m/s (in all directions) and stability class F inversion conditions. As discussed in Section 2.11.2, compliance with the day time trigger levels is predicted at all by Residence 9 under the cumulative sand and basalt extraction scenario. For night time operations, compliance is predicted when product loading is from the basalt product stockpiles and at all but Residence 9 (1dB(A) exceedance) when loading is from the sand product stockpiles.

The EPA wrote:

8. *The predicted noise levels for equipment operating in-pit are significantly lower than those calculated by the EPA with a simple distance calculation to R3. The proponent should provide adequate detail on the modelled depth of the equipment operating in the quarry pit, as the EPA cannot verify the modelled results in the NIA without modelling details such as equipment heights/in-pit depths.*
    - *Recommendation: That the proponent provide adequate detail on the modelled depth of the equipment operating in the pit.*

Response

The following provides further detail on the two operational scenarios assessed in the NIA, namely, basalt extraction and sand extraction.

Figure 4 of the NIA shows the basalt extraction operational scenario used in the noise modelling. The elevations of operating equipment are as follows.

- The in-pit basalt crushing equipment and FEL would be operated at 630m AHD.
- The Sand Screening and Washing Plant and FEL would be operated at 640m AHD.
- The Dozer (Dz) operating to the north would be at surface (soil / overburden stripping activities) at approximately 640m AHD.
- The excavator (Ex), dump trucks (DT) and water truck (WT) would commence operations near surface, however, operate at progressively lower elevations. Accordingly, the noise sources have been modelled 5m to 10m below surface (630m to 635m AHD).
- The road trucks (PT) travel at surface which can be identified from the 5m contours on the figure (progressively rising from 635m AHD to 660m AHD).
- The Dry Screening Plant (SP) would operate at 620m AHD.

Figure 5 of the NIA shows the sand extraction operational scenario used in the noise modelling. The elevations of operating equipment are as follows.

- The in-pit basalt crushing equipment and FEL would be operated at 630m AHD.
- The Sand Screening and Washing Plant and FEL would be operated at 640m AHD.
- The Dozer (Dz) operating to the north would be at surface (soil / overburden stripping activities) at approximately 640m AHD.
- The excavator (Ex), dump trucks (DT) and water truck (WT) within the sand extraction area would commence operations near surface, however, operate at progressively lower elevations. Accordingly, the noise sources have been modelled 5m to 10m below surface (620m to 625m AHD).
- The road trucks (PT) travel at surface which can be identified from the 5m contours on the figure (progressively rising from 640m AHD to 660m AHD).
- The Dry Screening Plant (SP) would operate at 620m AHD.

It is further noted that following the completion of noise monitoring at receivers surrounding the Quarry in March 2018, noise model validation was undertaken to calibrate the model outputs with the measured noise emissions of the Quarry (refer to *Section 7.3* of the revised NIA). Accordingly, the noise predictions have been revised in *Section 7.4* of the revised NIA.

The EPA wrote:

9. *The EPA notes that some of the proposed equipment appears to have not been included in the modelling. For example, Figures 4 and 5 of the NIA indicate 'front-end loader x 2', however Table 8 indicates only one front-end loader was included in the model. Similarly, the conveyors indicated in Figure 4 (Basalt processing) are also not included in Table 8 of the NIA.*
    - *Recommendation: That the proponent provide adequate detail on proposed equipment used in the modelling.*

Response

Following a review of the equipment operated at the Quarry during the noise compliance monitoring, and after confirming this equipment would continue to be operated at the Quarry, the equipment schedule (as presented in *Table 8* of the NIA) was revised. The sound power level associated with conveyors and conveyor drives has been included into sound power level nominated for the primary piece of equipment feeding the conveyor.

The EPA wrote:

10. *The EPA notes that although the NIA states "that basalt and sand extraction operations are not undertaken concurrently", there is no discussion on whether sand extraction and basalt extraction can occur simultaneously and if so, what the predicted noise levels will be from the combined operations.*
    - *Recommendation: That the proponent clarify why sand and basalt extraction cannot occur simultaneously and what management practices would be put in place to ensure this. In the absence of this, the NIA should consider a worst-case scenario of sand and basalt extraction occurring simultaneously.*

Response

While it is noted that simultaneous extraction in the basalt and sand extraction areas is precluded by limitations on available plant, additional scenarios to present the cumulative noise emissions of concurrent sand and basalt extraction, and night-time product despatch operations have been considered. Two additional dump trucks have been added to the equipment schedule presented in *Table 8* to allow for the concurrent extraction operations. The results, demonstrating compliance can be achieved, are presented in *Table 12* of the revised NIA.

The EPA wrote:

11. *The NIA does not include an assessment of any applicable annoying noise characteristics as per the Noise Policy for Industry.*
    - *Recommendation: That the NIA include an assessment of annoying noise characteristics and, where necessary, add a correction to the predicted noise levels.*

Response

VMS Australia advise that *Section 4* of the INP was withdrawn and the modifying factor adjustments outlined in the EPA's Noise Policy for Industry (2017, NPI) – Fact Sheet C are to be used when assessing the characteristics of a noise source. Fact Sheet C nominates modifying factor corrections of up to 10dB(A) for noise sources that contains certain characteristics, such as tonality, intermittency, irregularity or dominant low-frequency content, that can cause greater annoyance than other noise at the same noise level.

Based on the Quarry noise surveys conducted to date (refer to *Section 3.4* of NIA) the noise emissions from the Quarry site do not contain any annoying noise characteristics. Also, based the complaints received to date (refer to *Section 3.5* of NIA) there may have potentially been noise emissions with annoying noise characteristics on one-off occasions which were dealt with promptly and were unusual occurrences. Accordingly, noise emissions from the Quarry do not have annoying noise characteristics and consequently no modifying factor adjustments have been applied to the assessment.

Section 7.3.1 has been added to revised NIA to cover modifying factor adjustments.

The EPA wrote:

12. *The EA describes a proposed 2 metre to 3 metre high visual amenity bund in Section 2.2.4. The NIA does not mention this bund and therefore it is not clear if the modelling in the NIA included the proposed visual amenity bund.*
    - *Recommendation: The NIA should clarify if the modelling in the NIA included the proposed visual amenity bund.*

Response

The modelling in the NIA includes the Visual Bund Wall. Clarification of the inclusion of bunding within the noise modelling has been added to of the revised NIA.

The EPA wrote:

13. *The EPA notes that the EA states there is a proposed increase in the size of the product trucks to 50 tonnes, in order to increase product transport capacity without increasing the number of truck movements. It is reasonable to expect that there would be a corresponding increase in the sound power level (SWL) of the product trucks given the increase in size. Table 8 of the NIA, however, states that the SWL of the product trucks will be the same as is currently approved.*
    - *Recommendation: That the NIA include a discussion on the sizes of existing and proposed product trucks and their associated SWLs.*

Response

The proposed larger product trucks to be used at the Quarry are Kenworth or Scania trucks. Based on maximum noise testing result of 82.8dB(A) conducted in accordance with Vehicle Standard (Australian Design Rule 83/00 – External Noise) 2005 (ADR 83/00) the sound power level (SWL) of each truck is calculated to be 108dB(A). However, the NIA adopted a SWL of 113dB(A) to conservatively represent the continued use of the lower capacity (higher SWL) trucks or potential underperformance of the trucks.

It is noted that the proposed product trucks are larger than the current product trucks, however, the new product trucks are compliant with the *United Nations – Economic Commission for Europe Regulation No. 51 Uniform Provisions Concerning The Approval Of Motor Vehicles Having At Least Four Wheels With Regard To Their Noise Emissions*, which has very stringent noise emission requirements for trucks and consequently much lower SWLs than would normally be anticipated.

A table to note has been added to *Table 9* of the revised NIA to justify no increase in the truck SWL.

4.1.4.3 Off-site (Traffic) Noise Impacts

The EPA wrote:

14. *As noted above, the SWL used for product trucks is unclear. There is also no information about what modelling method/standard was used for noise predictions. Consequently, the EPA is unable to verify the results for the modelling of noise from off-site traffic movements.*
    - *Recommendation: Additional information must be provided in the NIA.*

Response

The SWL for the product trucks is identified in *Table 9* of the revised NIA.

The calculation of road traffic noise was undertaken using the US Environment Protection Agency's method for the prediction of the L_{Aeq} noise levels for the offset distances to the closest residences adjacent to the approved Quarry Transport Route.

The US EPA's method for prediction of the L_{Aeq} noise levels from traffic is an internationally accepted theoretical traffic noise prediction model which takes into account the L_{Amax} vehicle noise levels (light and heavy), receiver offset distance, pass-by duration, vehicle speed, ground absorption (based on the ratio of soft ground and average height of propagation), number of hourly vehicle movements, receiver height, truck exhaust height and the height and location of any intervening barriers.

Section 8.2 of the NIA has been revised to include additional information on the modelling method used to predict the road traffic noise emissions.

The EPA wrote:

15. *To assess the off-site traffic movements in Section 8, the NIA includes the daytime criteria for a freeway/arterial/sub-arterial road from the NSW Road Noise Policy (RNP) of LAeq15hr 60dBA. The EPA notes that both the Project Approval and the Noise Management Plan for the premises include traffic noise criteria of LAeqlhr 55dBA.*
    - *Recommendation: The proponent should clarify why they have chosen to assess the offsite traffic movements against a different criteria to the limits included in the Project Approval for the site. Alternatively, the NIA should include an assessment of off-site traffic noise against the current Project Approval traffic noise criteria.*

Response

Project Approval 07_0155 was granted based on a traffic noise assessment undertaken in accordance with the current guideline at the time, the ECRTN. Under the ECRTN, the appropriate assessment criterion at the time was 55 L_{Aeq1hr}.

As stated in *Section 8.1* of the NIA, the ECRTN was replaced by the RNP in July 2011. Accordingly, it is appropriate to update the traffic noise assessment in accordance with the current road noise policy, the RNP. Under the RNP, the appropriate assessment criteria are the $L_{Aeq(period)}$ criteria for principal haulage routes. Notwithstanding, *Section 8.1* has been revised to include the Project Approval daytime traffic noise criterion (55 $L_{Aeq(1hour)}$), including the introduction of the corresponding night-time road traffic noise criterion (50 $L_{Aeq(1hour)}$). Further, an assessment against the traffic noise criteria of PA 07_0155 has been included in *Section 8.4* of revised NIA which concludes that with the exception of the residence at 989 Jerrara Road, the Modification is also predicted to be compliant against the morning shoulder road traffic noise $L_{Aeq(1hour)}$ criterion of 50dB(A).

The exceedance of criteria should, however, be reviewed within consideration to the following.

- Compliance is predicted during the period 5:00 am to 6:00 am.
- During the period of 6:00am to 7:00am, an $L_{Aeq(1hour)}$ of 50.7dB(A) is predicted (exceedance of only 0.7dB(A)). This is the accumulation of:
  - background road traffic noise of 46.0dB(A); and
  - Quarry traffic noise (10 truck movements, 10 light vehicles) of 49.0dB(A).
- The predicted road traffic noise reduces to 50.2dB(A) and 49.6dB(A) when the number of truck movements from the Quarry is limited to 8 and 6 respectively (which is indicative of most transport scheduling – see **Table 1**).

The EPA wrote:

16. *Section 5.3.3.2 of the EA states 'The increased hours of transportation would allow for scheduling to minimise, where practical, truck movements during the following periods*

    8:00am to 9:00am Monday to Friday during school terms

    3:00pm to 4:00pm Monday to Friday during school terms.'

    However, Tables 9 to 11 of the EA (and Tables 13 to 16 of the NIA) do not indicate a change in the proposed heavy vehicle movements during those hours.

    - *Recommendation: That the NIA clarify truck movement times along the transport route.*

Response

Section 8.3 of the revised NIA has been amended to include *Table 17* which reflects the indicative scheduling of trucks (as discussed in Section 2.3) on average (88 truck movements), high demand (110 truck movements) and maximum production (124 truck movements) days. The corresponding schedule for high demand and maximum production days (within each month) is also provided.

While noting that the assessment of traffic noise considers the maximum hourly vehicle movements (and therefore 174 day time truck movements and 20 night time truck movements), the scheduling (refer to **Table 1**) illustrates that the number of truck movements during the periods of 7:30am to 8:00am and 4:15pm to 4:45pm, when the Culmone's operated school bus completes school pick-ups and drop-offs on Jerrara Road between the Hume Highway and Bungonia (returning to Goulburn via Mountain Ash Road), will be reduced.

4.1.5 Air Quality

The EPA submission notes the following regarding air quality.

- *While the air quality assessment predicts that small increases in off-site emissions would still fall below applicable criteria, the EPA notes that there is still potential for off-site impacts from dust emissions unless control measures are employed at all times.*

Response

The Applicant has reiterated their intention to minimise dust particulate matter and gaseous emissions through enforcement of the design, operating condition and management measures nominated in *Section 5.5.3* of the *Environmental Assessment*.

The Applicant confirms that an updated Air Quality Management Plan (AQMP) would be prepared following determination of the proposed modification. The AQMP would review and document both proactive and reactive management measures, along with the proposed monitoring and response regime to be implemented.

4.2 GOULBURN MULWAREE COUNCIL

4.2.1 Introduction

The submission from the Goulburn Mulwaree Council (GMC) dated 22 February 2018 provided a range of comments for consideration during the assessment of the development application in relation to extraction area extension, high mass truck usage, increased truck movements and hours of operation, and the proposed Voluntary Planning Agreement. These issues are summarised in the following subsections and a response provided to address each issue.

4.2.2 Extraction Area Extension

Goulburn Mulwaree Council wrote

The 2010 Landscape Management Plan should be updated with the new information associated with the current modification proposal.

Response

The Applicant confirms that the Landscape Management Plan will be reviewed and updated within 3 months of determination of the proposed modification.

4.2.3 Annual Production Increase and Use of Higher Mass Limit Trucks

Responses to the recommendations of Goulburn Mulwaree Council regarding road conditions of the haulage route, identified in *italics*, are provided in the following sub-sections.

4.2.3.1 Road Cross Section

Goulburn Mulwaree Council recommends

1. *Road shoulder be increased to 1.5m with 0.5 of this shoulder being sealed.*
2. *Culvert/bridge widths (barrier to barrier) be increased to 9m.*

Response

On review of the Council recommendation, the Applicant believes that while this may be considered to represent a higher standard of design which is not warranted in this case for the following reasons.

Sealed Road Shoulder Increase

a) The Applicant is in the process of finalising extensive and costly road upgrades to Oallen Ford and Jerrara Roads to satisfy the condition of Project Approval MP_070155. These road upgrades were assessed by Goulburn Mulwaree Council and supported prior to the issuing of MP 07_0155.

b) The proposed modification does not propose any overall increase in the number of truck movements on the roads of the product delivery route. Rather these movements would be spread over an additional 6 hours per day and could increase on some days above the current (approved) daily maximum of 88.

c) As no change to the total number of vehicle movements on the roads of the product delivery route, the Applicant does not believe there should be a change in the road standard required.

d) Furthermore, the National Heavy Vehicle Regulator has deemed these roads as satisfactory for the operation of the HML vehicles proposed as part of the modification. Council was consulted in the assessment of the proposed PBS vehicles and route and the Applicant is unaware of the cross-sectional dimensions of the roads being raised as a constraint. PBS Permit 168751v4 does not include any conditions requiring further upgrades to any roads of the product delivery route.

The above notwithstanding, the Applicant engaged TUP to complete and Existing Road RSA (see Section 2.7.2) to review the recommendations of Council for an increase in the sealed carriageway width. The RSA identified that most shoulder widths exceed the minimum requirement of 0.5m unsealed and that a minor increase in shoulder width in some locations would not provide for any further improvement in safety for increased length vehicles (noting that the RSA determined the roads to provide adequate road safety for the proposed transport operations).

Bridge / Culvert Widths

a) The culvert and bridge crossings (A to K) of the product delivery route (see **Figure 9**) have been inspected and determined to be good condition (Bridge Design, 2018 – refer to **Appendix 4**). These crossings, as recently upgraded, provide a barrier to barrier width which exceeds 8m in all cases (see **Table 20**) consistent with the sealed carriageway width of the road (2 x 3.5m lanes and 2 x 0.5m shoulder) and as required by PA 07_0155.

Table 20
Bridge and Culvert Widths

Location[1]		**Carriageway Width (m)**
Jerrara Road	Crossing A	9.7
	Crossing B	9.0
	Crossing C	8.9
	Crossing D	9.2
	Crossing E	8.8
	Crossing F	9.5
	Crossing G	8.1
	Crossing H	8.7
Mountain Ash Road	Crossing I	11.0
Oallen Ford Road	Crossing J	8.8
	Crossing K	8.2
	Note 1: Refer to **Figure 8**	
Source: Multiquip Quarries Pty Ltd		

b) As no change to the total number of truck movements (averaged monthly) is proposed and considering the route has been approved for the PBS approved vehicles (see Section 2.4), further upgrades to these crossings would be costly, disruptive and not considered necessary given the existing approval.

The Existing Road RSA confirmed that the existing crossing width of 8m is adequate given the uniform treatment on approach to the crossing and that an increase of 0.5m in the shoulder width would not result in an improvement in road safety through the crossing for increased length vehicles.

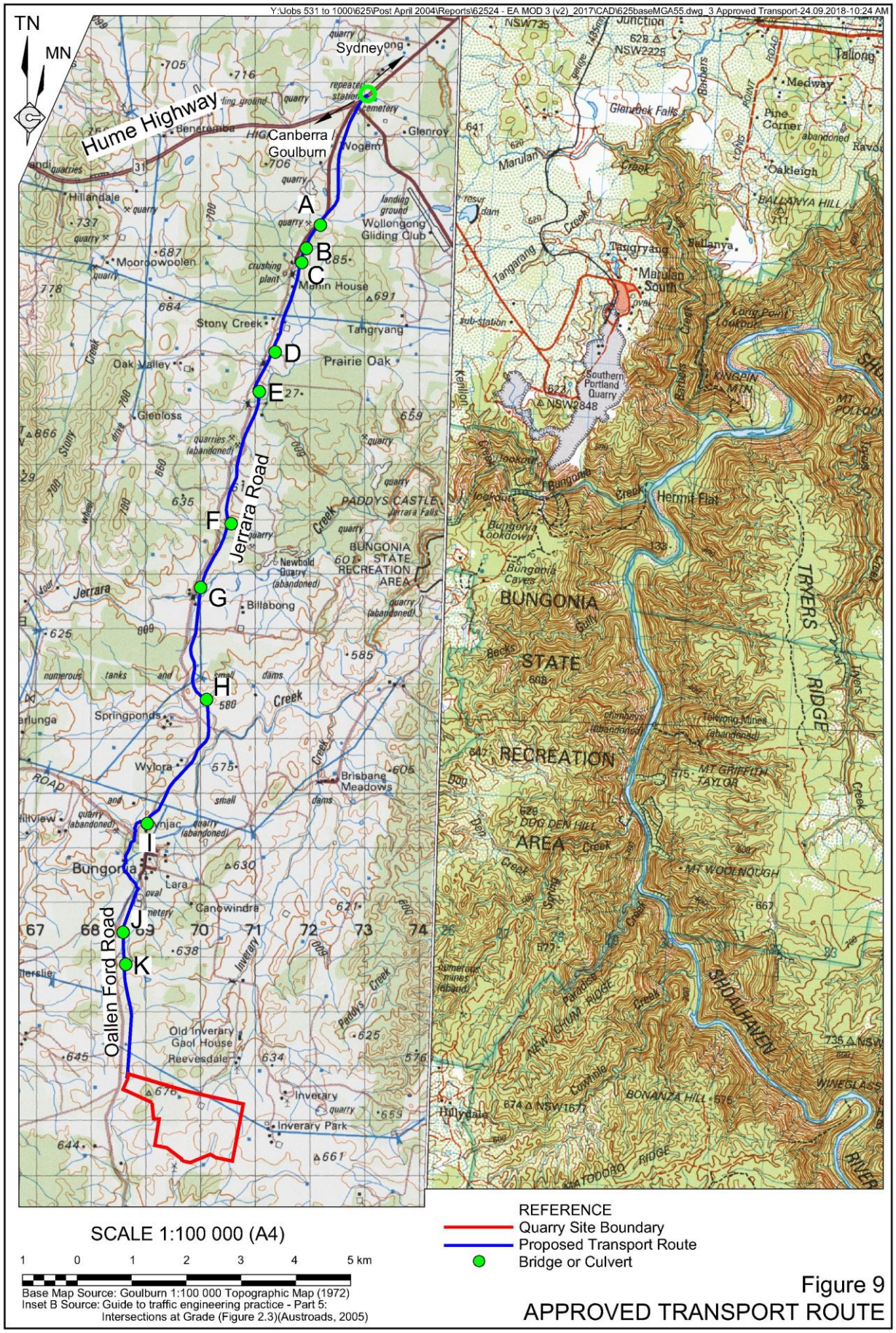

Figure 9
APPROVED TRANSPORT ROUTE

4.2.3.2 Road Geometry

Goulburn Mulwaree Council recommends

3. *A turning path analysis should be carried out for all intersection turns.*

Response

The Applicant has commissioned a swept path analysis for the 25.8m long trucks travelling along the product delivery route (see Section 2.5) with the results confirming that the swept paths at the following intersections are satisfactory (see **Appendix 6**).

- Jerrara Road / Mountain Ash Road
- Mountain Ash Road / Bungonia By-pass Road
- Oallen Ford Road / Bungonia By-pass Road
- Oallen Ford Road / Ardmore Quarry Access Road

4.2.3.3 Road Side Safety

Goulburn Mulwaree Council recommends

4. *Clear zones be provided in accordance with Austroads Guide to Road Design rural road widths, Part 6, Table 4.1.*
5. *Road side safety barrier analysis be carried out and barriers installed as appropriate.*

Response

Clear Zones
On review of the Council recommendations, the following is noted.

- *Section 4.2.2* of Austroads Guide to Road Design rural road widths, Part 6, 2nd eds. (Austroads, 2010) defines a clear zone as "… *the area adjacent to the traffic lane that should be kept free from features that would be potentially hazardous to errant vehicles. The clear zone is a compromise between the recovery area for every errant vehicle, the cost of providing that area and the probability of an errant vehicle encountering a hazard. …".*
- *Section 4.2.2* of (Austroads, 2010) recognises that the application of clear zones to existing roads may be problematic because of a lack of space or objects located at the side of the road. This is especially relevant where the local roads have been established with cut or fill batters on one or both sides.

Noting the above, the Applicant engaged TUP to complete an Existing Road RSA (see Section 2.7.2) to consider the matter of clear zones and implications for road safety. The Existing Road RSA (see **Appendix 8**) confirmed that on completion of the recent road upgrades, clear zones of 4m are provided. This is consistent with Austroads clear zone distances for annual daily traffic of less than 750 vehicles. On the basis that the proposed modification proposes no changes to average daily truck movements, the Existing Road RSA concludes that, apart from some minor potential roadside hazards, existing clear zones are adequate. The

Applicant has reviewed these roadside hazards, as identified in *Tables 3.1* and *3.2* of the Existing Road RSA (see **Appendix 8**) and will respond as part of negotiations for a VPA (refer to Section 2.12).

Road Side Safety Barriers

The Applicant has continued to liaise with Council over the adequacy of road upgrades and installed road side safety barriers as recommended in the recent Construction RSA (see Section 2.7.1 and **Appendix 7**).

Road side safety barriers were subsequently inspected as part of the Existing Road RSA (see **Appendix 8**) which confirms these have been installed as required to provide protection from roadside hazards and to manufacturers specifications with appropriate end treatments. Some minor issues with the length of installed guardrail have been identified (see *Tables 3.1* and *3.2* of the Existing Road RSA - **Appendix 8**) and will be addressed as part of negotiations for a VPA (refer to Section 2.12).

4.2.3.4 Structural Analysis

Goulburn Mulwaree Council recommends

6. *A fresh pavement analysis is carried out and pavement upgrades undertaken where pavement life is less than 10 years at the time of commencement of road haulage.*
7. *Structural assessment of bridges / culverts should be carried out.*

Response

The Applicant has completed both recommended studies (refer to Sections 2.5 and 2.6.1).

The remaining life analysis has identified isolated sections of the product delivery route where pavement life is less than 10 years. As discussed in Section 2.12, the Applicant is committed to establishing a VPA with Council to address the matter of road resealing.

The structural assessment of bridges and culverts has been completed and confirmed these as satisfactory for use by product carrying trucks (refer to **Appendix 4**).

4.2.3.5 Surface

Goulburn Mulwaree Council recommends

8. *In view of the current lane widening, to provide a uniform and weather-proof surface, the sealed surface of route length should be resealed.*

Response

The Applicant considers the establishment of a uniform and weather-proof surface on the roads of the product delivery route as an appropriate and worthwhile objective.

However, the Applicant notes that road works have been undertaken to date to satisfy the existing conditions of MP 07_0155. In satisfying these requirements, a road surface suitable for local and Quarry use is available.

As identified in Section 2.12, the Applicant proposes terms of a VPA which would allow for the progressive resealing of the roads. the Applicant proposes the funding of this is shared between the Applicant and Council, with the Applicant funding to be drawn from annual contributions made on a per tonne/km basis.

In proposing this approach to resealing of the roads of the product delivery route, the Applicant notes the results of the remaining road life analysis (see **Appendix 3**) with respect to materials used for resealing.

4.2.3.6 Delineation

Goulburn Mulwaree Council recommends

9. *The route length to have installed:*
   - *Centrelines and edgelines (sic).*
   - *Guideposts.*
   - *Raised Reflective Pavement Markers (RRPMs).*
   - *Curve warning signs.*

Response

With the exception of RRPMs, the Applicant will provide for the recommended delineation features.

4.2.3.7 Engineering Design

Goulburn Mulwaree Council recommends

10. *New engineering design drawings should be submitted reflecting the above engineering designs. Work-as-executed drawings to be submitted post construction.*

Response

Multiquip notes that the RSA (**Appendix 8**) did not recommend any modifications to the road alignment and cross section. As a result, no works are proposed on the approved transport route and no works-as-executed plans are required.

4.2.4 Increased Maximum Daily Truck Movements

Goulburn Mulwaree Council makes the following recommendations regarding changing the maximum daily number of truck movements from 88 to 124.

- *Ensure appropriate mechanisms are in place to ensure that truck movements are recorded and readily verifiable*
- *The road safety audit should be updated to take account of additional traffic counts undertaken in 2017 and of the changes to the type and timing of vehicle movements.*

Response

The Applicant operates a weighbridge with truck movements recorded on exit from the Quarry Site. The Applicant would make available monthly vehicle movements on its website to demonstrate the daily maximum and monthly average restrictions are being adhered to.

Since the submission was lodged, the Applicant has completed two RSAs of the product delivery route (see Section 2.7). The most recent of these, an Existing Road RSA (see **Appendix 8**), concluded that the road as constructed provided an adequate level of road safety for the proposed modified transport operations.

4.2.5 Increase in Hours of Operation for Product Loading and Transportation

Goulburn Mulwaree Council considers that the impact of 10 truck movements per hour prior to 7am Monday to Saturday and after 6pm Monday to Friday on residents along the haulage route has not been sufficiently identified and considered. An assessment of this impact should quantify the number of residents affected, link specific community to proposed actions to address this impact, and consider all adjoining properties with dwelling entitlements.

Response

The Applicant accepts that the proposed extended hours of transportation were not explained or presented as well as could have been. Section 2.3 and **Tables 1** to **3** attempt to provide a more accurate illustration of the effect the increased hours of transportation would have on local traffic levels.

It is also acknowledged that the presentation of information on the social setting and local community(ies) was based on knowledge gained through correspondence of the Applicant personnel with the Community Consultative Committee, phone calls, property visits and other interactions. In making this admission, however, it is noted that information on the proposed modification was provided to the residents of Bungonia, properties surrounding the Quarry Site and adjoining Oallen Ford and Jerrara Roads through various mechanisms (as described in *Section 4.2.2.3.2* of the *Environmental Assessment*) with the opportunity to discuss the issues of concern with the Applicant or their consultants provided in each case.

The above notwithstanding, and as presented in Section 2.13, the Applicant has requested R.W. Corkery & Co Pty Limited complete a Supplementary Social Impact Assessment (SSIA) with three primary objectives.

1. To better define social setting, including the social values, concerns and aspirations of those potentially impacted. Where distinct groups are identifiable, these are described.
2. To review and assess the likely impact of the proposed modification on this social setting, considering extent, duration, severity or sensitivity. These impacts are considered with reference to those measures the Applicant has proposed to address the key issues of concern to the local community.
3. To provide further recommendations as to measures which could reduce or mitigate any residual impacts.

After review of the social setting, values and matters of concern to the local community, the potential impacts of the proposed increase in transport hours of operation have been acknowledged. Based on an analysis of local land ownership, it is assessed that between 65 and 75 landowners are located along the product delivery route (including properties within Bungonia and on the roads which intersect with Jerrara Road) (see **Figure 8**).

As discussed in Section 2.13, the significant operational controls, safeguards and management measures proposed by the Applicant, would minimise and largely mitigate the impacts associated with the proposed increased hours of operation and have been assessed as unlikely to result in significant changes to the amenity, use or enjoyment of local properties. The measures proposed to minimise and mitigate impacts include transport scheduling to minimise where possible the frequency of truck movements during critical periods of the day, as well as a commitment to the establishment of a community fund (as part of a VPA) to provide a source of funding to community enhancement projects.

In making this assessment in relation to impacts on local amenity, consideration has been given to the fact that the operation of trucks on the product delivery route is currently approved and that the proposed modification is likely to result in the hourly frequency of truck movements reducing (with these movements now spread over an additional 6 hours per day).

As discussed in Section 2.13.6, the significant economic and social contribution that the Quarry would continue to make to the local and regional economies, including the opportunities available through this proposed modification for direct funding of community projects and promotion of tourism, compensates for the minor impacts associated with the increased hours of transport operations on the product delivery route. This notwithstanding, the Applicant is committed to continuing to engage with, and assist the local community wherever possible over the life of the Quarry.

4.2.6 Voluntary Planning Agreement to Replace Section 94 Contributions

Goulburn Mulwaree Council considers that a Voluntary Planning Agreement (VPA) needs to be assessed and negotiated in conjunction with a development proposal, and notes that no specific discussions have been held with Council about the terms of such a VPA. GMC also notes that it has amended its Section 94 Plan and Development Control Plan in relation to heavy vehicle developments since the last modification was approved.

Response

Although discussions with Council are well advanced regarding the content of the VPA, a response has not been received from Council at the time of finalisation of this document. Multiquip will continue to discuss the VPA with Council. It is proposed that the agreed VPA is submitted to the elected Council for endorsement.

4.3 DEPARTMENT OF INDUSTRY

4.3.1 Introduction

The submission from the Department of Industry (DoI) dated 27 February 2018 provided advice that a number of issues were identified in their review of the modification application that should be given further consideration. These issues are summarised in the following subsections and a response provided to address each issue.

4.3.2 Land Ownership

The DoI submission notes the following regarding land ownership.

- *The proponent should note that landowner consent and an authority to occupy will be required from Crown Lands for the crossing of Bungonia Creek.*
- *The proponent should identify Crown Lands and Bungonia Park Trust as adjoining landholders impacted by the proposal.*

Response

The comments of DoI are acknowledged, however, it is noted that the proposed modified operations do not require any change to the design, construction or use of the Bungonia By-pass Road. The construction and operation of this road, including the crossing of Bungonia Creek, has been previously approved.

Following from the above, Crown Lands and Bungonia Park Trust are acknowledged as adjoining landholders. Specific consideration of these landholdings has not been completed for the proposed modification based on their being no change to the use of the land.

4.3.3 Water Demand

The DoI submission requests confirmation as to the water demand of the proposed modified operations. The DoI wrote:

- *The water demand for processing has been maintained at the volume required for a production limit of 400 000tpa of 70ML/yr, even though the modification is to increase the production limit to 580 000tpa. The proponent should detail the water demands for the proposed production limit increase.*
- *The proponent should detail what demands other than the quarry are placed on the groundwater bore at the site for use on the property to confirm the water availability for the proposed development and the potential requirement for the additional WAL purchased.*

Response

With respect to the requested review of the water balance, it is noted that the *Environmental Assessment* identified 400 000tpa as the maximum sand production (with the remaining quarry production provided by hard rock products). The water balance provided by SEEC (2017) considered raw usage of 700L per tonne of sand produced with an overall loss of between 25% to 50% (through retention within the sand product, evaporation and incidental losses through plant leakage and seepage) of the water added, i.e. net usage of between 175L and 350L of water per tonne of sand washed. Noting this, the water demands of the proposed production limit increase have been presented.

Notwithstanding the above, the Applicant has taken the opportunity to review the water demand/losses associated with the Quarry operations to consider two scenarios.

1. Sand production of 400 000tpa and hard rock production of 180 000tpa, i.e. a review of the water balance presented in the *Environmental Assessment*.
2. Sand production of 580 000tpa.

In both cases, the water losses are further examined and calculated as follows.

- Evaporation: has been calculated based on the annual evaporative rate for Goulburn (3.5mm/day) multiplied by the surface area of the dams into which the bore water is pumped (7 000m^2).
- Retention in sand products: being 5%.
- Incidental losses (leakage and seepage): assumed to be 5% of water added to the wash plant.
- Desilting of water storage dams: calculated as 50% be mass of silt removed from the base of the dams.
- Dust suppression (Crushing Plant): calculated as 10L per tonne of material crushed.
- Dust suppression (General): calculated as 2L per day per area of coverage[11].

Table 21 provides the water demand/losses for these two scenarios.

The "Ardmore Park" production bore has in the past been used to supplement dams on the "Ardmore Park" property, however, now that Quarry production is increasing this is unlikely to be undertaken. There are no other demands on the "Ardmore Park" property production bore.

The reviewed and recalculated water demand for the Quarry (see **Table 21**) illustrates that with some additional surface water harvest, the demands of the modified (increased production) Quarry operation could be supplied by the "Ardmore Park" production bore for which the Applicant holds an existing allocation of 110ML.

[11] On some days, up to 3 applications of 2L/m^2 could be applied. However, there would also be many days when no applications area required (due to rain or high in situ moisture content of surfaces following rainfall).

Table 21
Water Demand / Losses

	Production (t)			
	Scenario 1		Scenario 2	
	Sand	Basalt	Sand	Basalt
Water Demand / Loss (ML)	**400 000**	**180 000**	**580 000**	**0**
Evaporation (Dam surface area [7 000m^2] x evaporative rate [3.5mm/day] x 365)	8.9		8.9	
Retained in Product (50L/t)	20.0	-	29.0	-
Incidental (5% of water use through sand plant [35L/t])	14.0	-	20.3	-
Desilting (500L/t silt removed)	20.0	-	29.0	-
Dust Suppression - Crushing Plant (10L/t crushed)	-	1.8	-	0.0
Dust Suppression - General (2L x surface area x 52 weeks x 5.5 days)	11.4		17.2	
Total	**76.2**		**104.4**	

4.3.4 Groundwater

The DoI submission presents a number of recommendations with respect to information which should be provided on the assessment of and impacts to groundwater. The submission was referred to Larry Cook Consulting Pty Ltd who responded in a letter report (LCC, 2018b) which can be viewed in full as **Appendix 15**. The following provides a summary of the responses provided by LCC (2018b) to each of the requests for additional information.

The DoI wrote:

- *The proponent should provide an assessment of quarrying impact upon groundwater within the connected palaeo-alluvial aquifer to address the requirements of the Aquifer Interference Policy. The maximum annual groundwater take will need to be accounted for by holding sufficient entitlement in a Water Access Licence for the relevant water source.*

Response

The requested information is beyond the scope of the hydrogeological investigations required for the proposed modification. The proposed modification proposes only to extend the area of basalt extraction to the base of the lowest basalt flow (approximately 615m AHD). Importantly, the proposed modification does not incorporate any extension of sand extraction operations and therefore no additional impacts on the palaeo-alluvial aquifer to that already approved.

The Hydrogeology Assessment of LCC (2017) therefore focused on any impacts which could be associated with the extended extraction area within the basalt aquifer. That is, the report assessed the potential impacts on the groundwater system that may be associated with the

proposed additional extraction operations. LCC (2018b) reiterated the basalt to be extracted is unsaturated and therefore extraction of the basalt would not result in the 'take' of any additional groundwater resources. An explanation of the unsaturated conditions, based on hydrogeological investigations and assessments were undertaken in 2003 and 2004 as well as monitoring in accessible bore in the basalt resource during groundwater monitoring campaigns, is provided as follows.

- The basalt sequence is relatively thin, varying from approximately 8m to about 35m.
- Groundwater flow in the basalt is likely to radiate outward from the central part/s with the majority of flow migrating via fractures and joint networks with negligible flow through pores spaces.
- The sequence is strongly weathered and heavily jointed with an extensive network of close-spaced sub-vertical joints formed as a consequence of shrinkage during cooling of the lava. Although the basalt mass has negligible porosity and are relatively low permeability groundwater systems, these joints can provide substantial vertical conductivity. The hydraulic conductivity can be relatively high.
- Thick basalt flows can incorporate unconfined aquifers especially if the flows overlay relatively 'low permeability' materials such as a shale unit. The basalt on 'Ardmore Park' is relatively thin and directly underlain by a thick sequence of highly permeable fine to coarse sand. The permeability of the sand significantly exceeds the permeability of the basalt.

Based on the above, any recharge (all from rainfall) would percolate vertically to the base of the basalt sequence and effectively drain into the sand sequence. The vertical joints intersect the sub-horizontal interlayer contacts that may have increased permeability. However, the vertical joints act as groundwater conduits which effectively drain the basalt sequence.

Notwithstanding the lack of groundwater within the basalt resource, *Section 10* of the Hydrogeology Assessment (LCC, 2017) provides an assessment of the proposed modification against the Aquifer Interference Policy. LCC (2017) demonstrates that:

1. No additional water would be taken, given the unsaturated nature of the basalt, and therefore this is properly accounted for (see above);
2. the minimal impact thresholds are therefore not exceeded (refer to *Section 10.4* of LCC, 2017); and
3. planning for measures in the event that the actual impacts are greater than predicted including a contingency for monitoring has been provided (refer to *Section 10.5* of LCC (2017).

Reiterating the conclusion of LCC (2017), as the basalt is unsaturated and the proposed modification does not incorporate any expansion of the approved sand extraction operations, no additional impact on the water table, groundwater pressure and availability or water quality would result from the extension of the basalt extraction area. The Aquifer Interference Policy should not retrospectively apply to the approved sand extraction operations.

With respect to the DoI comments relating to entitlement in a Water Access Licence for the relevant water source, it is noted that the Applicant holds an allocation of 110 units (110ML) from the Fractured Rock Groundwater Source of the Greater Metropolitan Region Groundwater Sources - Goulburn Fractured Aquifer Water Sharing Plan. The proposed modification to the basalt extraction area will have no influence on groundwater take. With respect to the proposed increase in production, the Applicant records water drawn from the production bore and will ensure that this remains within the entitlement of the water access licence. A revised site water balance has been prepared by others to demonstrate water requirements will remain within the allocated volume.

The DoI wrote:

- *To assist in understanding the site and predicted impact, cross sections of the conceptual hydrogeology model and plots of contoured groundwater level for each separate aquifer presented in the Hydrogeology Assessment should be provided.*

Response

As noted in the Hydrogeology Assessment (LCC, 2017), detailed geological and hydrogeological investigations carried out in 2004 and 2008 revealed the presence of flat-lying, stacked remnants of Tertiary basalt over the southern, central and eastern parts of 'Ardmore Park' (see **Figure 2** and *Figure 1* of **Appendix 15**). The basalt overlies sequences of sand and gravel which incorporates a 20m to 40m clay aquitard. The sand deposit overlies a basement sequence of folded and faulted Silurian, Devonian and Ordovician sedimentary and volcano-sedimentary rocks (see *Figure 2* of **Appendix 15**). The cross-section A-B-C (see *Figure 3* of **Appendix 15**) also illustrates this geological sequence on the Quarry Site.

The hydrogeological investigations revealed the presence of three types of aquifers beneath the Quarry Site.

- Partly saturated 'alluvial' aquifers associated with the stacked and interbedded alluvial sand and gravel deposits beneath the base of the basalt (palaeo-alluvials/deep leads).
- 'Hard rock' aquifers associated with sub-vertical geological discontinuities (fractures, faults) that have dissected the Palaeozoic basement rocks underlying the palaeo sand deposits.
- 'Hard rock' aquifers associated with the possible southern extensions of limestone formations (karst) hosted by the Silurian basement sedimentary rocks.

LCC (2018b) reports that there is a significant geological and hydrogeological (hydraulic) disconnect between the deeper 'fracture-controlled' hard rock aquifers hosted by the 'old' deformed rock basement sequence and the relatively shallow and younger 'unconfined' alluvial sand aquifer.

Water levels in the palaeo sand resource and underlying Palaeozoic basement rock sequence are monitored in accordance with the Quarry *Water Management Plan* and reported annually. Contour plans of the water table and sand resource are provided by *Figures 4* and *5* of **Appendix 15**. As the basalt is unsaturated, monitoring bores have not been constructed in the basalt (see comments below).

The DoI wrote:

- *There is a notable lack of groundwater level monitoring data at the site of the basalt quarry operations and proposed extension area. The proponent should, within the next month, install a nested groundwater monitoring bore, measuring levels of groundwater in both basalt and palaeo-alluvial aquifers, immediately north of the current basalt - sand quarrying and planned extension area.*

Response

Monitoring bores have not been constructed in the basalt resource given baseline and follow-up monitoring in the resource drilling (of the mid-2000s) revealed the basalt sequence to be unsaturated. Accessible bores in the basalt resource are checked for the presence of groundwater from time to time during scheduled prescribed water level (and water quality) monitoring in the network of sand and basement monitoring bores. The basalt resource remains unsaturated.

In order to verify the existence of unsaturated conditions in the basalt resource recorded since the mid-2000s, a nested (or twinned) set of monitoring bores could be constructed immediately north of the extraction area. An approximate location of the monitoring site is shown in *Figure 6* of **Appendix 15**. This shallow monitoring bore will be designed to monitor the presence (and fluctuations) of groundwater in the basalt sequence. The deeper monitoring bore will be designed to intercept the water table in the underlying paleo sand sequence. The final depth of each monitoring bore would be determined based on the results of drilling.

The DoI wrote:

- *Groundwater level monitoring bore BHAP7 is listed as "lost". The proponent should be required to replace this bore prior to any approval being granted.*

Response

BHAP7 was installed in the Palaeozoic basement rock sequence and drilled as a groundwater exploration bore (not as a monitoring bore). While this bore was inadvertently covered by farm activities several years ago a network of three 'hard rock' monitoring bores and one 'deep' sand monitoring bore remain (see *Figure 5* of **Appendix 15**). This network provides adequate water level monitoring in the 'old' basement rock sequence to allow for assessment of any impacts of production pumping in Bore BHAP6 on these aquifers. Sand and basalt extraction activities on 'Ardmore Park' will not impact on the 'hard rock' aquifer systems.

Notably, BHAP7 was removed from the inventory of monitoring bores of EPL 13213. This bore is not considered necessary for water level monitoring.

The DoI wrote:

- *The water level response trigger for affected bores refers to drawdown of greater than 15% attributable to the project. To aid in interpretation, the proponent should clarify what the corresponding water level is in each bore.*

Response

The water level response trigger of 15% attributable to the project has been endorsed as part of the Quarry *Water Management Plan*. The documentation supporting the proposed modification simply restates this as an ongoing commitment for the modified Quarry operations. The baseline measurements, as included in *Appendices 2.2* and *2.4* of the *Water Management Plan* are reproduced in **Tables 22** and **23**.

Table 22
Baseline Water Level Measurements: Hard Rock Monitoring Bores

Bore	Host Geology	Baseline Measurement (m) (date)	Standing Water Level (m)							
			25.7.03		29.10.03		16.4.04		14.5.04	
			BGL	AHD	BGL	AHD	BGL	AHD	BGL	AHD
BHAP1	Basement Rocks	9.00 (9/7/03)	8.05	62.53	8.80	624.5	8.57	62.47	8.90	62.44
BHAP5	Palaeo- alluvial	23.60 (21/7/03)	21.50	61.30	21.50	613.0	21.19	61.33	21.43	61.31
BHAP6	Basement Rocks	57.00 (24/7/03)	57.00	58.30	57.20	582.8	56.92	58.31	56.44	58.36
BHAP7	Basement Rocks	52.10 (24/11/03)					52.76	58.02	52.83	58.72
BHAP8	Palaeo- alluvial	Dry (15/7/03)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
BHAP9	Palaeo- alluvial	Dry (15/7/03)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
BHAP10	Basement Rocks	25.20m (27/11/03)					25.30	61.22	25.43	61.21
BGL = Below Ground Level								AHD = Australian Height Datum		

Table 23
Baseline Water Level Measurements: Sand-Hosted Monitoring Bores

Monitoring Well	Date	Standing Water Level (SWL) (m TOC)	Casing Stickup (m)	SWL Elevation (m AHD)
BH1	10/11/04	Dry	0.50	Dry
BH2		3.62	0.50	620.88
BH3		0.84	0.73	619.99
BH4		1.06	0.73	619.27
BH5		3.35	0.68	619.83
BH6		6.99	0.92	621.40

The Applicant will review the *Water Management Plan* following determination of the proposed modification. This review will include consideration of monitoring data collected since 2003 on the property, and in registered bores of the local area (in similar geology), to establish a long-term baseline and modify the triggers (if necessary) to reflect natural fluctuations in water levels.

The DoI wrote:

- *The spring flow trigger in Table 21 refers to a significant decrease in the spring flow rate, which is defined as a flow rate of less than 0.1L/s. It is recommended this be reviewed to consider the acceptability of the impact before this trigger is reached.*

Response

A 'V' notch weir and calibrated automated flow sensor were installed in the 'spring' on 'Inverary Park' in Lot 2 in DP84966 which adjoins the eastern boundary of 'Ardmore Park in early 2018 to accurately log spring flow. A reduction from approximately 8 800L/day to 7 800L/day has been recorded since installation of the weir. When converted this approximates 0.1L/s. Accordingly, the Applicant commissioned an investigation of the spring flow as nominated in the Quarry *Water Management Plan* (and reproduced in *Table 21* of the *Environmental Assessment* accompanying the proposed modification).

Larry Cook Consulting Pty Ltd was commissioned to assess the reduction in flow of the spring (see Section 2.8 and **Appendix 9**) and concluded that the overall decline in flow rates is not due to an impact from extraction or groundwater pumping. As the decline in spring flow to 0.1L/s cannot be attributed to the Quarry operations, the trigger level is considered appropriate.

On 26 September 2018, the Applicant received a letter from Department of Planning and Environment requesting an independent review by a suitably qualified and experienced expert approved by the Department to undertake monitoring and confirm that the Quarry is complying with the water impact assessment criteria. The Applicant intends to complete this assessment as soon as practicable with an appropriate person approved by DPE.

The DoI wrote:

- *In the case that approval is granted for the project, the following should be included as conditions of consent:*
  - *Inclusion of the new nested monitoring bore in the groundwater monitoring plan and the updated Water Management Plan.*
  - *The proponent must update the Surface Water Management Plan and Groundwater Management Plan in consultation with DoI Water.*

Response

As noted above, a nested (or twinned) set of monitoring bores could be constructed immediately north of the extraction area in a location identified in *Figure 6* of **Appendix 15**. The shallow monitoring bore could monitor the presence (and fluctuations) of groundwater in the basalt sequence. The deeper monitoring bore would intercept the water table in the underlying paleo sand sequence. The final depth of each monitoring bore would be determined based on the results of drilling.

The Applicant is committed to a review and update of the Quarry *Water Management Plan*.

4.4 DEPARTMENT OF EDUCATION

The Department of Education (DoE) submission dated 8 March 2018 argued that the proposed transport arrangements to "allow for scheduling to minimize, where practical, truck movements [8 - 9am and 3 - 4pm Monday to Friday during school terms]", are vague and discretionary, would be impossible to enforce, and do not match the time slots it requested in its July 2017 submission. DoE requests that consent conditions require scheduling of vehicle movements to avoid school bus operating periods, and that truck movements are stopped or limited to 10 per hour during school bus operating times.

Response

Section 2.3 (**Tables 1** to **3**) provides greater clarity on the likely product delivery schedules. It is noted that the current school bus timetable limits operation on the product delivery route to between 7:30am and 8:00am in the morning and 4:15pm and 4:45pm in the afternoon.

Table 1 indicates that under the existing approved operations, during morning and afternoon school bus periods up to 14 and 4 heavy vehicle movements per hour respectively are likely. However, under the proposed scheduling, hourly movements during the morning and evening school bus times would be indicatively 8 and 4 heavy vehicle movements per hour respectively under each of typical, high and maximum production days. This represents a substantial reduction in heavy vehicle movements during the morning school bus period.

It also noted that the Applicant has made a number of commitments with respect to driver behaviour during the period of school bus operation on the product delivery route. In particular, the Driver Code of Conduct will require drivers to implement the following behaviours.

- Avoid convoying with other product trucks. When driving on Jerrara Road or Oallen Ford Road, the driver is required to allow adequate space between trucks to permit traffic to pass.
- When operating during school bus operation periods, drivers are required to use UHF Channel 30 and contact the school bus driver regarding its location on local roads.
- When approaching the location of a school bus, drivers must notify the school bus driver using UHF Channel 30.
- When approaching and passing a stopped school bus, drivers must decelerate so that the speed of the truck when it passes the stopped bus does not exceed 40km/hr.

4.5 WATER NSW

The Water NSW submission dated 21 February 2018 raised the following issues, each of which is responded to below.

Comment

- *Water NSW noted that the EA does not include an assessment of the performance of the operations to date at managing impacts on water quality with respect to the requirements contained within the development consent and other approvals, and how any shortcomings have been or are proposed to be addressed as previously requested.*

Response

The Applicant accepts that since receipt of PA 07_0155, there have been several water management related incidents which have had, or had the potential to adversely impact on local catchments. These incidents and the responses to them have been reported in the annual reports prepared for the Quarry since August 2015.

As a result of these incidents, and under instruction by the DPE through an Order issued on 4 August 2017, the Applicant undertook a comprehensive review of the Quarry's water management systems resulting in the preparation of an updated and amended version (2.3) of the Quarry *Water Management Plan*. In summary, the updated *Water Management Plan* provides for the following.

- An updated Erosion and Sediment Control Plan (ESCP) which documents and describes the overarching objectives, principles and general standards applied to the management of erosion and sediment control. Also included are five detailed ESCPs which describe erosion and sediment control design and management for the following component areas of the Quarry.
  - Quarry Site (including a Site Establishment and Operations Phase).
  - Bungonia By-Pass Road.

  - Road Widening (Oallen Ford Road – Jerrara Road).
  - Mountain Ash Road – Jerrara Road Intersection Upgrade.
  - Major Waterway Crossing Culvert and Bridge Works – Jerrara Road.
- An update to the Surface Water Management Plan component of the *Water Management Plan* to reflect changes resultant from the revised ESCP.
- An update to the Groundwater Monitoring Plan component of the *Water Management Plan* to reflect the updated monitoring requirements of EPL.

It is noted that since the completion of the updated *Water Management Plan*, the Applicant has operated without water management-related incident.

Comment

- *The quantities of Excavated Natural Material (ENM) to be imported have not been specified.*

Response

The Applicant will attempt to maximise the volume returned to the Quarry Site as backloaded trucks to assist in the backfill of the final landform and rehabilitation of the site. The volume of ENM to be imported to the Quarry Site has not been quoted, however, as there are many variables which could affect this.

- The production of ENM at external sites, noting that significant void space within the extraction areas is not likely to be created for at least 5 years.
- The location of these sites and proximity to the delivery routes of the Quarry.
- Economic factors which could influence producers of ENM to deliver to alternate sites.
- Changes in legislation or regulation which could influence the permissibility or feasibility of this activity.

The above notwithstanding, the final landform presented as *Figure 8* of the *Environmental Assessment* represents the placement of approximately 2 000 000m^3 of backfill material. Given importation and backfill in large quantities is unlikely to commence for at least 5 to 10 years, this represents the import of between 55 000m^3 and 60 000m^3 annually. As discussed in *Section 2.7.3* of the *Environmental Assessment*, the final landform may be subject to change over the life of the Quarry as more or less ENM and/or VENM is available. Changes will be identified and discussed in future Landscape Management Plans.

Comment

- *The existing approved Water Management Plan should be updated to incorporate the additional measures for surface water management proposed in the EA.*

Response

As requested by WaterNSW, the Quarry *Water Management Plan* will be reviewed and revised following determination of the proposed modification to reflect the changes nominated to Quarry layout and water management (including erosion and sediment control). The *Water Management Plan* will be regularly reviewed over the life of the Quarry, and in particular if:

- there is an incident involving water management at the Quarry;
- there is a further modification to Quarry operations;
- the final landform is modified to reflect the volume of ENM or Virgin Excavated Natural Material (VENM) to be received; or
- as instructed by the DPE.

4.6 OFFICE OF ENVIRONMENT AND HERITAGE

4.6.1 Overview

The Office of Environment and Heritage (OEH) submission dated 16 February 2018 has requested additional information in relation to the assessments of biodiversity and Aboriginal heritage. The following provides the individual comments and recommendations of the EPA (in italics), as they relate to the assessment of biodiversity and Aboriginal heritage impacts, along with a response which addresses each request.

4.6.2 Biodiversity

OEH wrote:

- *The Flora and Fauna report of the EA does not apply the Framework for Biodiversity Assessment (FBA) method, nor is Kevin Mills accredited in accordance with the FBA requirements. Assessment of biodiversity values using the FBA method would require a plot-based full floristic survey of the site to confirm and document whether the vegetation is exotic or not.*

Response

As described in Section 2.10 (see also **Appendix 11**), a supplementary field survey and assessment confirmed that as described by KMA (2017), the vegetation of the site is dense grassland dominated by the introduced pasture species Phalaris (*Phalaris aquatica*) and other exotic grasses and broad-leaf herbs. On entry of the data into the FBA credit calculator (as the assumed pre-existing plant community type, *Silvertop Ash - Blue-leaved Stringybark shrubby open forest on ridges, north east South Eastern Highlands Bioregion*), no ecosystem credits were generated.

4.6.3 Aboriginal Heritage

OEH wrote:

- *The EA states that the extraction area extension would occur in a zone of low archaeological potential and is unlikely to impact Heritage values. However this is not supported by an archaeological survey or investigation and therefore its*

validity cannot be determined. A qualified archaeologist would be able to review the environmental assessment to ensure that Aboriginal cultural heritage values would not be impacted by the modification.

Response

RWC engaged Ben Churcher, Principal Archaeologist of OzArk Environmental & Heritage Management (OzArk EHM) to complete an inspection of the proposed extraction area extension and comment on the potential for impact on Aboriginal cultural heritage values. The assessment of Mr Churcher, which is provided in full as **Appendix 10**, confirms that the proposed extraction area extension does occur in an area of low archaeological potential (as originally assessed by CHMA, 2008) and impact on Aboriginal cultural heritage values is very unlikely.

OEH wrote:

- *The 2010 Aboriginal Heritage Management Plan should be updated by a qualified archaeologist to confirm that all required management measures have been undertaken since commencement and to reflect any new measures resulting from the modification.*

Response

Mr Churcher of OzArk EHM also reviewed the zone of high archaeological potential mapped by CHMA (2008) in which sub-surface testing of the landform is required in accordance with the Quarry *Aboriginal Heritage Management Plan* (refer to **Appendix 10**). Mr Churcher's inspection and review confirmed the areas which best reflect the isolated small areas of 'the sand body in the south, focusing primarily on the hill slopes' nominated by CHMA (2008) to be tested (see **Figure 4**). In accordance with the AHMP, sub-surface testing of the sandy zone is only required prior to extraction of the sand from this area.

Sub-surface testing has been completed in these areas, in consultation with Pejar Local Aboriginal Land Council. A report is currently in preparation and the results will inform a review and revision to the Quarry *Aboriginal Heritage Management Plan*. The Applicant has engaged OzArk EHM to complete this full review with an update to be prepared and submitted to OEH and the DPE for review and approval within 3 months of determination of this application.

4.7 DEPARTMENT OF PLANNING AND ENVIRONMENT

4.7.1 Introduction

The submission from the Department of Planning and Environment (DPE) dated 7 March 2018 requested that particular consideration be given to issues relating to traffic and transport, noise, groundwater, social impact, the Voluntary Planning Agreement, compliance history, and Aboriginal cultural heritage and biodiversity. These issues are summarised in the following subsections and a response provided to address each issue.

4.7.2 Traffic and Transport

The DPE submission notes the following regarding traffic and transport impacts, each of which is responded to below.

Comment

- *The total existing light vehicle counts in Tables 8 and 9 of Appendix 5 do not include the quarry contribution of light vehicles. Please recheck the calculations made in these tables.*

Response

The required corrections have been made and are reflected in **Tables 2** and **3** (refer to Section 2.3) and the Revised NIA (see **Appendix 14**).

Comment

- *The Department requests that the RTS provide an assessment of the likely intersection performance of all intersections affected by the proposed modification, using current traffic counts and projected over a 10-year horizon. Please identify and discuss any potential changes to the performance of these intersections.*

Response

Appendix 5 provides the requested assessment of intersection performance. The results are summarised in Section 2.6.2 and confirm a Level of Service A over the life of the Quarry.

Comment

- *Road safety is a key concern raised by the community and Council. A road safety audit must be provided in the RTS.*

Response

Two RSAs have been completed for the product delivery route (refer to **Appendices 6** and **7** and Section 2.7). The most recent Existing Road RSA (**Appendix 8**) confirmed the roads as functioning effectively and safely for the current intended purpose and combination of vehicle types. The most recent Existing Road RSA concluded that the existing road environment is suitable for use by the proposed transport operations involving the longer PBS vehicles without presenting an increased safety risk.

Comment

- *Section 2.4.2 notes that the vehicle length of performance based scheme (PBS) trucks will be 25.3 m, whereas the schematic provided in Appendix 5 notes a vehicle length of 23.7m. Please specify the dimensions of the proposed PBS trucks.*

Response

Appendix 2 includes PBS Permit 168751v4 which approves the operation of the nominated 25.8m truck configuration (vehicle approval V180307 – VA4990) on the roads of the product delivery route subject to the conditions of the permit (see pages A2-15 and A2-18).

4.7.3 Noise

The DPE submission notes the following regarding noise impacts, each of which is responded to below.

Comment

- *Table 8 – What is the difference between "Quarry NIA (Approved)" and "Current Quarry Operation (Approved)"? Please specify if there are any operational changes from what was approved following consideration of the original NIA.*
- *Section 7.1 notes that sand and basalt extraction do not occur at the same time. However, the titles of Tables 9 and 10 describe both sand and basalt extraction, and Figure 5 depicts a dozer in the basalt extraction area during the sand extraction scenario. Please clarify the operating scenarios for the noise assessment.*
- *Section 3.3.1 discusses the existing Noise Management Plan including Best Achievable Technology, source, path and receiver mitigation. Is this mitigation currently implemented? What mitigation is proposed under this modification?*
- *Has the assessment of road noise taken into account the worst-case noise emission levels associated with either PBS trucks or the existing truck and dog haulage?*

Response

The revised NIA addresses the comments of the EPA and DPE. In summary.

- The Quarry NIA (Approved) refers to the equipment modelled as part of the original Quarry NIA. It is included to provide some comparison between the original modelling, operations as currently undertaken and changes proposed as part of the proposed modification.
- The dozer was included to represent clearing activities ahead of extension to the relevant extraction area. The dozer was modelled in the NIA submitted with the *Environmental Assessment*. While the availability of mobile equipment would preclude concurrent extraction from the sand and basalt extraction areas, the revised NIA has included scenarios for both the daytime and night time where activities in these areas are concurrent.
- The Applicant is continuing to review and adapt operations to implement noise management practices to reduce noise. For example, the sand plant now operates an electric pumping system which removes the need for the diesel powered pump which was the noisiest activity in the sand washing area. As discussed in

Section 2.11.3, additional noise controls are either implemented or proposed as part of this modification. Ongoing review of noise management will be undertaken as part of a PRP condition of EPL 13213 and quarterly noise monitoring.

- Both the NIA submitted to accompany the *Environmental Assessment* and revised NIA use pass-by noise levels of the trucks to be used.

4.7.4 Groundwater

The Department notes that the quarry's potential impacts on groundwater was a frequent concern raised in submissions. Please provide a detailed response to the issues raised in DoI Water's submission.

Response

Refer to Section 4.3.4.

4.7.5 Social Impact

In reviewing the *Environmental Assessment*, the DPE states that it "*does not adequately assess social impacts that may occur as a result of this modification. The Department requests that the RTS provide greater consideration of the proposed modification's social impacts, particularly in relation to local amenity, having regard to the Department's Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development (September 2017).*"

Response

A Supplementary Social Impact Assessment has been prepared with reference to assessment of the key parameters for social impact assessment identified in *Section 1.1* of the DPE's *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development* (September 2017) ("the Guideline").

After establishing a social baseline and identifying the key social values and concerns of the local community, it has been confirmed that the local community places a high value on the rural amenity of the local setting, its tranquillity, significant features of the built and natural environment, access to water resources, the safe use of local roads and maintenance of a peaceful rural lifestyle. The fear that the Quarry will reduce the enjoyment of the local setting as a result of adverse impacts to these values is understood and evident both in comments made during consultation and in the submissions to the exhibition of the *Environmental Assessment*.

The potential for the Quarry to impact on the amenity or natural resources of the local setting, and lifestyle of those who reside on land adjoining the Quarry Site, product delivery route and surrounding lands, has been acknowledged. However, noting the significant operational controls, safeguards and management measures proposed by the Applicant, the increase in impacts associated with the proposed modification on the principal social values are unlikely to result in significant changes to the amenity, use or enjoyment of local properties or the built or natural environment of the local setting. On this basis, the significant economic and social

contribution that the Quarry to the local and regional economies, including the opportunities available through this proposed modification for direct funding of community projects and promotion of tourism, are considered to compensate for the minor impacts associated with the increased hours of transport operations on the product delivery route.

4.7.6 Proposed Voluntary Planning Agreement

The DPE requires "*in order to assess whether a Voluntary Planning Agreement could replace the condition for Section 94 contributions, further information must be provided. The terms of the VPA should be negotiated with Council and the RTS must specify what is being offered. The Department would seek Council's consideration of the proposed VPA prior to modifying the existing condition*."

Response

The Applicant continues to negotiate the terms of a VPA with Council. Section 2.12 presents the terms as proposed by the Applicant. The Applicant is confident of confirming these terms during the assessment and determination phase of the proposed modification.

4.7.7 Compliance History

The DPE make reference to the concerns raised in a number of community submissions over the company's history in complying with the project's current conditions of approval. Some of these concerns relate to:

- noise and dust;
- truck driver's code of conduct; and
- operating and haulage hours.

The DPE also notes that a range of compliance enforcement actions have been initiated since establishment of the Quarry.

The DPE requests that "*Considering that the proposed modification is seeking to increase the scale of the quarry's operating conditions, what measures is Multiquip proposing in order to ensure ongoing compliance with the Project Approval in the future?*"

Response

Refer to Section 3.

4.7.8 Aboriginal Cultural Heritage and Biodiversity

The DPE requests "*the RTS addresses OEH's concerns and provides an appropriate assessment of these impacts*."

Response

Refer to Section 4.6.3.

4.8 OTHER AGENCIES

The following government agencies reviewed the *Environmental Assessment* and raised no issues or objections.

- Transport for NSW
- Heritage Division
- Roads and Maritime Services
- Division of Resources and Geoscience, Geological Survey of NSW

5. PUBLIC SUBMISSIONS

5.1 INTRODUCTION

As noted in Section 1, 49 public submissions which object to or raise concerns over the proposed modification have been received. While all submissions are afforded equal consideration, it is noted that of the 49 submissions:

- two are from special interest groups[12] (Rural Lifestyle Resident Action Group (Bungonia) and Bungonia and District Historical Society Inc.);
- two are from the same person (Submissions 248720 and Add 3); and
- multiple objections have been received from at least three individual households (Submissions 246100 and 246910, 246713 and 246742, and 246740 and 246742).

Each of the submissions received have been reviewed with the individual issues and objections categorised. A separate file is included with this Response to Submissions (Objection Summary.xls) which lists the 49 submissions received, 64 specific issues raised within 23 broader categories for review (see also **Appendix 1**). One of these categories (Compliance History) containing 10 specific issues has been addressed as part of the overall assessment of the Quarries compliance record in Section 3.2.2. Of the remaining 22 categories (and 55 specific issues) Sections 4.3.2 to 4.3.21:

- identify the number of submissions raising this particular issue or objection;
- provide a direct quote or quotes from relevant submissions referencing this issue; and
- provide a response to the issue raised, including reference back to the *Environmental Assessment* or specialist assessments, where relevant.

It is noted that within each category, there is likely to be some variation in the specific matters raised which reflects the particular circumstance or values of the author of each submission. The response concentrates on the common matters which are the basis for the objections, with a focus on the proposed approach to managing and mitigating the issues which are the source of the objection(s).

On review of the submissions, it was identified that Submission 246970 from the owners of the neighbouring "Inverary Park" property included a number of detailed attachments addressing issues related to groundwater, air quality, noise and visual impacts. Given the proximity of this landowner to the Quarry, the detailed nature of the submission and the fact that many of the matters raised are indicative of the concerns held by a number of the neighbouring landowners surrounding the Quarry Site, this submission has been addressed individually (Section 5.2).

[12] For the purposes of this document, a Specialist Interest Group is considered an organisation which advances the interest of a specific issue, range of issues or group of people. Such groups may be formal incorporated organisations or more informal collections of people with similar interests or concerns, e.g. action groups of regional representative groups.

5.2 SUBMISSION NO. 246970 – INVERARY PARK

5.2.1 Overview

"Inverary Park" is a landholding of approximately 220ha to the immediate east of the Quarry Site which has been held within the one family since 1853. The property is operated as a grazing (sheep) property and is reliant on spring-fed dams for water supply.

The submission claims that the current Quarry operations are having a significant impact on the owners and other surrounding neighbours, with specific reference to the following.

- Loss of income due to reduced viability of property operations as a result of groundwater depletion.
- Reduced amenity due to Quarry noise, air quality and visual impacts.
- Financial loss due to land devaluation.

The following considers the information, claims and objections raised in relation to impacts on or associated with groundwater / spring flow, air quality, noise, visual impact, land devaluation and overall amenity.

5.2.2 Groundwater

5.2.2.1 Impacts on Spring Flow

The owner of the "Inverary Park" property claims that groundwater pumping from a bore of the Quarry Site and the extraction operations have resulted in a reduction in flow from a spring, referred to as Phil's Spring in all previous assessments and management plans for the Quarry, on the property.

The owner of "Inverary Park" refers to recorded spring flow rates from Phil's Spring which illustrate a steady decline from 28 000L/day to 7 700L/day between May 2003 and January 2018. Although the submission admits that the volume of water pumped from the "Ardmore Park" property production bore (referred to hereafter as either APBH6 or "the production bore") is unknown, the owner of "Inverary Park" claims the cause of spring flow decline has been the extraction of water on the Quarry Site.

Response

The matter of spring flow reduction and the possibility that this was caused by Quarry-related operations, either groundwater pumping or extraction on the Quarry Site, has been investigated on a number of occasions, most recently as described in Section 2.8. This most recent report (LCC, 2018a), included a detailed investigation of local geology, aquifer properties, climate, water pumping and extraction activities on the Quarry Site and the spring flow measurements of Phil's Spring. As discussed in Section 2.8, the claim that spring flow reduction is a result of activities on the Quarry Site is not supported by the outcomes of LCC (2018a) which are summarised as follows.

- The significant distance between the production bore and Phil's Spring is 1.56km.

- There has not been any significant pumping of groundwater from the production bore since installation which could account for the reduction in spring flow over this time (see **Table 24**).

Table 24
Summary of Production Bore (APBH6) Operations 2003 to Present

Period	Activity
24 July 2003	Bore Drilled to 124m depth
8 April 2004	Pump testing (45 hrs@13 L/s)
July 2004 – early 2007	No pumping
2007	Limited intermittent pumping for stock watering (estimated <2ML).
2008	Limited intermittent pumping for stock watering (estimated <1ML).
2009 – 2011	Occasional pumping to supplement proximal dam storage for stock watering.
2011 – 2013	Pump seized in about 2011 due to inactivity. Pump retrieved in September 2013 and replaced. Bore cleaned in October 2013 and new pump installed.
Nov 2013 – Jan 2014	Bore pumped intermittently to supply water for road works – Bungonia bypass road.
Jan 2014 – late 2015	No pumping
Late 2015 – mid 2016	Bore pumped intermittently to supply water for miscellaneous road works.
Mid 2016 – early 2017	No pumping.
Early 2017 – present	Bore pumped for road works and sand washing (approximately 20ML to date with average of 0.8ML per week).
Source: Modified after LCC (2018a) – Tables 1 and 2	

- No groundwater has been intercepted in either the active basalt or sand extraction areas.
- There is a significant geological and hydrogeological (hydraulic) disconnect between the deeper 'fracture-controlled' hard rock aquifers (from which the production bore pumps water) and younger 'unconfined' alluvial sand aquifer (see **Figure 3**).
- The shallow sand aquifer providing the spring discharges in the local area is separated from the deeper paleo alluvium by a district-significant 20m to 40m thick clay aquitard which effectively acts as a hydraulic barrier.
- Monitoring in bores which surround the production bore do not identify any reduction in standing water levels which would suggest the pumping is depressurising the deeper alluvial aquifer. This indicates that the production bore is not overlying the basement rock sequence and therefore not causing any leakage from the shallow 'unconfined' alluvial aquifer that provides spring flow in the area.

- As illustrated by the chart's provided as evidence of spring flow decline, this decline commenced prior to commissioning the production bore on 'Ardmore Park' (in 2004) and throughout the extended periods of non-pumping, low-volume pumping and intermittent (irregular) pumping up until early 2017 (13 years).
- The trend in the declining flow rate correlates initially with below average rainfall across southeastern Australia between 2001 and 2009 (Millennium Drought). This suggests a decrease in the groundwater storage in the shallow sand sequence and commensurate decrease in the discharge rate of the spring system. The lack of recovery in spring flow following relatively high rainfall totals in 2007, 2010 and 2012 is likely to reflect an overall depressurisation of the sand aquifer, resulting in a reduction in the hydraulic head, generated by multiple years of below average rainfall and reduced storage within the aquifer.

While the specific reason for spring flow decline cannot be determined based on the available information, there is strong evidence to suggest that the reduction in storage, and resultant reduction in hydraulic head, caused by the below average rainfall years of the millennium drought period (2001 to 2009) may be a factor. This is supported by the fact that the flow rate spikes following significant rainfall events, probably due to the immediate recharge to flow created by the infiltration of this water.

On 26 September 2018, the Applicant received a letter from Department of Planning and Environment requesting an independent review by a suitably qualified and experienced expert approved by the Department to undertake monitoring and confirm that the Quarry is complying with the water impact assessment criteria. The Applicant intends to complete this assessment as soon as practicable with an appropriate person approved by DPE.

5.2.2.2 Response to Concerns Raised

The submission makes reference to a lack of responsiveness of the Applicant to concerns raised, dating back to August 2008, with respect to declining spring flows.

Response

The Applicant acknowledges that the owner of "Inverary Park" has raised concerns over spring flow, however, reiterates that there remains little evidence to suggest the Quarry operations (especially during the period of commencement to early 2017 when there was minimal pumping from the production bore) would be impacting on the spring. Both the management of the Applicant and their consultant hydrogeologist have explained this to the owner of "Inverary Park" over this time.

In response to the claims of impact by the owner of "Inverary Park", the Applicant has commissioned LCC to complete and provide two hydrogeological investigations to investigate and assess these claims (July 2017 and August 2018). As discussed in Section 5.2.2.1, the results of these investigations identify that for the following summarised reasons, the Quarry cannot have had the effect on spring flow that has been claimed.

- A lack of hydrogeological connectivity between the production bore and Phil's Spring.

- Minimal pumping from the bore since establishment which could have drawdown groundwater supplying the spring (see **Table 24**).
- A lack of drawdown of the water table surrounding the production bore.

Despite this lack of evidence of impact, and as acknowledged by the owner of "Inverary Park", the Applicant agreed to supply water to the owner of "Inverary Park" in 2017 at no cost to assist with stock watering. Furthermore, and as acknowledged by the submission, a V-Notch weir was installed in early 2018 for ongoing monitoring of spring flow.

It is noted that the owner of "Inverary Park" recently rejected the assessment contained in the most recent hydrogeological investigation (LCC, 2018a – see Section 2.8 and **Appendix 9**) and remains of the opinion that the Quarry operations remain the cause of reduced spring flow..

5.2.2.3 Groundwater Drawdown

The submission also queries statements made that the extraction of water from the production bore has not impacted on the water levels in the production bore or surrounding monitoring bores.

Response

As discussed in LCC (2018a) and Section 2.8, monitoring in bores which surround the production bore does not identify any reduction in standing water levels which would suggest the pumping is depressurising the deeper alluvial aquifer. LCC (2018a) notes that the apparent fluctuations in the water level (piezometric level) in production bore are not unusual for this type of aquifer. The change in water level (below ground) from 57.0m (July 2003) to 61.1m (2018) likely represents fluctuations in aquifer pressure and not necessarily a change in aquifer storage volume. Furthermore, LCC (2018a) notes that the regional geology and tectonic history indicate that the recharge area for the deep, fracture-controlled hard rock aquifer is extensive and not restricted to the local area, i.e. highly unlikely to be significantly impact by localised water extraction.

5.2.2.4 Groundwater Contamination

The owner of "Inverary Park" raises a concern over the potential for groundwater to be contaminated by the use of Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM) as a backfill material and is concerned contaminants such as asbestos could be introduced to the landform resulting in contamination.

Response

As discussed in *Section 2.5.3.2* of the *Environmental Assessment*, the Applicant has approval to import VENM which the *Protection of the Environment Operations Act 1997* (POEO Act) defines as:

"*natural material (such as clay, gravel, sand, soil or rock fines):*

(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and

(b) that does not contain any sulfidic ores or soils or any other waste

and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice."

The Applicant would implement chain of custody requirements which require suppliers of VENM to demonstrate the source of material and meets the definition of VENM as stated above. As stated above, the importation of VENM is an approved activity under MP 07_0155 and no variation to this activity is proposed

Prior to the acceptance of ENM onto the Quarry Site, and as nominated in *Section 5.11.2.3* of the *Environmental Assessment*, the supplier of ENM would have to confirm the sampling and quality requirements of the Resource Recovery Order for Excavated Natural Material Order 2014 (ENM Order 2014) under Part 9, Clause 93 of the POEO (Waste) Reg. That is, confirm the material is naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground:

b) contains at least 98% (by weight) natural material; and

c) does not meet the definition of VENM (as defined in the POEO Act).

ENM applied to land of the Quarry Site would be undertaken in accordance with the Resource Recovery Exemption for Excavated Natural Material 2014 (ENM Exemption 2014) issued under Part 9, Clauses 91 and 92 of the POEO (Waste) Reg.

It is noted that the ENM Order 2014 and ENM Exemption 2014 have been issued by the NSW EPA to reflect the low risk nature of these materials, subject to demonstration by sampling and analysis that the material meets the definition. Acceptance and use of ENM on the Quarry Site would be reported to the DPE and EPA, with the expectation that proof of satisfaction of the ENM Order 2014 and ENM Exemption 2014 will need to be provided on request.

5.2.2.5 Water Use

The owner of "Inverary Park" property raises the concern that the additional production and operation of the Bitumen Pre-coating Plant would increase that volume of water required for the Quarry Site and require an increase in the extraction of groundwater. The submission suggests that the reduction in water truck use nominated in *Section 5.5.3* of the *Environmental Assessment* reflects this increase extraction requirement for these activities.

Response

The water use requirements for the Quarry have been reviewed in response to the submission of the Department of Industry – Water (see Section 3.3.3). This revised assessment of the Quarry water balance, which reviews the various water demands and losses of the proposed modified operations, illustrates that even with conservative figures for water usage for sand washing, hard rock aggregate washing and dust suppression, the annual usage would remain within the capacity of the production bore and surface water harvest.

5.2.3 Air Quality

5.2.3.1 Hard Rock Processing Plant Enclosure

The submission notes that the crushing and screening components of the hard rock processing plant were to be enclosed in accordance with the commitments made in the 2008 *Environmental Assessment* which are attached to MP 07_0155.

Response

The Applicant notes that the proposal to enclose the dust generating components of the hard rock processing plant were with reference to the then proposal to install a fixed crushing plant at the Quarry. Where the timing identifies completion of this commitment as 'during construction', this refers to construction of the fixed plant.

Following approval of MP 07_0155, the Applicant determined that the operation of a mobile crushing arrangement would satisfy production requirements and construction of a fixed crushing plant has therefore not proceeded. Constructing enclosures on mobile plant is not practicable, however, dust suppression through the application of water at key crushing and transfer points would be effective in minimising dust emissions. Furthermore, and as identified on *Figures 5* and *15* to *18* of the *Environmental Assessment*, the Applicant proposes to relocate the mobile crushing plant to the hard rock extraction area, where the face of the extraction area would provide a further shielding effect of dust emissions, in particular under westerly and southwesterly wind conditions (which would blow dust towards the "Inverary Park" property).

5.2.3.2 Dust Deposition Levels

The submission has questioned the accuracy of information presented in the Air Quality Impact Assessment (AQIA) which establishes the background dust deposition levels of the local area. Reference is made to individual monthly dust deposition records which exceed the 4g/m^2/month, in particular a recording of 53g/m^2 for the February 2017 period at DDG1.

The submission claims that dust emissions have been non-compliant with criteria and that self-monitoring by the operator is not adequate to ensure dust emissions from the Quarry are controlled.

The submission also queries the reference to a reduced road watering regime (from three times per day to once) and how this would prevent dust emissions from increasing.

Response

As noted in *Section 4.2.4* of the AQIA, Ramboll Pty Ltd analysed the data supplied by the Applicant from 2013 to 2017 and identified the monitoring point on "The Osiers" property at 5028 Oallen Ford Road (DDG1)[13] as the most appropriate location for the establishment of a background deposited dust level (based on the wind direction profile placing this gauge a position less likely to be affected by Quarry emissions given it is outside of the dominant recorded wind directions [westerly, north-easterly and south easterly]). Anomalous readings such as that for February 2017 are conventionally discounted from data sets as these are likely to be have been a result of ether intentional or accidental deposition from unnatural sources and therefore not indicative of the normal air shed conditions.

[13] Monitoring Point No 2 on EPL 13213

The Applicant acknowledges that record keeping during the initial period of operation reflected the fact that there were often extended periods of inactivity on the Quarry Site before 2017 and there was often no one on site to collect and collate environmental data. Since 2017, however, the Applicant has engaged an Environmental Officer whose responsibility it has been to ensure the collection, collation and exhibition of environmental data. The Multiquip website now provides a comprehensive and accurate record of environmental monitoring requirements.

With respect to the fact that dust deposition levels have exceeded 4g/m^2/month on some occasions, it is important to note that dust deposition results are assessed as a 12-month average against the criteria. This is considerate of the fact that dust deposition levels will naturally fluctuate, regardless of Quarry or other development activities, as a result of climate, e.g. high winds, low rainfall, or land use activities, e.g. land cultivation, stock grazing. It is not unexpected that there will be days (and months) of higher dust emissions, however, the Applicant is committed to minimising emission levels on these days by implementation of the operational controls and safeguards nominated in *Section 5.5.3* of *Environmental Assessment*. It is important to note that in the 12 months from July 2017, monitoring confirms the 12-month average deposition levels have not exceeded 2g/m^2/month (see **Table 25**).

Table 25
Deposited Dust Monitoring (July 2017 – June 2018)

Monitoring Point	Samples	Max	Min	Average
EPL 1: Inverary Park (550 Inverary Road)	10	2.2	0.3	**0.8**
EPL 2: The Osiers (5028 Oallen Ford Road)	11	2.4	0.2	**1.1**
EPL 3: Lochmoor Lodge (5046 Oallen Ford Road)	11	1.8	0.1	**0.6**
EPL 4: 5199 Oallen Ford Road	11	1.2	0.1	**0.6**
Source: Multiquip Quarries Pty Ltd (http://mqquarry.com.au/media/)				

The Applicant will continue to review dust suppression activities in order to minimise occurrence when dust emissions are visible from neighbouring properties.

With reference to the submission's highlighting of the modified commitment with respect to road watering, the change from three times per day to once per day has been made simply to reflect the fact that a single watering may often be all that is required to suppress dust, e.g. on cold, damp winter days when there is limited operation on Quarry roads. The Applicant would undertake road watering at a far greater frequency on days when dust emissions are more likely, e.g. hot windy days when there are increased movements on Quarry roads.

With respect to the broken deposited dust gauge, there could be many reasons for this to have occurred. By elevating the gauges above ground level, the potential for accidental damage by livestock or passer-by's is reduced but cannot be completely eliminated. It is noted that as the gauges are manually replaced every month, this damage will only affect one month's results.

Finally, the Applicant is committed to reviewing and updating the Air Quality Management Plan for the Quarry within 3 months of determination of the modification application to ensure that all reasonable and feasible management measures and procedures are included in the air quality management system of the Quarry.

5.2.3.3 Additional Dust Sources

The submission is concerned that the Bitumen Pre-coating Plant, increase in extraction area, placement of ENM within the completed extraction area and increase in truck movements would become another source of dust and impact negatively on neighbouring landowner health.

Response

The AQIA considered all the quoted operations, with conservative estimates of the emissions likely as a result of ground disturbance, equipment movement, wind erosion from stockpile, and handling of the excavated materials. The modelling confirms the dust levels likely to be received at surrounding receivers (from Quarry operations) is low and well within the nominated criteria.

In noting the predicted compliance with criteria, the following points of clarification are noted.

- As the aggregates to be coated with bitumen are washed to remove excess dust before being transferred to stockpile, the process is not particularly dusty. Furthermore, the overall amount of pre-coating proposed is very minor when compared to the other principal sources of dust emissions.
- The backfilling of the extraction area was already approved by MP 07_0155. The proposal modification simply seeks to allow for ENM, as well as VENM, to be used as backfill. Ultimately, the reinstatement of a landform more closely replicating the surrounding landforms would allow for greater sustainability of groundcover and reduced erosion (and dust emissions) of the final landform.
- The proposed modification does not propose any increase in the total number of truck movements each month, with the additional production possible due to an increase in the carrying capacity of each truck. The Applicant may consider the sealing of internal roads in the future, however, the results of the AQIA illustrate that this is not required to comply with criteria.

5.2.4 Quarry Noise

5.2.4.1 Hours of Operations and Existing Commitments

The owner of the "Inverary Park" property has made reference to several aspects of the existing Quarry which they believe is outside the conditions of MP 07_0155 or where commitments have not been fulfilled. Specific reference is made to hours of operations, where it is claimed activities have commenced prior to 7:00am, operation of the hard rock processing plant without the nominated enclosures to minimise noise (and dust), and lack of adequate noise monitoring.

Response

The Applicant recognises that the currently approved hours of operation prohibit any Quarry activities, apart from low noise maintenance activities, between 6:00pm and 7:00am Monday to Friday, and outside the hours of 8:00am to 1:00pm on Saturday. It is understood that in the past, individual trucks may have started arriving before 7:00am (in preparation for despatch at 7:00am), however, the Applicant does not have any record of extraction or processing operations commencing before 7:00am.

The Applicant can confirm that all truck drivers are currently requested not to arrive before 7:00am, however those drivers that currently arrive before 7:00am are instructed to park up without the engine running until 7:00am. All drivers are informed or reminded of the Multiquip Driver Code of Conduct and penalties which may apply for infringement. The Applicant can state with certainty that commencement of any activities on the Quarry Site do not occur before 7:00am in accordance with the current development consent.

The lack of enclosures on the hard rock processing plant was discussed in Section 5.2.3.1 and as noted in this section, the enclosures were proposed for a fixed crushing plant. As hard rock processing will continue to be undertaken using a mobile crushing plant, the use of these mitigation measures will be suspended until the mobile plant can be relocated to within the extraction area.

Noise monitoring is considered in Section 5.2.4.3.

5.2.4.2 Extended Hours Noise Levels

The owner of the "Inverary Park" property has raised concerns over noise levels within the extended hours of operation. Reference is made to inversion conditions which could affect noise levels received during early morning operations.

Response

It is important to note that the only on-site activities proposed (under Modification 3) before 7:00am on the Quarry Site would be the loading and despatch of trucks. As noted in Section 2.11.2, a revised Noise Impact Assessment was prepared to address a number of queries of the EPA. As a result, and as identified in Section 3.1.4.2, all activities to be undertaken before 7:00am have now been modelled under F-class temperature inversions. As identified in *Table 12* to *Table 14* of the NIA, compliance with the existing noise criteria can be achieved subject to operation in accordance with the modelled scenarios.

The above notwithstanding, the Applicant has agreed to implement a Pollution Reduction Program (PRP) to assess noise emissions and provide for modifications to plant and operational activities, as required. It is likely this will include reference to inversion conditions and Quarry operations during such events.

In addition, the site-based Environmental Officer has been trained and has access to noise monitoring equipment. During periods when Quarry management suspect noise levels may be elevated, e.g. winter mornings, the Environmental Officer will be able to check noise levels to confirm these are at or below the noise criteria nominated within PA 07_0155 and EPL 13213. Protocols and procedures for this site-based monitoring will be included in an updated version of the Noise Management Plan.

5.2.4.3 Monitoring

The submission makes a number of statements regarding the lack of adequate noise monitoring since operations commenced at the Quarry. Specifically, the submission notes a lack of monitoring during the early years of operations and a lack of consideration of other properties owned by the owners of "Inverary Park".

Response

During the initial years following approval of the Quarry, noise monitoring was not undertaken as there was insufficient activity being undertaken on the Quarry Site to justify this. The Applicant is now committed to noise monitoring on a quarterly basis until early 2019, or as nominated in the updated Noise Management Plan, with the site-based Environmental Officer trained such that additional monitoring can be undertaken immediately in response to a complaint or to satisfy Quarry management that noise levels are being minimised.

It was brought to the attention of the site-based Environmental Officer after the April 2018 monitoring that PA 07_0155 references noise criteria at the residences of R3 and R7. Noise monitoring has traditionally been completed at the property boundary and noise levels at the residence calculated based on the intervening distance between the boundary and the residence. Since June 2018, however, where access to the property is available, noise monitoring has been undertaken within 30m of the residence, wherever access has been obtained.

The submission references the fact that noise monitoring is not undertaken on Property 37 (adjoining "Inverary Park" but which does not include a residence) and Property 13, which includes a residence not identified on figures of the *Environmental Assessment*. The omission of the residence on Property 13 is acknowledged and the author of the *Environmental Assessment* apologises for this oversight. This notwithstanding, the monitoring of alternate locations as part of the quarterly monitoring program includes locations closer to these locations within the same direction from the Quarry. As a result, compliance at these closer locations will infer compliance with noise criteria on Properties 13 and 37.

5.2.4.4 Existing Noise Levels

The owner of "Inverary Park" provides copies of the output from noise monitoring undertaken by the owners on 10 October 2016 and 22 January 2018.

Response

It is difficult to comment on the monitoring output presented as there is no information on when the equipment was calibrated (or by whom), the qualifications of the person who completed the analysis or how the analysis was undertaken.

The above is not to suggest that Quarry operations were not audible during these periods, or that the Quarry may have been operating with noise levels exceeding criteria, only that it is beyond the ability of this RTS to comment. It can be stated that the results of the most recent noise monitoring indicate that except when inversion conditions extended into the daytime period, compliance with noise criteria was achieved.

With respect to the elevated noise levels which occur under temperature inversions, it is noted that the proposed noise management and mitigation measures nominated in Section 2.11.3 should further reduce noise emissions from the Quarry. The PRP to be implemented in particular will assess noise emissions and provide for additional noise mitigation measures or operational controls to prevent non-compliant noise levels being received at neighbouring properties.

5.2.4.5 Complaints Management

The owners of "Inverary Park" claim the representation of complaints management in the *Environmental Assessment* and NIA is misleading.

Response

Information on complaints and complaints management presented in the *Environmental Assessment* and NIA was provided to the author of the *Environmental Assessment* by the Applicant. It has been established that this did not include all queries or calls made to the Applicant over the years which may have been addressed directly at the time and not recorded as complaints. The email between the owner of the "Inverary Park" property and the Applicant's Company Secretary which is presented on page 7 of the Quarry Noise attachment (Attachment 3) of the submission, provides a good example of this. The email identifies the owner of the "Inveraray Park" property raising a concern over a noisy piece of equipment at 12:16pm on 24 August 2017, and the Applicant responding to this issue at 2:44pm that same day.

Since the beginning of 2018, the Applicant's site-based Environmental Officer has maintained a more thorough complaints log which includes the details of the complainant, source of the complaint and action(s) taken. The information contained within the updated complaints log, as relevant to noise complaints, is included in the NIA (see **Appendix 14**). It is noted that since 15 March 2018, the owners of "Inverary Park" have made 24 noise-related complaints, the majority of which reference noise levels recorded by the owner's noise monitoring equipment. As noted in Section 5.2.4.4 above, comment on the noise levels nominated by the complainant is difficult, however, it is noted that when investigated by Quarry personnel, the noise from Quarry-related activities was audible but considered to be non-intrusive.

The site-based Environmental Officer has been trained in the operation of a noise monitor in order to specifically investigate any future claims of non-compliant noise levels and to provide guidance to operators on site with respect to noise generation and the need for controls.

5.2.4.6 Additional Noise Sources

Similar to their submission on groundwater and dust impacts, the owners of "Inverary Park" identify the additional noise sources or modified operations as having the potential to increase noise levels further on their property.

Response

The 2017 NIA considered all the additional or modified operations, with conservative estimates of the emissions likely as a result of the extraction area extension, increased production, pre-coat plant operations and landform backfill. The modelling confirms that noise levels likely to be received at surrounding receivers (from Quarry-related activities) can comply with the nominated criteria subject to operation in accordance with the commitments and controls included in the *Environmental Assessment* and 2017 NIA.

5.2.5 Visual Impact

The owners of "Inverary Park" claim the impact on the Quarry on their visual amenity will be much greater than suggested in the *Environmental Assessment* representation of complaints management in the *Environmental Assessment* and NIA is misleading.

Response

The two photos contained within the *Environmental Assessment* provide an accurate illustration of the views of the Quarry from the "Inverary Park" property. The residence on the property (*Plate 5* of the *Environmental Assessment*) is shielded by the established tree screens which exist around the house, sheds and boundary of Lot 2 DP997166 and Lot 46 DP1199410. The views illustrated by *Plate 6* (of the *Environmental Assessment*) are indicative of current views (from a distance of approximately 1.3km).

It is acknowledged that there may be other locations on the "Inverary Park" property with more direct views of the Quarry's operations, however, these are associated with the grazing paddocks on the property. With reference to the photos included in the submission, there is no reference to the focal length used and it is suspected that this is greater than 50mm (resulting in a 'zoomed in' image). The closest vantage point towards the Quarry (on the property boundary) is approximately 500m from the basalt extraction area.

The above withstanding, and as discussed in *Section 5.10.4* of the *Environmental Assessment*, as the extraction area is developed, the hard rock processing plant moved to the floor of the extraction area, and the visual amenity bund constructed and vegetated, the operations will be shielded or obscured from most fields of view (see *Figure 24* of the *Environmental Assessment*).

Views of the more elevated components of the Quarry Site will be visible from the paddocks of "Inverary Park" (see **Figure 10**), however, it is argued that the vegetated bund (which should achieve a vegetated elevation of between 645m and 650m AHD within one to two years of planting) will provide for visual screening of operations from much of the southern sections of the property.

5.2.6 Land Devaluation

The owners of "Inverary Park" are concerned over the potential devaluation of their land as a result of the Quarry and believe that the Applicant should be required to purchase the property.

Response

The premise behind the reduced property value is based on the claims made by the owners in relation to increased groundwater, dust, noise and visual amenity impacts. As discussed in the preceding sections, while some impact is acknowledged, it is:

- has been assessed to be compliant with the relevant environmental criteria; and/or
- overstated in the submission.

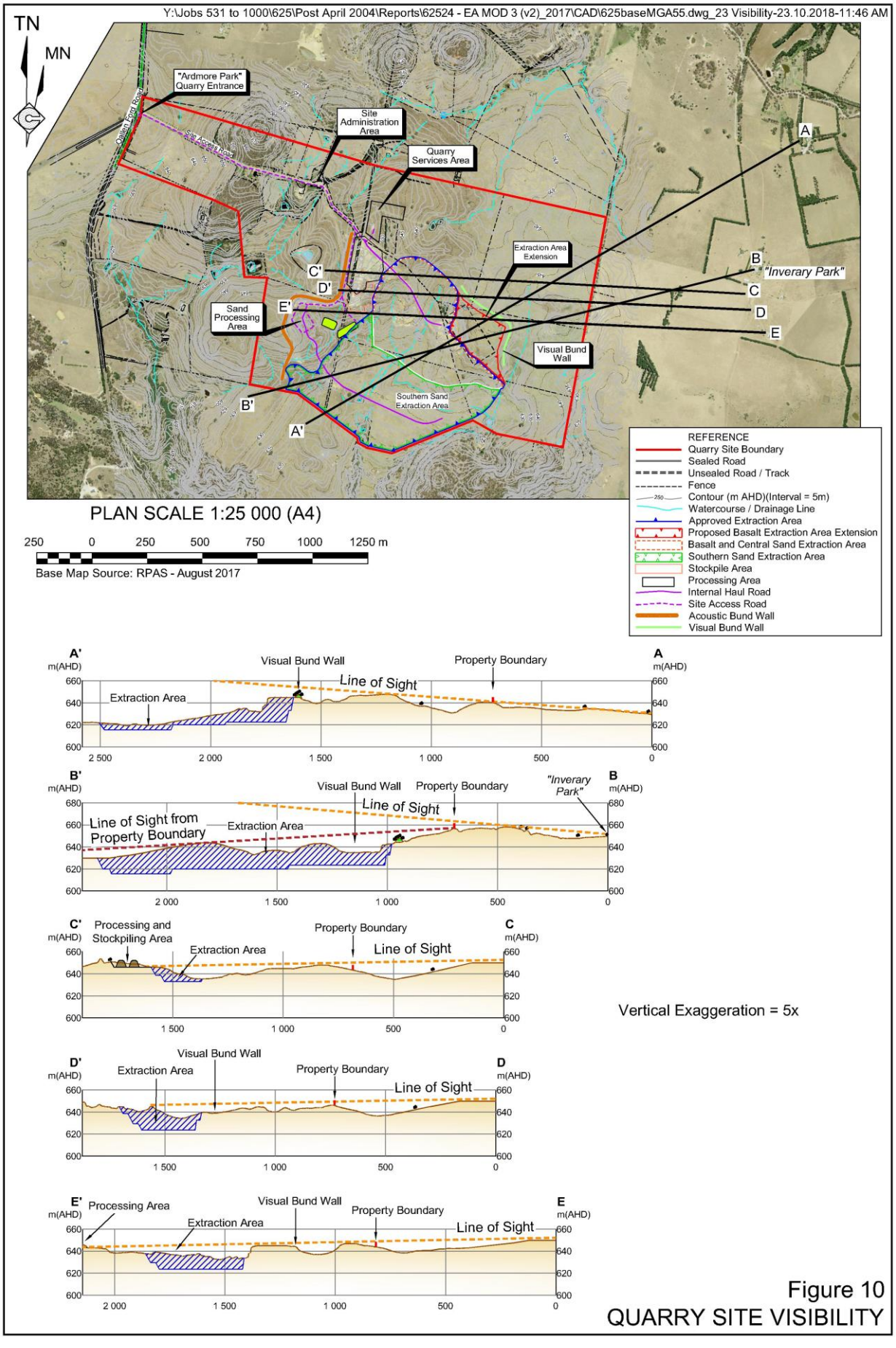

Figure 10
QUARRY SITE VISIBILITY

In responding to concerns in relation to impacts on land values associated with developments such as the Proposed Modification, RWC typically notes that many factors influence such valuations, including agricultural productivity, improvements, etc. Activities undertaken on neighbouring properties are typically not substantial considerations. Indeed, in many cases, an alternate argument can be made that mining and quarrying operations actually increase land valuations through improved economic activity and infrastructure such as roads.

With respect to impacts on groundwater, there is no compelling evidence to support the owner's claim that the Quarry has caused a reduction in spring flow.

With respect to dust and noise impacts, it has been the assessment of the AQIA and revised NIA that compliance with criteria can be achieved on the "Inverary Park" property.

The stated impacts on visual amenity reference the current exposure of the Quarry operations and, in the opinion of the RTS, overstate the impacts (see also **Figure 10**).

With respect to implications of the Quarry's operations upon land values, it is noted that the value of rural land such as "Inverary Park" is invariably linked to agricultural production. Given, the Quarry is predicted not to adversely affect the factors influencing agricultural production, the value of the property is unlikely to be adversely impacted by the Quarry. Finally, it is noted that the application is for a modification to the existing approved Quarry. As a result, any potential purchaser of "Inverary Park" would be aware of the current operation and the Proposed Modification would likely have a negligible influence on any reasonable assessment of land value.

It is also noted that on the basis of the *Environmental Assessment* and this RTS, there is no basis for acquisition requirements to be commenced.

5.3 OTHER SUBMISSIONS

5.3.1 Introduction

As noted in Section 5.1, a review of the 49 public submissions identified 65 specific issues within 21 broader categories for review. Sections 5.3.2 to 5.3.23 consider each of the 65 issues. It is noted that the bracketed references of each sub-heading reference the specific issues identified in the issues matrix of **Appendix 1**.

5.3.2 Errors in the Environmental Assessment (SR, RL)

Two submissions identified errors in the *Environmental Assessment* related to the incorrect labelling of local roads and non-inclusion of a sensitive receiver. Although neither is considered to materially affect the assessment, these matters are acknowledged and addressed below.

Incorrect Labelling of Local Roads

Comment

[Referring to Plates 1 and 2] This is not Oallen Ford Road. This is Jerrara Road. This is the entrance straight off the Hume Highway which was widened and upgraded as part of the overpass a few years ago.

245882 Submission

Response

The error is acknowledged. For the benefit of this RTS, **Plates 1** to **4** have been reproduced to illustrate the road widening works on Oallen Ford and Jerrara Roads (see Section 4.1.2).

Non-Inclusion of All Surrounding Residences

Comment

Further to these, we own property 5224 Oallen Ford Road, Bungonia…This residence is only 445 metres NE from the closest point of the Ardmore Park Boundary. This residence is currently rented and the dwelling has been there since 1992. In the Noise Impact Assessment…It has not been listed as a Sensitive Receptor even though houses further away such as Residences 1, 2 and 8 have. This property has been totally ignored for any noise monitoring.

246970 Submission

Response

Not identifying the residence of 5224 Oallen Ford Road is regrettable and appears to have been an oversight of previous *Environmental Assessments* of the Ardmore Park Quarry. **Figure 6** provides an updated plan of local land ownership and residential receivers which identifies Residence 5224 to the northwest of the Quarry operations. A review of the proximity of this residence to various activities of the Quarry Site has been completed with the residence located:

- 900m from the Site Access Road;
- 1 000m from the Site Administration Area;
- 1 200m from the Quarry Services Area;
- 1 450m from the northern most stockpile area; and
- 1 500m from the northern perimeter of the extraction area.

While the omission of this receiver is regrettable, it is noted that it is located on the same alignment from emission sources as Residence R9 (see **Figure 6**). As Residence R9 is located closer to these emission sources, and compliance with air and noise criteria has been predicted at this residence, compliance at the residence of 5224 Oallen Ford Road would also be achieved.

5.3.3 Increased Heavy Vehicle Traffic (TA, TV, ID, TR, ES, TM)

5.3.3.1 Overview

The matter of increased truck movements on the local roads between the Quarry Site and Hume Highway was raised by 22 of the 49 submissions. The specific issues of concern have been categorised as follows and addressed in the following sub-sections.

- The adequacy of the traffic assessment, with specific reference to the local traffic data relied upon, was questioned by three submissions.
- The ability of local residents to properly assess the proposed increase in traffic given roadworks were incomplete at the time of application and therefore the approved 88 truck movements per day has yet to be experienced was raised in one submission.
- The additional 'visual pollution' associated with increased heavy vehicle traffic was identified as a matter of concern in three submissions.
- The potential that the Quarry will require significant off-site servicing of mobile equipment which will further increase the number of heavy vehicle movements on local roads was raised in one submission.
- The ability of the Applicant to monitor truck movements and comply with the proposed limits on movements was questioned in two submissions.
- The impact of the increased truck movements on local lifestyle, amenity and property values was raised by 20 submissions. The impact of the proposed modification on local lifestyle is a common theme throughout the submissions and is addressed more generally in Sections 2.13, which presents a SSIA completed to review social impacts of the proposed modification, and Section 5.3.20. Section 5.3.3.7 below considers the factors associated with truck movements on local lifestyle, amenity and property values.

In addressing the comments and concerns raised in the submissions which reference increased heavy vehicle (truck) movements, it is important to note that the proposed modification has been designed to not increase the total number of heavy vehicle traffic movements over the period of a month and year. Section 2.3 provides further detail (to the *Environmental Assessment*) to illustrate how truck movements would be scheduled to account for average, high demand and maximum transport days. That is, while there would be some days when the number of trucks on the product delivery route is greater than the currently approved maximum of 88, there would be other days when the number of trucks on the roads is much less than 88 to ensure the monthly average remain at or below 88.

5.3.3.2 Adequacy of Traffic Assessment Without Recent Traffic Counts (TR/ZA)

Representative Comments

The traffic management study conducted was, we believe, inadequate. It was conducted on a single day during the summer months over the Christmas period when many children had already completed their school and extra-curricular activities for the year thus potentially

reducing the traffic movements. A more thorough traffic management study (including daily weather conditions) over a longer duration through various months of the year would yield a more comprehensive and accurate representation of the traffic movements.

246390 Submission

There has been no formal assessment of the impact/increase of road traffic since 2006 – a lot changes in 12 years and Multiquip has not formally assessed how much traffic has increased – let alone adding 124 truck movements per day of a 50 tonne truck which are 25 metres long.

245882 Submission

No count of road usage on Jerrara Road has been made by the Proponents in recent years. Visual evidence from locals states that since completion of the concrete bridge over the Shoalhaven, vehicle density – particularly of heavy vehicles – has markedly increased. It would seem irresponsible to approve increased density of quarry trucks during certain hours without either the roadwork being completed, bridges made 2-way, or any knowledge of the traffic now carried on Jerrara Road.

246982 Submission

Response

Classified traffic counts on Jerrara Road were not completed by the Applicant in 2017 due to the ongoing road upgrade works which would have artificially skewed the calculation of background traffic numbers. As a result, the levels of existing traffic were initially derived from traffic counts undertaken on Jerrara Road and Oallen Ford Road in 2006 and 2013. As discussed in *Section 5.3.2.3* of the *Environmental Assessment*, traffic data obtained from the 2013 Oallen Ford Road traffic count was used to derive a 2013 traffic volume for Jerrara Road by applying the same proportional increase (20%). This was considered a reasonable approach given the factors influencing traffic growth on Oallen Ford Road (residential growth, tourist traffic) would be consistent between both roads.

In order to provide an estimate for 2017 background traffic, an annual increase of 2.5% was applied (representative of the growth between 2006 and 2013 on Oallen Ford Road). While it is noted that the 2013 Oallen Ford Road traffic count data was incorrectly interpreted in the *Environmental Assessment*, suggesting a higher proportion of heavy vehicles on this road (see also Section 2.2), the difference in Annual Average Daily Traffic (AADT) has subsequently been reviewed and represents less than 40 vehicles per day. As such, the background traffic calculated for Oallen Ford Road is considered an accurate representation of background traffic on which to complete a traffic impact assessment. This corrected level of traffic has now been considered as part of a revised NVIA (refer to Section 2.11.2 and **Appendix 14**), road pavement life analysis (refer to Section 2.5 and **Appendix 3**) and supplementary route suitability assessments (refer to Section 2.6 and **Appendices 5** and **6**).

With respect to the background traffic used for assessment of impacts on Jerrara Road, the proportional increase in traffic noted on Oallen Ford Road was used to derive 2013 traffic levels for Jerrara Road. The traffic count conducted on 14 December 2017 (which fell within the NSW school term) was undertaken to confirm that the derived Jerrara Road traffic volumes were representative of traffic levels on this road. The comparison between the derived 2013 and observed 2017 Jerrara Road traffic (306[14] vs 358) suggests the observed 2017 traffic was representative and that an annual 2.5% growth in traffic was a reasonable assumption.

[14] Which would be equivalent to an AADT of 338 with annual growth of 2.5% applied.

The claims of the submissions that there has been an increase in traffic volumes on local roads since traffic counts were completed and road works such as the completion of the concrete bridge over the Shoalhaven River are acknowledged. However, as discussed in the paragraphs above, any such increases are considered to have been appropriately captured in the traffic volume assessment of the *Environmental Assessment*. The data on local traffic collected supports the assessment that these are low traffic volume roads with heavy vehicle traffic representing between 10% and 15% of total traffic.

5.3.3.3 Current Approved Traffic Levels Yet To Be Realised (ID)

Representative Comment

The proposal listed a completion date for March 2018 for road work activities on Jerrara Road. The roadworks are currently incomplete and unlikely to be completed by March 2018. This in turn means that Multiquip have been, up until this time, and will continue to be, up until the completion of the road works, unable to operate at full approval capacity under the current licencing arrangement. It is therefore impossible for local residents to make informed decisions about requested future increases without yet experiencing or understanding the impact that the agreed operations will have on the current quiet amenity and travel on local roads.

246390 Submission

Response

As of August 2018, the required road works on Oallen Ford, Mountain Ash and Jerrara Roads were completed, with the exception of minor rehabilitation works as agreed with Council. As a result, transport levels are expected to steadily increase towards the currently approved maximum of 88 movement per day. As discussed in Section 2.7, the roadworks have been the subject of two RSAs which confirm the lane and shoulder widths, signage, pavement markings and protection of roadside hazards to be adequate and consistent with a rural road environment. The RSA confirmed these roads as able to function effectively and safely for the current intended purpose and combination of vehicle types.

In proposing the modification to transport operations, the Applicant was conscious of the concern raised in the submission and has structured the proposed changes to minimise how this could impact on local road users and adjoining landowners.

- In proposing an increase in production, the Applicant has committed to not increasing the total number of truck movements generated by the Quarry when averaged over a month. This would be achieved by using high mass limit trucks which have been specifically assessed and approved for use on the product delivery route.
- In proposing an increase to the maximum number of daily truck movements, the Applicant has nominated operational controls which will naturally limit how often this maximum daily traffic volume occurs. By restricting itself to a monthly average of 88 truck movements per day, truck utilisation and efficiency would be affected if there were to be too great a fluctuation in traffic movements over a month. Therefore, in order to maximise equipment utilisation, the Applicant will aim to keep traffic levels as consistent as possible and as close to 88 truck movements per day as possible. The effect on truck utilisation is illustrated in **Table 1** which highlights the corresponding reduction in truck movements to high production and maximum transport days.

- In proposing extended hours of operation, the Applicant considered but ultimately rejected nominating 24 hour transport operations. As discussed in *Section 2.8.2* of the *Environmental Assessment*, the decision to restrict the proposed extension of transport hours was made after consideration of community concerns in relation to heavy vehicle transport on local roads and potential amenity impacts.
- In proposing the earlier commencement of transport, the Applicant has considered the scheduling to limit impacts on local traffic throughout the day. As illustrated in **Table 1**, by commencing transport operations at 5:00am, the number of truck movements between the hours of 7:00am and 10:00am can be significantly reduced (even on high production and maximum transport days).
- In proposing the later conclusion of transport, i.e. by 10:00pm, the Applicant understands how this could impact on the amenity of adjoining landowners and has prepared a schedule which limits these movements to only that required to improve the overall efficiency of transport operations, e.g. return of trucks to the Quarry Site for pre-loading ahead of the next days operations or despatch of several loads to reduce the pressure of operations the following day.

In further acknowledgement that maximum traffic levels have yet to be achieved from the Quarry, and following review of the various public and government agency submissions, additional assessment has been completed to demonstrate that the level of transport proposed can be accommodated by the local road network.

- As discussed in Section 2.5, the influence of Quarry transport on road condition and remaining life is minimal and would be compensated by continued contributions of the Applicant to Goulburn Mulwaree Council for the maintenance of these roads.
- As discussed in Section 2.6.1, the bridges and culverts of the product delivery route have been confirmed as suitable for the proposed vehicles to be used.
- As discussed in Section 2.6.2, the performance of the intersections of the product delivery route will remain unaffected.
- As discussed in Section 2.6.3, the intersections of the product delivery route provide adequate swept paths for PBS vehicles.
- As discussed in Section 2.7.2, the Existing Road RSA of TUP (2018) (**Appendix 8**) assessed the existing road environment is considered suitable for use by the proposed longer vehicle which would not present an increased safety risk.

Considering the commitment of the Applicant to manage the scheduling of truck movements over the extended hours of operation to limit and in some cases reduce impacts, along with the supplementary transport-related assessments, sufficient information is available to support the assessment that the proposed modifications to transport operations could be undertaken without further adverse impact on local roads or road user.

5.3.3.4 Visual Impacts of Trucks (TV)

Representative Comments

Then there is the visual pollution that we will have to endure as much larger trucks than already approved run past our front door constantly. Our enjoyment of our property will therefore be greatly reduced.

242467 Submission

Any increase in truck movements will contribute to visual impact on us. This will create more activity in which we have to endure because they have not screened it from our view.

246970 Submission

Response

Following from the response provided in Section 5.3.4.3, the Applicant has reviewed and provided additional information on transport scheduling (refer to Section 2.3 and **Table 1**) to address concerns over the visual impacts resultant from the Quarry's transport operations. In summary, by commencing transport operations earlier and extending later, the number of truck movements between the hours of 7:00am and 6:00pm (and in particular 7:00am and 10:00am) would be reduced. Furthermore, in reviewing the transport operations schedule and acknowledging the period of the evening after 6:00pm is a time when the natural environment can be best enjoyed by those working on their property or elsewhere, the Applicant would limit truck movements after 6:00pm to that required to improve the overall efficiency of transport operations.

It is also noted that the proposed PBS vehicles, while representing a longer vehicle than has previously been operated, represent a purpose built and modern fleet of vehicles. When viewed from vantage points adjoining the road, it is considered that little difference between these and previously operated trucks (in terms of dimensions) would be observable. Furthermore, the PBS vehicles will incorporate the best modern standards in safety and environmental controls so as to minimise visual intrusion and impacts on local amenity.

5.3.3.5 Traffic Impacts of Oversize Vehicle Transport (ES)

Representative Comment

Additional waste management concerns include the servicing of mobile equipment offsite. This means that oversize floats will also be required to travel regularly on the transport route to access offsite servicing facilities. There is no indication on the timing of these activities or restrictions noted to prevent an impact on the local traffic.

246390 Submission

Response

The movement of oversize machinery or equipment, either to or from the Quarry Site, would occur from time to time but would be a rare event. The movement of oversize vehicles would only be undertaken once the relevant oversize load permits are obtained. This is consistent with current practices.

5.3.3.6 Monitoring of Truck Movements to Ensure Compliance (TM)

Representative Comments

The approved operation has already been in breach of its allowed truck movements and small fines have been given that do not discourage future breaches. No advice has been provided on how movements will be monitored to ensure further breaches do not occur? Will part of their operating license include higher fines for breaches?

246719 Submission

A statement noting that restrictions will be placed on truck movements outside the hours of 7am to 6pm seems to be there to appease the community and does not provide any substance on how it will be enforced or managed. This is in stark contradiction to the estimated movements of 10 trucks per hour outside of the 7am to 6pm window. If there were indeed 10 trucks per hour during these extended windows this would equate to a majority of the movements per day occurring during these times. This doesn't indicate a managed approach on Multiquip's behalf.

246390 Submission

Response

The Applicant has installed a weighbridge on the Quarry Site over which all exiting trucks must pass. Each truck movement would be recorded and entered onto a database which will be regularly reviewed to ensure the monthly truck movement maximum is not exceeded.

With respect to the scheduling and truck movements, the Applicant has reviewed and provided indicative schedules under average, high production and maximum day transport operations. These schedules (presented in **Table 1**) illustrate that the majority of Quarry transport would still be undertaken between the hours of 7:00am and 6:00pm, with the extended hours used to increase transport efficiency of supply to Sydney markets and reduce pressure (and therefore truck movements) during the 7:00am to 10:00am period.

5.3.3.7 Impacts on Local Amenity and Lifestyle (TA)

Review and assessment of impacts on local amenity and lifestyle, considering the proposed modification (and Quarry operations) in their totality, is included in Section 5.3.20. The following concentrates on the impacts on amenity and lifestyle related to transport operations as nominated specifically in the public submissions.

Representative Comments

We are a community that we want tourists to come and visit, people to visit our national park, be interested in living in an area that is tranquil and peaceful. This is what we want in the community as this is what gives us satisfaction – not trucks driving down our local roads.

Submission No 245882

The nearly 50% increase in truck movements on any given day will have serious impacts on the local community given that trucks will be by far the largest users of the public roads.

Submission No 246719

…we moved onto our farm for the quiet life of living off the land to raise our children amongst farm animals and the beautiful wildlife of the Bungonia area. We didn't buy our farm so that we could listen toe 124 trucks going past our property daily. Lifestyle farm not truck haul route.

Submission No 247248

Response

In reviewing the impacts on local amenity and lifestyle associated with the proposed modification, it is important to note that a level of impact has already been approved by virtue of the September 2009 determination and approval of PA 07_0155 along with subsequent modification in October 2010 and December 2013. Assessment of impacts on lifestyle and amenity are therefore focused on what additional impacts would occur and whether these, on top of those already felt, are acceptable.

The Applicant has proposed the changes to transport operations to improve the overall efficiency of these, especially as related to supply of the Sydney construction materials markets. As discussed in the *Environmental Assessment*, the Applicant is aware of the concerns held by neighbouring landowners, residents of Bungonia and properties which adjoin the product delivery route as to how this may impact on local amenity and their lifestyle. As is identified in the Supplementary Social Impact Assessment (SSIA) completed following the exhibition of the *Environmental Assessment* (see Section 2.13), the local community places great value in the rural and village lifestyle offered by the local setting with factors such as 'peace and quiet', a clean environment. natural beauty, biodiversity and heritage nominated as key values.

In acknowledgement of the social values noted, in proposing changes to transport operations the Applicant have attempted to do so in a way which would limit any additional impacts on factors affecting lifestyle and amenity. These are discussed below.

- Daily Truck Movements.

  If approved, and should production continue to increase to the proposed maximum level, there would be days when more than 88 truck movements would be generated by the Quarry. Over the period of a month, however, the Applicant has committed to an average of no greater than 88 truck movements per day, i.e. as is currently approved.

  As discussed in Section 5.2.4.3, the Applicant will aim to reduce significant fluctuations in truck movements each day to maximise the utilisation and efficient of their truck fleet (which reduces transport costs). As a result, transport scheduling is likely to approximate the average day scheduling presented in **Table 1**. As a result, days on which the local community is subject to significantly higher numbers of trucks (up to 124 movements per day) would be limited and the primary change in impacts (on most days) would be to the distribution of truck movements throughout the morning, afternoon and evening.

- Early Commencement of Transport.

  Early commencement of product deliveries has an obvious operational benefit to the Applicant in allowing quarry products to be supplied to the Sydney construction market prior to Sydney metropolitan peak traffic periods and for or soon after commencement of daytime construction activities (from 7:00am).

By completing between 12 and 20 truck movements (average to maximum day transport) prior to 7:00am, the number of truck movements from 7:00am, typically when local residents would be waking and commencing preparations for their day, would be reduced (from an average of 42 to 24 between the hours of 7:00am to 10:00am).

While noting that community members typically awake before 7:00am would notice a change to operations, the proposed modification represents a reduction in impacts on local amenity from the hours of 7:00am onwards.

- Evening Transport Operations.

  Extended transport operations would benefit the Applicant by allowing trucks to return to the Quarry Site for pre-loading ahead or despatch of limited loads to reduce the pressure of operations the following day.

  These extended hours of operation would also allow for the hourly frequency of truck movements to be reduced (on average). It is acknowledged that these movements would be undertaken during a period when local residents are likely to be enjoy the peace and quiet offered by the local setting and therefore represent an additional impact. Noting this, and as discussed in previous responses, the number of truck movements would be restricted to that required to complete any daily quota or optimise the efficiency of the following days transport operations.

  It is important to note that the vehicle movement numbers presented in the indicative schedules of **Table 1** are very low. Based on the indicative scheduling of **Table 1**, an average of six trucks would travel on local roads between 6:00pm and 10:00pm, increasing to 10 under maximum day transport operations. While noting that the volume of heavy vehicle traffic measured on Oallen Ford and Jerrara Roads between 6:00pm and 10:00pm was limited (three), use of these roads by heavy vehicles is a feature and the proposed increase (on average) remains modest.

- Traffic Noise.

  The approved Quarry operations already allows for an increase in road traffic noise and residential receivers adjoining the product delivery route. The proposed modification would not result in any significant change to this between the hours of 7:00am and 6:00pm.

  During the extended hours of operation, these receivers would be exposed to additional road traffic noise, however, these increases are considered justified on the basis of the following.

  – Truck movements before 7:00am have been assessed by VMS (2018) as unlikely to awaken residents from sleep. Therefore, for the majority of residents, road traffic noise prior to 7:00am is unlikely to significantly influence local amenity.

  – The subsequent reduction in truck movements between 7:00am and 10:00am would result in some reduction in road noise during this period, typically when many residents would be waking up and preparing for the day, i.e. a period when residents are most likely to be affected by noise.

– The Applicant has illustrated how it would attempt to minimise truck movements, and therefore road noise, after 6:00pm. Given heavy vehicle movements are a feature of local roads during the evening and night, the small increase in road noise is considered reasonable.

- Interaction with Local Commuters and Tourists.

  Trucks have always used Oallen Ford and Jerrara Roads. Prior to the road upgrade works completed by the Applicant, these roads were of reduced width and without the significant traffic safety barriers now in place. It is considered that the local road environment is now safer with these road upgrades and in time, as local commuters become familiar with the operation of heavy vehicles on these roads, any perceived negative impact on local amenity will be negated by the improved quality of road. This change in perception would be partially dependent on driver behaviour, however, as a significant transport operator in NSW, the Applicant has the internal experience and administrative structures to ensure appropriate driver behaviour is enforced.

  With respect to visitor or tourist traffic, the improvements in local road conditions would be positive. It is also important to consider that many regional tourist destinations are impacted by local quarry or mine traffic, e.g. Jenolan Caves, Hunter Valley wineries, Blue Mountains National Park. Ultimately, it is the significance of the destination which influences the choice of visitors.

  As is discussed in Section 2.12, the Applicant is committed to establishing a VPA with Goulburn Mulwaree Council which includes a fund for community projects. This funding could foreseeably be assigned to projects aimed at increasing tourist traffic and visitor numbers. As a result, the proposed modification could ultimately provide a boost to local visitor numbers which in turn would influence local amenity and lifestyle positively.

When considered with respect to the additional impacts on local amenity and lifestyle, the assessment that the proposed modification would not generate significant additional impacts, and the impacts overall remain largely consistent with those already approved remains a valid conclusion.

5.3.4 Increased Hours of Operation (TN, OT)

5.3.4.1 Overview

21 submissions referenced concerns over potential increases in noise, lighting and vibration related impacts should the proposed extended hours of operation be approved.

Two other submissions are referenced and reviewed in the following sub-sections.

- One submission raised concerns over the scheduling of trucks during periods when people working in Goulburn were likely to be using the roads.

- One submission raised concerns that if the Applicant was granted permission to operated outside of daytime hours, this could set a precedent for other quarry operators in the local area.

5.3.4.2 Truck Noise, Vibration and Lighting (TN)

Representative Comments

I feel it is unreasonable to expect the residents of the truck route to endure the sound of trucks from 5 am till 10 pm at night. What is the point of moving to the country for the quiet life.

246740 Submission

There is also concern of trucks using exhaust brakes as they get close to the village. At night and in the early morning noise travels long distances. Even in daylight hours trucks can be heard a couple of kilometres away. It may be noted that the DA states on page 80 of 5.4.2 that existing noise levels are influenced by the wind in the trees, insects and birds. Thus, use of trucks for these extended hours means residential receivers will very distinctly and hugely hear the heavy vehicles disturbing their amenity. This is not acceptable.

246764 Submission

They propose to start transporting from the Ardmore Park Quarry at 5:00am, (much earlier than approved), and also increase the duration from 7:00pm to 10:00pm. This is an unreasonable imposition of residents. it (sic) was a quiet rural area. Now we can hear the thump and bang of empty trucks going down Jerrara Rd. We DO NOT want to listen to this until 10:00pm at night.

246668 Submission

How is it possible that residents near the haul route will NOT be negatively impacted by truck movements starting very early and continuing until very late? There is bound to be increased light and noise pollution.

246982 Submission

Response

The following responses consider the matters of noise, vibration and lighting individually.

Noise

The revised Noise Impact Assessment, which considered actual pass-by noise in modelling noise levels likely to be received, confirms that transport operations would comply with noise criteria set in accordance with the NSW Road Noise Policy.

The above notwithstanding, and as discussed in preceding sections, the Applicant has taken various steps to reduce the impacts associated with transport operations on adjoining landowners to the product delivery route.

- More stringent limits on the number of truck movements during the extended hours of operation have been nominated (namely a maximum of 10 truck movements per hour). Furthermore, these maximum hourly number of movements

would generally not be reached except under maximum day transport scheduling. Traffic movements after 6:00pm would be restricted to that required to improve the operational efficiency of the following day.

- By distributing truck movements over an additional 6 hours, and as a result of the use of higher mass limit trucks, the number of truck movements each hour is likely to reduce from that which would occur under the current approval conditions. This would provide for a reduction in road noise over the operating period.
- The Driver Code of Conduct will be reviewed and revised following determination and specifically prohibit the use of engine brakes along the product delivery route between 5:00am and 7:00am. In the absence of this noise source, the transport operations would not generate L_{max} noise levels which would be likely to wake people from their sleep. On the basis that sleep disturbance is not caused by the proposed transport operations, any increase in the noise between 5:00am and 7:00am becomes less significant (as most people will be asleep).

On the basis of the above, it is assessed that noise levels of the proposed increased hours of product despatch would be reduced as far as reasonably possible, would comply with road noise criteria and would not impact unacceptably on the residents of adjoining properties.

Vibration

With respect to the potential vibration impacts, reference is made to a vibration assessment completed by Heggies Pty Ltd (Heggies, 2008) for the original *Environmental Assessment* (RWC, 2008). Heggies (2008) calculated the likely vibration received at a distance of 35m would be 0.5mm/s from a truck travelling at 50km/hr and 2.0mm/s from a truck travelling at 100km/hr. This is below the relevant standard used to assess the potential for damage to dwelling and buildings of similar design (5mm/s).

The level of vibration associated with the larger PBS trucks would be equivalent based on the spreading of weight over the additional axles of the vehicle. In fact, as discussed in the *Truck Impact Chart - Technical Advisory Procedure (Edition 2.1), September 2016* (Australian Trucking Association (ATA), 2016)), the 4th power Equivalent standard axle (which allows for comparison of pavement wear through weight and vibration) are reduced (see **Table 26**).

Table 26
Truck Load Status and Equivalent Standard Axles

	4th Power Equivalent Standard Axle (ESA)			
	Load Status			ESA's / 1 000t
Vehicle Type	**0%**	**50%**	**100%**	
6 axle Truck & Dog (33t)	1.64	2.64	7.7	290
9 Axle PBS Vehicle (51.0t)	1.68	3.21	10.35	241
Source: Modified after ATA (2016) – Table 3				

On the basis of the comparison of ESAs between the 6-axle and 9-axle trucks, the vibration induced by the PBS approved trucks would be equivalent to (and potentially less) than for the 6-axle truck and dog vehicles. The vibration received at structures adjoining the product delivery route would therefore remain well below the criteria of 5mm/s.

Lighting

An increase in the traffic-related lighting is expected, however, the significance of this is considered relatively minor as pre-dawn, there is no reason to believe that either truck lights or noise would result in sleep disturbance. For those in the local community who are awake and outdoors pre-dawn, it is noted that the number of truck movements remains relatively low and would be restricted to no more than 10 per hour (with an average of 8 – see **Table 1**). As discussed previously, the number of truck movements post-dusk is likely to be very low and therefore have limited impact on local light conditions.

The above notwithstanding, drivers will be advised to be considerate of other road users and neighbouring landholders. While high beams are considered necessary when operating at night, the use of these during the dawn and dusk periods would be only once these provide a noticeable improvement in vision. On the basis of the above, light pollution generated by pre-dawn and post-dusk traffic movements is not considered as likely to have a significant impact on neighbouring landholders and residents.

The assessments above notwithstanding, the Applicant reiterates its commitment to reviewing and responding to any complaints made in relation to transport or other activities of the Quarry. Where driver behaviour is resulting in adverse impacts on local landholders and residents, action will be taken to ensure this does not continue. The Applicant is also happy to consider additional measures which could be taken to reduce any impacts on local landholders and residents.

5.3.4.3 Scheduling of Truck Movements

Representative Comment

The indicative traffic movements suggest that a majority of the movements will be in the early and late hours whilst local residents are travelling to and from work to suit Multiquip's operation. This does not suit the local community, is unreasonable and puts an extra burden on an already fragile and difficult commute at dawn and dusk when wildlife are most active.

246390 Submission

Response

The Applicant has reviewed transport scheduling and, as illustrated in **Table 1** (refer to Section 2.3), would reduce hourly truck movements during the 7:00am to 10:00am period (from that which would likely be scheduled within the currently approved hours of operation). Truck movements during the 6:00pm to 10:00pm period would be limited and generally restricted to that required to improve the operational efficiency of the following day.

Overall, extended hours allows for a reduction in the number of trucks which would be despatched every hour, in particular during periods of increased local commuter and school traffic.

5.3.4.4 Fear of Precedent (OT)

Representative Comment

The hours of travel proposed are unsuitable and unreasonable. Other similar operations within the local area (such as the Hi-Quality, Windellama operation) are not permitted to transport during the extended hours proposed by Multiquip. By accepting further extended hours it would set a precedent for future expansions or other operations seeking to commence operations in the region.

246390 Submission

Response

The Applicant accepts the concerns of this submission, however, notes that the proposed modification has been made to satisfy specific requirements of the Quarry. The Applicant cannot comment on the potential for precedent, however, notes that every application is reviewed, assessed and determined by the DPE on its individual merits.

5.3.5 Truck Size and Restrictions (RR, WB)

5.3.5.1 Heavy Vehicle Restrictions on Jerrara Road (RR)

Representative Comment

I believe Jerrara Road is a residential road. The majority of land blocks along Jerrara Road are minimum Council size housing blocks… My rate notice states category General Residential…Road (sic) and Maritime have heavy vehicle restriction (sic) on residential roads as well as Goulburn Mulwaree Council.

248720 Submission

Response

With respect to the author of this submission, local roads are only restricted in use by heavy vehicles where the condition or dimension of the road or bridges is determined by the road authority to be below that which can safely carry heavy vehicle traffic. For example, there are a number of weight limited bridges on local roads in the Goulburn Mulwaree Council LGA.

With respect to Jerrara Road (and Oallen Ford Road), the local road authority (Council) was consulted and did not object to the approval by the National Heavy Vehicle Regulator for use of these roads by the longer and higher mass limit Performance Based Scheme (PBS) trucks of the Applicant (see **Appendix 2**).

The above notwithstanding, the Applicant has met its commitments in upgrading Jerrara and Oallen Ford Roads to better accommodate the heavy vehicle traffic generated by the Quarry (and other developments). Furthermore, the Applicant has reviewed transport scheduling to illustrate how this would be managed on average, high production and maximum production days (refer to Section 2.3). This scheduling takes into account periods of sensitive and peak use of these roads by local commuters.

Finally, the Applicant notes that the transportation route is an approved transportation route and the matters raised by the respondent are therefore not an important consideration.

5.3.5.2 Measurement of Production Volumes (WB)

Representative Comment

Within the proposal Multiquip note the request for increased volumes however, do not provide any information as to how volumes will be managed. To our knowledge there is no weighbridge on site therefore volumes are not able to be managed accurately. This therefore limits the ability to legally manage volumes and could result in lack of evidence of individual movements. How can the community be sure that the agreed extraction volumes are not being breached if there is no accurate evidence or accountability?

246390 Submission

Response

The Applicant Operates a weighbridge located at the Site Administration Area on the Quarry Site.

5.3.6 Road Safety (RA, TI)

5.3.6.1 Overview

The matter of adverse effects on road safety was raised in 26 submissions. Of these 25 commented in a more general sense as to the increased risks posed by the larger trucks, increased truck movements and extended hours of operation. An individual submission commented on a specific road safety matter associated with a particular intersection.

5.3.6.2 Introduced Increases to Road Safety Hazard (RA)

Representative Comments

Jerrara Road is a quiet rural road with reasonable undulations and ongoing curves and winds. There are large volumes of wildlife in the area with low visibility due to the curves and undulations of the road. There is limited mobile phone coverage with many areas of the road in black spots and no areas to pass long vehicles safely. The proposed hours or travel would further exacerbate the above risks by adding darkness and, throughout the winter months, very regular heavy fog for the entire length of the transport route. In addition, the winding curvy nature of the road combined with the proposed longer trucks will require the trucks to veer onto the other side of the road to negotiate the tighter bends increasing safety risk to oncoming traffic that will be forced to take evasive action to avoid collision.

246390 Submission

I am also very concerned about the increase in the potential for accidents on Jerrara road due to both the number and size of quarry trucks being proposed and the increase in hours of operation particularly in the early morning and at night when vision is significantly reduced. ...

The current approval is for a maximum of 88 truck movements per day. It is proposed to average these movements to allow for an increase from 88 to 124 movements on any one day. This is an extra 36 movements per day which is a 41% increase on any one day. This is unreasonable for the local community on Jarrara Road to have to dodge 41% more truck movements on our local road system.

242467 Submission

I am on shift work and am on these roads at all hours of the day – I now not only have to navigate the wildlife, slippery roads with the frost, heavy fog, but a truck that it 25 metres long and weighs 50 tonnes on a road that is not suitably equipped to handle this. My safety is being put in danger because of Multiquips desire to make a dollar.

245882 Submission

Response

As noted in Section 5.2.4.7, in reviewing the comments on road safety, it is important to note that a level of impact, and mitigation of this, has already been established through the conditions of PA 07_0155. Assessment of impacts on road safety is therefore focused on what additional impacts would occur and whether these, on top of those already felt, are acceptable. In response, the following matters are considered.

- An increase in the size of trucks operating on the roads.
- An increase in the maximum number of truck movements each day.
- An increase in the hours of operations.
- External meteorological and other factors.

Increased Truck Size

The PBS trucks have been designed and purpose-built to incorporate best practice safety and environmental controls. Importantly, these vehicles have been assessed under the Performance Based Scheme (PBS) by the National Heavy Vehicle Regulator (NHVR) with Authorisation Permit No. 168751v4, to operate a 25.8m truck arrangement on the roads of the product delivery route subject to the conditions of the permit, issued under Section 143 of the *Heavy Vehicle National Law Act 2012*. The granting of the permit follows the obtainment of support from the road authorities (Goulburn Mulwaree Council and the Roads & Maritime Services [RMS]) (refer to Section 2.4 and **Appendix 2**).

Further to the issue of Permit No. 168751v4, the most recent Road Safety Audit (see **Appendix 8**) has confirmed the roads function effectively and safely for use by the 25.8m vehicle without any increased safety risk.

It also worthy of note that by using the higher mass limit trucks, it is likely that a reduction in total truck movements on local roads would be experienced when compared to that which is currently approved. That is, as each truck movement carries more quarry product, the number of movements required to deliver the same tonnage is reduced. For production up to 400 000tpa, a reduction in truck movements by approximately 1/3 is expected (with the reduction in truck numbers reducing as production increases from 400 000tpa to 580 000tpa).

Considering the above, there is no reason to believe that the increased truck size would increase the road safety hazard of the Quarry transport operations.

Increased Daily Truck Movements

Following the significant upgrades to Jerrara and Oallen Ford Roads, which have improved the standard of these roads significantly in line with the Austroads *Guide to Road Design* series (refer to **Plates 1** to **4**), the movement of up to 88 Quarry trucks per day is approved. The proposed modification would result in the maximum number of daily truck movements on these roads increasing, however, the total number of truck movements on these roads would not exceed an average of 88 per day each month.

The proposed modification would result in up to 36 additional truck movements under maximum day conditions. This equates to an average of 2 truck movements per hour over the proposed hours of transport operations (5:00am to 10:00pm). Notably, and as illustrated in **Table 1** (refer to Section 2.3), transport operations scheduling would not require any increase to the maximum hourly frequency of truck movements (14) and in actual fact indicates that effective scheduling would result in 12 truck movements as the most in any one hour.

The indicative transport scheduling of **Table 1** also illustrates that the number of truck movements during the 7:00am to 10:00am and 4:00pm to 6:00pm periods, when the majority of local commuter and school-associated traffic is on these roads would be reduced from that likely under current scheduling due to the increased hours of operation.

On assessment of the proposed modification, the Applicant is not proposing to increase the total number of truck movements, and as noted in the discussion on truck size would potentially reduce the number of truck movements, nor the hourly rate of movements. There is therefore no reason to believe that the proposed modification would increase the road safety hazard as a consequence of increased daily truck movements.

Increased Hours of Operation

It is noted that the proposed modification would require trucks to travel to and from the Quarry Site during periods of darkness. However, it is noted that the existing volume of traffic on Oallen Ford Road and Jerrara Roads during these times is very minor (refer also to **Tables 2** and **3**).

	5:00am to 7:00am	6:00pm to 10:00pm
• Oallen Ford Road	20 vehicles	48 vehicles
• Jerrara Road	44 vehicles	46 vehicles

Therefore, the potential for an incident is very much reduced by the low volumes of traffic on these roads.

The potential for an incident has also been significantly reduced in recent times with the completed road upgrade works. The roads of the product delivery route now provide 2 x 3.5m wide sealed lanes with a 1m shoulder (0.5m sealed) on both sides. Creek and other water course crossings have also been upgraded to provide a minimum 8m wide sealed carriageway. The standard of these roads exceeds the majority of most other local roads in the local government area, including those which carry heavy vehicle traffic.

The Applicant can also confirm that their drivers would be required to operate to the highest standards with a Driver Code of Conduct strictly enforced. GPS tracking of vehicles would allow the Applicant management to identify the location and speed of vehicles as required should complaints over driver performance be made.

On the basis of the above, while the potential for a traffic incident cannot be ruled out, there is no reason to suggest that the operation of the Applicant's trucks on these roads between 5:00am and 7:00am, and 6:00pm and 10:00pm would result in an unacceptable increase in road safety hazard.

External Factors

As a result of the increased hours of operation, transport operations would extend further into periods when meteorological conditions such as fogs and frosts occur. In noting this, fogs and frosts regularly occur after 7:00am during the winter months and so drivers already manage these conditions.

It is also likely that the extended hours of operation would result in an increased potential for incidents involving local wildlife. This is likely to be exacerbated by drought conditions with native herbivores seeking out new growth which often germinates in roadside verges and drains. As for the meteorological conditions discussed above, this is a factor of local roads in the Goulburn Mulwaree LGA regardless of time of day, however, it is noted that recent clearing and road widening is likely to improve sight lines on the product delivery route providing greater warning to drivers of animals on the road or road side.

The Applicant's Driver Code of Conduct will be reviewed and updated following determination of the proposed modification to include reference to early morning and evening conditions and the requirement to consider the specific hazards associated with these periods. The Driver Code of Conduct will be strictly enforced with drivers who repeatedly infringe subject to penalty.

On the basis of the above, while the proposed modification would increase exposure of drivers to external meteorological and biodiversity factors which could increase the road safety hazard, overall this increase is likely to be acceptable and manageable through driver behaviour.

5.3.6.3 Safety of the Tickner Valley Road - Jerrara Road Intersection (TI)

Representative Comment

Tickner Valley Road intersection with Jerrara Road is a traffic hazard. A right hand turn lane is needed…The problem is that with the increase in traffic because of quarry operations, traffic is more likely to stop on Jerrara Road waiting to turn right onto Tickner Valley Road. Tickner Valley Road is quite busy. It appears to be just a dirt road over a cattle grid. It is actually over

4kms long and has a significant number of permanent residents and of course the occasional weekenders who would be affected on Saturdays…they should provide a right hand turn lane because of the large number of permanent residents on Tickner Valley Road. They indicated that they understood it was a traffic hazard and that they would look into it.

246668 Submission

Response

The impact of Quarry traffic on the performance of this intersection is considered to be overstated in the submission. Even with truck movements at the maximum allowable hourly rate (14), and an additional 10 Quarry related light vehicle movements, this only represents an average of one traffic movement every 2.5 minutes. This level of additional traffic is unlikely to create the intersection congestion suggested.

The above notwithstanding and noting that any work on this intersection requires Council approval, the Applicant is supportive that this matter is raised with Council as a possible point of funding from contributions raised through the proposed VPA (refer to Section 2.12).

5.3.7 Road Condition (RD, RI, RW, RS, BT)

5.3.7.1 Overview

The matter of increased truck movements on the local roads between the Quarry Site and Hume Highway was raised by 23 submissions. The specific issues of concern have been categorised as follows and addressed in the following sub-sections.

- The adequacy of the current road upgrades was questioned in 10 submissions.
- 21 submissions questioned the capacity of the roads to accommodate the larger trucks without accelerated deterioration.
- One submission raised concern over the adequacy of the bridges on Jerrara Road be confirmed.

5.3.7.2 Quality of Jerrara Road Upgrade Works (RW)

Representative Comment(s)

The new widened areas of Jerrara Rd are degrading faster than the actual original rural road. - Who will pay for the constant maintenance of the roads as they fall apart when used by heavy vehicles?

243663 Submission

The road upgrade which is currently in progress is of a sub-standard. It has already had to be repaired by Multiquip due to the poor state of the road upgrade. Multiquip had to stop continuing the widening operations of the road due to the complaints from the local community to the council and no has had to go back and repair them.

245882 Submission

I am also concerned about the standard of the work currently being performed by Multiquip to upgrade Jerrara Road. Areas of subsidence suggest that the completed road will perform poorly and that the ratepayers of Goulburn Mulwaree will have to fund increased maintenance.

246668 Submission

Response

At the time of public exhibition of the *Environmental Assessment*, road works were only 50% complete with review by the Applicant and Council yet to be completed with respect to the works. The incomplete nature of the roadworks appears to have influenced the submissions as the standard of the roadworks as now completed has been demonstrated to be to a very good standard.

Throughout 2018, Council has undertaken many inspections of the road works and made requests to the Applicant to complete various upgrades and additional work. All works were completed as directed by Council. As is discussed in Section 2.7.1, in April 2017 a Post-Construction Road Safety Audit (Rigore, 2018) (**Appendix 7**) was completed on the road as completed with various deficiencies identified for correction. In consultation with Council, the majority of the deficiencies identified have been addressed as roadworks were continued.

On completion of the roadworks, an Existing Road RSA commissioned and completed (see **Appendix 8**). As discussed in Section 2.7.2, this Existing Road RSA confirms that the existing road environment is suitable for use by the proposed transport operations involving the longer PBS vehicles.

Therefore, while the concerns of the submissions on the standard of the road upgrades were understandable at the time of exhibition of the *Environmental Assessment*, the Applicant is confident that the work has now been completed to the required standard.

5.3.7.3 Capacity of Roads for Current and Increased Truck Numbers / Potential for Accelerated Road Deterioration (RL/RD)

Representative Comment(s)

The road upgrade that is currently being completed is not adequate for the current truck movements, let alone wanting to now drive a truck which is 25.3 metres long, which is 6.3 metres longer than the current approval, and from lift the capacity from 33 tonnes to 50 tonnes.
…

You do not need to be an expert to see that the road condition will be impacted by this. An average car weighs 1.5 tonne. This equates to 33 extra cars for one 50 tonne truck driving this road. In weight terms that 4,133 more cars driving along this road for the 124 truck movements weighing 50 tonne. This will impact the usable life and condition of the road. Has this been duly considered by Multiquip and have they committed to fixing this road when they destroy it? Will this impact the remaining life of the road – yes. A proper assessment has not been completed since 2004. Does Multiquip benefit through the PBS scheme – yes. Again, who is impacted? My safety driving this road every day. I'm not sitting in a truck that's 25 metres long and weighs 50 tonne who does not feel the impact of pot holes, poor road condition, and poor road edging.

245882 Submission

By increasing product limits it would seem that more trucks or bigger (ie) b-doubles would be used to transport the extra materials out of the quarry area. This raises the ever-increasing concerns of trucks being on country style roads for which the roads were never built for.

240541 Submission

… That road needs strong, thick bitumen edge to edge, to support larger trucks. The surfacing being done right now, definitely is not going to last.

247018 Submission

While I acknowledge the role of engineers in the design of the upgrade of jerrara rd, I can't see the pavement handling a 40% increase in tonnage with no effects. We could find ourselves in a situation where council has insufficient funds to repair the damage caused by multiquip trucks, and Multiquip refusing to pay more than the VPA which may not cover the damage either. Then we would have a really dangerous road being heavily used and not maintained..(sic) what (sic) measures are in place to address this potential problem?

244814 Submission

I have some qualifications and much experience in road-building having built roads in the Goulburn Mulwaree, Yarralumla, Palerang and Cooma Shires. Further I have contracted under hire to the Dept of Main Roads, then the Roads and Traffic Authority and many other construction organisations over the past 30 years…In my professional opinion, the roads in question will deteriorate very quickly when the quarry trucks commence fully-loaded operation at the new tonnages sought.

243998 Submission

Response

Following from the response to the issues raised with respect to road construction standard (see Section 5.2.8.2), the Applicant again references the various independent assessment works which have been completed to assess the standard of the upgraded roads and suitability for the proposed transport of Quarry products. In particular.

- The Road Safety Audits described in Section 2.7 confirm the roads will function effectively and safely for the intended purpose and combination of vehicle types.
- The remaining Life Analysis completed by PMS (2018) (refer to Section 2.5 and **Appendix 3**) demonstrates that, even with the Quarry traffic, approximately 85% of the route has a remaining life of 20 years or greater. The analysis identified that the remaining life of the loaded northbound lanes would be, on average, 2 years less than the unloaded southbound lanes.

Given the commitment to ongoing contribution to road maintenance and upgrade contained within the VPA (see Section 2.12), The Applicant is confident that the concerns of the submissions are unfounded. Indeed, as PMS (2018) (**Appendix 3**) note, the agreed road contributions of up to $10.6 million would approximately 10 times the likely maintenance costs attributable to the Quarry.

5.3.7.4 Adequacy of Bridges on Jerrara Road (BT)

Representative Comment(s)

With the projected volume of heavy vehicles it is imperative that the new bridge structure on Jerrara Road be load tested and gross weight signs applicable erected.

248720 Submission

Response

As noted in Section 2.6.1, Bridge Design (2018) (refer to **Appendix 4**) concludes all ten bridge and culvert structures of Jerrara Road are in good to fair condition with no defects sufficient to compromise their structural capacity.

5.3.8 Water Resources (GW, WM, RP, WQ)

5.3.8.1 Overview

The matter of impacts on groundwater was raised in 22 submissions. Of these, 20 referred to either general or property specific concerns over the impact of the Quarry on local groundwater availability.

Additional matters of concern which are addressed individually include the following.

- The reliability of self-monitoring.
- The fairness that neighbours have to demonstrate an impact before being compensated.
- The absence of an assessment of water quality in the surrounding catchment.

5.3.8.2 GW: Impacts on Groundwater from Increased Extraction (GW)

The comments and objections related to impacts on local groundwater ranged from complaints that the current quarry operations are having a negative impact on the availability of groundwater on individual properties to more general concerns over the potential for the Quarry to negatively impact on the local aquifers relied upon by the local community.

In responding to these concerns, it is important to note that many of the objections reference the extraction of water from the Quarry's approved production bore. No modification to the operation of this bore, nor any increase in the approved volume of water which is approved from this bore is being proposed. Therefore, while the response below considers the matter of the extraction of water from the approved "Ardmore Park" property production bore, this is an approved activity and subject to the conditions of PA 07_0155 as currently issued.

In responding to these issues, reference is made to the investigation of the local hydrogeological setting and what influence the current quarry operations and production bore pumping regime have on the groundwater supply of the neighbouring "Inverary Park" property. While this investigation of LCC (2018a), which can be reviewed in full as **Appendix 9** and in summary in Section 2.8, refers specifically to the spring supply on the "Inverary Park" property, the information on local hydrogeological setting in instructive in responding to the concerns raised by the local community. The response to the groundwater-related matters contained in the submission of the DoI-Water (LCC, 2018b) (refer to Section 4.3.4), are also referenced where relevant.

Representative Comment(s)

The high demand on ground water is a huge concern as my own registered bore had already dropped over 3 meters since ardmore park began using underground water.

244988 Submission

I own a property to the west of the quarry and rely on groundwater for stock and household use. It appears there is some insane idea that the water aquifer is an unlimited resource. By extending the mine and the amount that it extracts will only lead to more extraction of ground water and further lowering the water table. … It is great that my neighbour has been given assurances that the mine will provide him with water if he runs out however this fails to acknowledge that the aquifer goes across many properties and spreads far and wide beneath the ground. Will the mine provide me with substitution of water if required?

245649 Submission

The almost doubling of the underground water allocation from 110ML to 210ML is not in proportion with the production increase. The effect of this on the local waterways and aquifers has not been adequate assessed in the new proposal. … Given the heavy reliance on bore water by local inhabitants and farming businesses, and the lack of rain in the recent years, the extraction of 200+ML would not be inconsequential and needs better quantification and assessment before approval should be given.

246721 Submission

Other residents of the area whose properties are located adjacent to the quarry have reported negative impacts on their access to groundwater resources. The requested increase in annual production is likely to exacerbate these issues. While the quarry has already received approval to operate, it should not be permitted to increase its impacts such that pre-existing rural business activities are adversely impacted.

245675 Submission

Response

As discussed in Section 4.3.4, it is important to note that the proposed additional extraction is only impacting on the basalt of the "Ardmore Park" property. As discussed in the Hydrogeology Assessment supporting the proposed modification and again in LCC (2018b) (see **Appendix 15**), the basalt is unsaturated and therefore the proposed modification will have no additional effect on local groundwater.

The Applicant is not proposing to draw any more water from the Fractured Rock Groundwater Source of the Greater Metropolitan Region Groundwater Sources - Goulburn Fractured Aquifer Water Sharing Plan than the water access licence allows and the updated site water balance (refer to Section 5.3.3) illustrates that the demand for groundwater will not exceed the entitlement held by the Applicant under a water access licence.

With respect to the potential for the approved Quarry operations to impact negatively on the availability of water to other landholders, while not in question given the activities which require the use of groundwater are already approved, the assessment of LCC (2018a) in response to a submission claiming the Quarry operations were negatively impacting on local spring flows is relevant. LCC (2018a), which is provided in full as **Appendix 9** and summarised in Section 2.8, identifies that the Quarry production bore extracts groundwater

from a deep 'confined' hard rock aquifer hosted by a regionally-significant regional fault dissecting steeply-dipping and deformed Devonian age metasedimentary rocks (see **Figure 3**). As discussed by LCC (2018a), monitoring of the static (non-pumping) water level in this bore indicates that while the water level has fluctuated between 57.0m and 61.1m below ground level since drilling and test pumping in 2004, the water level has not significantly changed. Furthermore, water levels monitored in peripheral licensed observation bores ('non-pumping' bores) on the Quarry Site do not reveal any impacts from pumping. This is consistent with the results of aquifer testing and distance drawdown analysis in 2004 and indicates that any reduction in water levels or flow rates in bores on properties surrounding the Quarry Site is likely to be a result of local factors associated with that bore or water source.

The Applicant will continue to monitor the water levels in the fractured Devonian metasedimentary basement rocks and paleo alluvial sequence underlying the clay aquitard. As noted in Section 4.3.4, the Applicant proposes the installation of another nested bore to monitor water levels in the unsaturated basalt and deeper paleo alluvial sequence. In accordance with the commitments of the Quarry Water Management Plan, the Applicant will respond to any reduction in water levels in these bores, or any reasonable claims of Quarry-induced reductions in water on surrounding landholdings, with thorough investigation and make good on any losses if deemed to be resultant from Quarry operations.

5.3.8.3 Self-Monitoring of Water Extraction and Reuse (WM)

Representative Comment

The proponents state that 50-75% of water used in sand washing is "available for re-use". How much is currently being re-used? There are questions around how the accuracy of self-monitoring can be proven in regards to both water extraction and water recycling and re-use.

246982 Submission

Response

The extraction of groundwater from the "Ardmore Park" property bore is metered and as such the Applicant has accurate records of water extraction.

With respect to the volume of water recycled through the wash plant, a review of the water losses following the cycle of water through the wash plant (see **Table 21**) indicates that 165L of water is lost for every tonne of sand washed. Based on an estimated requirement of 700L to be used per tonne of sand washed, this represents a water recovery rate of 76.5% (slightly better than estimated in the *Environmental Assessment*).

5.3.8.4 Responsibility to Demonstrate Impacts on Groundwater (RP)

Representative Comment(s)

Further, the proposal demands "scientifically and independently demonstrated significant impact on any neighbouring users that can with available scientific data be attributed to the quarry operations" before the proponents will take any steps to address the situation. According to mining experts consulted, this clause is in opposition to proper mining and

quarrying practice, which holds that it is the responsibility of the mine or quarry operators to demonstrate no adverse impact on other water users. Multiquip is no doubt aware that were local residents to believe the responsibility was theirs to prove impact, and seek independent scientific data, this would cost about $1400,000. This clause has punitive and intimidatory implications which do nothing to increase trust between the proponents and local residents.

246982 Submission

Response

As identified in *Section 5.7.3.3* of the *Environmental Assessment*, the Applicant has committed to a Groundwater Response Plan to be implemented if triggered in accordance with a Trigger Action Response Plan (TARP) (*Section 5.7.3.2* of the *Environmental Assessment*). Both the TARP and *Groundwater Response Plan* form part of the Quarry's *Water Management Plan*.

This approach to investigating incidents of reduced water availability do not demand scientifically proven demonstration of impacts of the quarry, however, do require that some rigour is applied to claims of impact. The *Groundwater Response Plan* is repeated below to reiterate that the aim of investigations is to confirm impacts attributable to the Quarry and quantify these such that the affected groundwater user can be appropriately compensated, and measures put in place to reduce future impacts.

1. *Should the triggers identified in **Table 21** (TARP) be observed, an investigation into the cause of such a decline would be initiated.*
2. *The investigation would involve a review of monitoring data and operational activities to identify correlation with pumping cycles, extraction rates and/or climatic data (rainfall). Statistical analyses of monitoring record, pumping cycle, Quarry development and rainfall would be used to determine whether any decrease in water level/s may be due to extraction from the groundwater system.*
3. *If the groundwater drawdown is determined to be resultant (either solely or partially) from extraction, the likely distance of drawdown impacts would be calculated with respect to the observation bores.*
4. *Based on the calculated area of drawdown impact, the potential for bores (or springs) on surrounding properties to be affected would be assessed. In the event that the impacted area is considered as having the potential to impact on any of these bores, the Quarry operator would notify the relevant landowner an inquire as to the availability of groundwater from the potentially affected bore (or spring).*
5. *Should there be any conjecture over the scale of impact, Multiquip would offer to test the relevant bore (or review the flow from the spring) to confirm the magnitude of any reduction in water availability.*
6. *In the event that it is confirmed that the Quarry operations have indeed led to a reduction in water availability on properties, Multiquip would commission a qualified hydrogeologist to assess the impacts and advise on the appropriate mitigation or compensatory measures. Table 19 provides an overview of the potential mitigation or compensation measures that might be implemented, however, the most practical of these could only be determined following professional assessment of the type and scale of impact.*

7. *Concurrently with the commissioning of a qualified hydrogeologist to assess the impacts and advise on the appropriate mitigation or compensatory measures, the Quarry operator would inform DPI-Water of the observed groundwater drawdown and commencement of investigations to identify the most appropriate mitigation and/or compensatory measures.*
8. *The results of the hydrogeological investigations would be forwarded to the affected land owner(s) and DPI-Water nominating the mitigation or compensatory measures to be undertaken (see Section 5.7.3.4 for an overview of the potential mitigation or compensation measures that might be implemented). In the event that these are deemed satisfactory by the affected land owner(s) and DPI-Water, the nominated measures would be commenced.*

Application of the *Groundwater Response Plan* is evident in the approach taken to the claims of reduced groundwater spring flow on the "Inverary Park" property (see Section 2.8). Notably, the investigation concludes that the Quarry operations are unlikely to be the source of reduced spring flow.

5.3.8.5 Absence of a Surface Water Quality Assessment (WQ)

Representative Comment(s)

No specific assessment of water quality has been undertaken on the Quarry site as there is rarely water flowing observed." On Map 81 The Key in blue indicates the many water courses and drainage lines on Ardmore Park. Was there a requirement for the dams and waterways on Ardmore should at least been tested? Frogs and aquatic species including yabbies usually indicates water health.

Additional Submission 2

Response

Located high in the catchment, sampling of running water is very difficult. While background water quality data is not available for the Quarry Site, an assessment of the likely impact on the downstream catchment was undertaken with reference to the *Neutral or Beneficial Effect on Water Quality Assessment Guideline, 2015* (WaterNSW, 2015). Through the use of the MUSIC stormwater model, SEEC (2017) demonstrated that the Proposal would have a Neutral or Beneficial Effect on runoff from the Quarry Site.

5.3.9 Quarry Noise (QN, NC, SR, NL)

5.3.9.1 Overview

13 submissions objected to the proposed modification on the basis of the potential noise impacts associated with the modified Quarry operations. Of these objections:

- a significant number of reference the fact that Quarry operations are audible at significant distances from the Quarry Site already;

- several are concerned over the noise generated during the extended hours of operation;
- two submissions noted the Quarry as failing to comply with noise criteria;
- one submission queried the exclusion of their residence from the road noise assessment; and
- one submission questioned why the predicted noise levels were not include in the *Environmental Assessment*.

The following sub-sections respond to these objections and comments, with reference to the results of noise monitoring summarised in Section 2.11.1 (see also **Appendix 12**), the revised Noise Impact Assessment discussed in Section 2.11.2 (see also **Appendix 14**) and responses to the EPA's comments on the original noise impact assessment (refer to Section 4.1.4).

5.3.9.2 Quarry Noise Already Audible (QN)

Representative Comments

We have read the noise impact report in detail and while its authors have concluded that there are no negative impacts to the area's auditory amenity from either the current or the proposed expansion, as a resident living within 2500m of the quarry I can categorically state the (sic) it has had already a substantially negative effect on the acoustic qualities of our property. Prior to its operations we rarely encountered mechanical noise. Now we hear the quarry's operations very clearly on a daily basis, including from inside parts of our house. This is particularly noticeable on days with a westerly wind (most days) or calm days. During winter the noise from the quarry is particularly and intrusively audible. While this noise generated is not so loud as to be a health hazard it is still a cause of angst due to the volume, duration and type of noise. Instead of the natural sounds of a rural property we now experience the equivalent of living in town with constant background mechanical and traffic noise. Whilst this noise may well be below the regulatory thresholds it has had a significant impact on our enjoyment of the environment of our property. The proposed increases in operating hours and the increase in extraction area, increase in extraction volumes and the relocation of the hard rock processing equipment likely to mean that our opportunities to enjoy a rural acoustic environment will in effect be severely limited

245675 Submission

Firstly the new proposal of 97 hours per week of constant noise at my house will totally destroy our amenity I am requesting at this moment for further noise monitoring at my residence from the EPA CANBERRA My own noise metre when crushing and sand processing takes place is way above da set limits of 36dbs most times in the vicinity of more than 45 to55dbs for long periods. This means the only way to get away from this noise is to hide inside the house with the television on As you can imagine isnt what we moved onto our country property for.

246280 Submission

The quarry noise is too loud some days at our residence and complaints to quarry managers are useless. The extended operating hours will make it even harder for us to get our young children to sleep, and to stay asleep for enough time each day.

245717 Submission

Response

It is relevant to note that while the Quarry may be audible from various points surrounding the Quarry Site, this does not imply it is non-compliant with noise criteria. As described and discussed in Section 2.11.1, the two most recent noise monitoring campaigns demonstrated that the Quarry was operating within the noise limits imposed by PA 07_0155 and EPL 13213. The noise modelling of the revised Noise Impact Assessment (refer to Section 2.11.2) indicates that with the implementation of the nominated noise mitigation measures, compliance with these noise limits can be achieved.

The above notwithstanding, the Applicant is committed to continually improving its performance with respect to noise management. In keeping with this objective, in recent months the Applicant has taken various steps to improve the management of noise from the Quarry Site. Notable measures implemented which will have a significant effect on noise levels received and management of complaints are as follows.

- Hard rock crushing operations will not be undertaken until relocated to the basalt extraction area, i.e. below natural ground level.
- The sand washing plant has been replaced by a model which replaces the former diesel-powered water pump with electric pumps. This effectively removes one of the more constant and higher sound power level sources for the Quarry.
- Product despatch will be limited to three trucks per 15 minute period before 7:00am.
- Quarterly noise monitoring by an independent acoustic consultant is now undertaken to review performance against criteria.
- The site-based Environmental Officer has been trained and has access to noise monitoring equipment. During periods when Quarry management suspect noise levels may be elevated, e.g. winter mornings, the Environmental Officer will be able to periodically check noise levels to confirm these are at or below the noise criteria.
- The Applicant has accepted and is committed to the implementation of a Pollution Reduction Program (PRP) which will assess noise emissions from the Quarry and review opportunities to reduce these further. Potential methods to reduce noise emissions will be reviewed and discussed with the EPA. Those identified as reasonable and feasible and likely to produce tangible reductions in noise levels will be implemented.

An updated Noise Management Plan will be prepared following the determination of the proposed modification and will reflect the commitments made in the *Environmental Assessment* and this RTS. Protocols and procedures for site-based monitoring and response will also be included. This should improve relations with landholders who have noted their frustration to date with the response of the Applicant to complaints. Importantly, the Noise Management Plan will be treated as a live document and updated as and when opportunities to implement improvements to noise management are identified.

5.3.9.3 Noise Generated During Extended Hours of Operation (QN)

Representative Comment

The longer hours of operation - 17 hrs (5am to 10pm) M-F and 5am to 5 pm sat. ... all sound is magnified in quiet rural areas, specially in early morning hours and after 7pm.

247018 Submission

Response

As part of the revised noise modelling, VMS included scenarios during the early morning period when road trucks would be loaded and despatched from the Quarry Site (see **Appendix 14**).

The results of this noise modelling are summarised in **Tables 5** and **6** of Section 2.11.2 and confirms that compliance with noise criteria can be achieved at all but Residence R9 during the day time (by only 1dB(A)). Noise management measures have been proposed to prevent exceedances of the Project Noise Trigger Levels (of the NPfI) under noise enhancing weather conditions such as temperature inversions referred to by the respondent (see Sections 2.11.2 and 2.11.3).

5.3.9.4 Noise Levels Recorded Over Existing Noise Criteria (NC)

Representative Comments

After complaints not being responded to by the quarry, we started gathering proof of the noise emanating from the Quarry and this is one recording was taken on 10 October 2016 when the Quarry was crushing hard rock. This was a noise that was becoming more frequent and we wanted proof of the levels. Average dB 48.29 [graph supplied].

246970 Submission

As part of conditions of consent, they were supposed to put the crushers & sand processing machines into sheds to reduce noise & dust to neighbouring properties. This was put in the original EIS that was passed. This has not been done, in fact they have these machines sitting up high on top of stockpiles like monuments. The noise frequently exceeds well over the Db levels of 35 & 36 which are our limits in the EPA license, but they choose to ignore it.

Additional Submission 1

Response

It is difficult to comment on the monitoring output presented as there is no information on when the equipment was calibrated (or by whom), the qualifications of the person who completed the analysis or how the analysis was undertaken.

The above is not to suggest that Quarry operations were not audible during these periods, however, the results of the most recent noise monitoring indicates that except when strong inversion conditions extended into the daytime period, compliance with noise criteria was achieved.

It is noted that operation of the mobile crushing plant will not recommence until this can be relocated to the floor of the hard rock extraction area, where noise emissions will be attenuated by the reduced elevation of the noise source and adjacent quarry face.

5.3.9.5 Exclusion of Surrounding Residences in Noise Assessment (SR)

Representative Comment

It is very interesting to note that on page 60 of the EA, table 7 details proximity of surrounding residences to the transport route – our property is not listed in that table and yet our house fronts Jerrara (sic) Road i.e. Lot 5 DP804796 on Forrest Close. This leads me to question how many other residences have been left off this table and why all properties are not listed. It is my belief that you are not being presented with all the information.

242467 Submission

Response

To the best knowledge of the author of the *Environmental Assessment*, the residential receivers presented in the *Environmental Assessment* represented a comprehensive list. It is acknowledged that there have been some receivers missed, however, we remain confident that the residential receivers located closest to the road have been identified. The Noise Impact Assessment (refer to Section 2.11.2 and **Appendix 14**) assesses the potential noise level at the closest residence and confirms compliance with road noise criteria can be achieved. Therefore, while regrettable that all receivers were not identified, the assessment demonstrates that compliance with road noise criteria wold be achievable at all receivers.

5.3.9.6 Increased Noise Levels Not Identified (NL)

Representative Comment

The proposal indicates that noise levels would increase marginally. It does not however indicate what these levels would increase to. If the current production is below the level of the existing approvals how could a realistic indication of the increase be arrived at?

246390 Submission

Response

The predicted noise levels which would be received surrounding the Quarry Site are provided in *Section 7.3* of the revised Noise Impact Assessment (see **Appendix 14**). The noise assessment took into account the maximum proposed rate of production and did not rely on the existing production rates to determine the predicted noise levels. **Tables 5** and **6** in Section 2.11.2 provide these predicted noise levels which would comply under all scenarios at all but Residence R9 during the day time (by only 1B(A)) during the night time. Noise management measures have been proposed to prevent exceedances of the Project Noise Trigger Levels (of the NPfI) under noise enhancing weather conditions (see Sections 2.11.2 and 2.11.3).

5.3.10 Vibration Impacts (HI)

5.3.10.1 Impacts of Vibration from Trucks on Historic Sites (HI)

The submission of the Bungonia and District Historical Society Inc. (No. 246175) raises concerns over the potential for the larger vehicles to generate damaging vibration at the Parsonage and associated "aucaria pine tree" (located adjacent to the Bungonia By-Pass) as well as "the rubble stone building on the GMC Local heritage register".

Representative Comment(s)

What consideration has been given to the increased impacts of extra weights, convoying of trucks and the increased daily cap of truck movements on the by-pass to the Historic (1840's) Parsonage and the associated iconic aucaria pine tree also dating from 1840's?. (sic) We assume that the tight concentration of truck movements would cause a different impact from movements spaced with significant time gaps between them. Although the trucks are explained as state of the art ,the extra compressive weight could also be an issue for these historic items...The trucks pass by the rubble stone building on the GMC Local heritage register.

246175 Submission

Response

The only 'rubble' structure identified in Schedule 5 of the Goulburn Mulwaree Local Environmental Plan 2009 is located at 219 Faithfull Street, Goulburn. This would be unaffected by the proposed Quarry transport.

With respect to the potential vibration induced damage to the Parsonage, reference is made to a vibration assessment completed by Heggies Pty Ltd (Heggies, 2008) for the original *Environmental Assessment* (RWC, 2008). The vibration received following the pass-by of a loaded 33t capacity truck and dog vehicle was measured and extrapolated to calculate the vibration received at a distance of 35m would be 0.5mm/s from a truck travelling at 50km/hr and 2.0mm/s from a truck travelling at 100km/hr (Heggies, 2008). The Parsonage is located approximately 75m from the Bungonia By-pass and therefore trucks travelling at the speed limit (60km/hr) would generate vibration well below the 2.5mm/s criteria established for "*Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)*" (Heggies, 2008).

The level of vibration associated with the larger PBS trucks would be equivalent based on the spreading of weight over the additional axles of the vehicle. In fact, as discussed in the *Truck Impact Chart - Technical Advisory Procedure (Edition 2.1), September 2016* (Australian Trucking Association, 2016), the 4^{th} power Equivalent standard axle (which allows for comparison of pavement wear through weight and vibration) are reduced (see **Table 26**).

On the basis of the comparison of ESA's between the 6-axle and 9-axle trucks, the vibration induced by the PBS approved trucks would be equivalent to (and potentially less) than for the 6-axle truck and dog vehicles. The vibration received at structures adjoining the product delivery route (including the Bungonia By-pass) would therefore remain well below the criteria of 2.5mm/s.

5.3.11 Dust (DS, DI)

5.3.11.1 Overview

Three submissions identify dust emissions as an issue of concern. The concerns over dust relates to the following matters which are addressed in the following sub-sections.

- Dust generated by increased truck movements (one submission); and
- The impacts of dust emissions on visual amenity, health and drinking water (three submissions).

5.3.11.2 Increased Truck Movements (DS)

Representative Comment

Increasing the maximum allowable truck movements a day would create a huge amount of dust on the internal roads within the quarry and watering the roads is part of the Conditions of Consent…To change the Conditions of Consent from [watering of the unsealed roads] 3 times a day to once a day is not going to supress the dust, however, to reduce the water is a acknowledgment that they are aware that the water is declining. We see the only alternative is to seal all internal roads.

246970 Submission

Response

It is noted that the reference to the reduction the number of road watering cycles reflects the fact that on many days a single cycle will be sufficient to reduce dust. Conversely, on some days, three or more cycles may be required to prevent visible dust emissions from the Quarry Site. The modified reference does not therefore represent reduced commitment to dust suppression, simply a more realistic description of implementation.

On the basis that road watering is undertaken at a rate which reflects meteorological conditions and production levels, there is no reason to believe that the increase in daily truck movements on the Quarry Site would lead to excessive dust emissions. While the Applicant may consider sealing some internal roads in the future, there is no immediate plan to do so, nor is this considered necessary in order to comply with dust deposition criteria.

5.3.11.3 Impacts of Increased Dust Emissions on Visual Amenity, Health and Drinking Water (DI)

Representative Comment

No 3 is the Quarry going to help pay for the cleaning of owners houses because of all the Dust (sic) little (sic) alone the dust which will land in the dams which we rely on for our horses to drink from plus the water from the dams we use to wash ourselves and our clothing.

247478 Submission

To increase these hours to 5.00am - 10.00pm Monday to Friday and 5.00am - 5.00pm Saturdays would mean that neighbours would have to put up with even more dust for 17 hours a day…On windy days in particular that dust can blow in many different directions and end up in neighbouring paddocks & water catchment. Unfortunately for us, our paddocks have our machinery sheds, shearing sheds & other outbuildings which we collect our drinking water from…Increasing the Annual Production from 400,000 to 580,000 and Increasing truck movements from 88-124 would create a massive amount of dust on top of what we already endure. This would be from the Sand Processing as well as the Hard Rock, trucks coming and going, Machinery Loading and shifting product. Roads that are never watered and are not sealed would have further truck movements on them creating even more impact. This is a gross violation of the amenity of the neighbours and should not be granted.

246970 Submission

Response

Recognising the potential for the proposed modification to generate additional air emissions, the Applicant commissioned Ramboll Pty Ltd to complete an Air Quality Impact Assessment (AQIA). On the basis that the proposed dust suppression measures nominated in *Section 5.5.3* of the *Environmental Assessment* are applied, the results of the AQIA (which are summarised in *Section 5.5.5* of the *Environmental Assessment*), demonstrate that while the annual emission rate of all particulate matter would like increase (from 56 600kg/annum to 87 500kg/annum), the concentration of airborne particulates or deposited dust received on neighbouring properties would only increase by a very small amount.

The minimal increase in airborne particulate matter concentrations would remain well below the applicable health criteria (refer to *Tables 15* and *16* of the *Environmental Assessment*) and therefore adverse impacts on the health of neighbouring landowners is not considered likely.

With respect to deposited dust, as noted in Section 5.2.3.2, it expected that there will be days (and months) of higher dust emissions, however, the Applicant is committed to minimising emission levels on these days by implementation of the operational controls and safeguards nominated in *Section 5.5.3* of *Environmental Assessment*. While noting images of dusty conditions have been presented by neighbouring landowners, the evidence provided by dust deposition monitoring (refer to **Table 25** in Section 5.2.3.2) confirms that dust suppression activities are maintaining dust levels well below the nuisance criteria of EPL 13213.

Emissions at these low and compliant deposition levels have not been identified as having material effect on the drinking water supplies of local dams or rainwater collection systems elsewhere. The statement contained on page 91 of the *Environmental Assessment* that "*on the basis of the project-increment concentrations and the analysis of cumulative impacts accounting for ambient air quality, the likelihood of adverse impacts at neighbouring receptors arising from the proposed modification to the Quarry is low*" is therefore considered to be an accurate assessment.

5.3.12 Odour (BA)

5.3.12.1 Odour from Trucking Bitumen Supplies and Products (BA)

Representative Comment(s)

The Environmental Assessment does not address the impact of odours from trucking bitumen supplies to the quarry or bitumenised product to market. The prevailing wind direction is directly from the bypass road to my property and Bungonia village. The Department should require the impact of odours be properly modelled and assessed prior to determination.

246738 Submission

Response

Reference is made to *Section 6.3.2* of the Air Quality Impact Assessment which considered the potential for odour emissions from the bitumen pre-coating operations.

> "*While the bitumen pre-coating plant involves the use of an odourous substance (bitumen emulsion product), the potential for odour impacts at distance beyond site boundary is considered negligible. The process involves the application of a bitumen emulsion solution to product aggregate via a specialised hopper/conveyor system prior to dispatch to market and is significantly lower in odour potential than an asphalt batching plant. All surrounding receptors are located at a distance greater than 750m from the pre-coating plant. Ramboll environ experience with dispersion modelling studies for complete asphalt batching plants, significantly higher in odour impact potential than a bitumen pre-coating plant, show that odour impacts are well below applicable criteria at distances greater than 750m from point of release. Further, it is noted that the Victoria EPA (Publication 1518, March 2013) prescribe a separation distance of 500m for asphalt plants with production capacity of greater than 100t per week. An assessment of odour impacts from the bitumen pre-coating is therefore not considered necessary*."

Any transport of pre-coated aggregates would be in covered trailers with any residual odour emitted quickly dispersed. Therefore, similar to the assessment of Ramboll that modelling of odour from the pre-coating plant itself was unnecessary, modelling odour from trucks transporting the pre-coated aggregates is also considered unnecessary.

5.3.13 Visual Impact (LI, VI)

5.3.13.1 Overview

Four submissions identify the visual impact of the proposed modification (and Quarry more generally) as an issue of concern. The concerns relate to the following matters which are addressed in the following sub-sections.

- Light spill from night-time truck movements and on-site activities (one submission); and
- The impacts of dust emissions on visual amenity, health and drinking water (three submissions).

5.3.13.2 Impacts of Light from Trucks and Quarry (LI)

Representative Comment(s)

How is the light spill going to be managed from the convoys of trucks in the night, both on the haul route and the concentration of light and activity on site in the dark of night?

246910 Submission

Response

The Applicant will enforce a Driver Code of Conduct which, as identified in *Section 5.3.3.3* of the *Environmental Assessment* (p.74), requires drivers to "*Avoid convoying with other trucks. When driving on Jerrara Road or Oallen Ford Road, the driver is required to allow adequate space between trucks to permit other traffic to pass*."

As identified in **Table 1**, the Applicant has reviewed the likely scheduling of truck movements from the Quarry Site and this illustrates that the number of trucks likely to operate between 6:00pm and 10:00pm would vary from 1 to 4. The number of trucks operating between 5:00am and 7:00am would also be limited to less than 10 truck movements per hour. This level of traffic, which during the spring and summer months will generally be operating when there is residual natural light, is not considered unreasonable or likely to affect those residing along the product delivery route.

As discussed in the *Environmental Assessment*, activities on the Quarry Site before 7:00am and after 6:00pm would be limited to truck loading and despatch. This would not require significant lighting (a single lighting plant directed towards the activities) and therefore have minimal impact on the visual amenity of surrounding landowners.

5.3.13.3 Impact on Visual Amenity of the Quarry Operations (VI)

Representative Comment(s)

As adjoining neighbours of the Ardmore Park Quarry and having a clear view of this mine from our property (Inverary Park), we object to the extension of the extraction area due to the visual amenity. We work and socialise in different out buildings & sheds on the property which are all in this area of the farm. The quarry operations are clearly visible from numerous positions on our property…A small 2-3 metre high bunding wall and some trees on the eastern side of the extraction area are not going to remove the visual appearance of this mine site.

246970 Submission

They have had the property for 15 years to which they could have planted trees for screening and reduction in visual, dust & noise, but they have done nothing but extract resources without consideration at all for neighbors. They say they will plant trees now. They will take 20 to 30 years to be effective, at that age we would be lucky if we can still buy green bananas.

Additional Submission 1

Quarry Entrance should be zig zag to prevent visual pollution. Soil should be banked on boundary's and covered with vegetation.

248720 Submission

Response

The concerns of the owner of the neighbouring "Inverary Park" property (Submission No 246970 were addressed in Section 5.2.5. As discussed in *Section 5.10.4* of the *Environmental Assessment*, as the extraction area is developed the visibility of operations from vantage points surrounding the Quarry Site would be progressively shielded or obscured as:

- the hard rock processing plant moved to the floor of the extraction area; and
- the visual amenity bund constructed (see *Figure 24* of the *Environmental Assessment*).

Views of the more elevated components of the Quarry Site would remain visible from the paddocks of "Inverary Park", however, it is argued that the vegetated bund (which should achieve a vegetated elevation of between 645m and 650m AHD within one to two years of establishment) will provide for visual screening of operations from much of the southern sections of the property (see **Figure 10**).

The Applicant will review landscape management activities, including tree planting on the Quarry Site, as part of an updated Landscape Management Plan following determination of the proposed modification. Of specific note, the Applicant has made a commitment to construct a 2m to 3m high earth bund to the east of the proposed extraction area extension and vegetated with native shrub and tree species. Other locations for targeted vegetation screens will be investigated.

'Zig zag' style approach to development site access points are generally constructed to ensure the approach speed of vehicle is controlled, not as a visual screen. Given the existing nature of the Site Access Road and intersection, the reconstruction of this approach was not considered as part of the proposed modification.

With respect to the comment regarding the banking of soil and vegetation, placement of soil bunds against the property boundary would have minimal effect on the visibility of the Quarry from surrounding vantage points. The Applicant does note, however, that a visual bund has been constructed to the west of the Quarry operations, with another bund to the east of the extraction area proposed as part of this modification.

5.3.14 Non-Aboriginal Heritage

5.3.14.1 Impacts on Historic Property "Inverary Park" (HR)

Representative Comment

On Page 49 Non -Aboriginal Heritage Corkery Report, makes no reference to Historical Inverary Park why was this omitted? Was this deliberate? The Historical property Inverary Park is adjacent to Ardmore Park Quarry. Inverary is a separate property, adjacent to Inverary Park and both properties are very a short distance from Ardmore Park Quarry.

Additional Submission 2

Response

The proposed modification would have no material impact on this property and so reference to the historic values have not been included.

5.3.15 Animal Fatalities

5.3.15.1 Impacts of Increased Trucking Hours of Operation on Wildlife (RK)

Ten submissions raised concerns over the potential for increased interaction between Quarry traffic and local wildlife, specifically pre-dawn and post-dusk. Some of the submissions also raised the concern that there could be added hazards added to local road users as a result of an increase in the number of animal carcasses which could remain on the road. The following three quotes are considered representative of the concerns raised.

Representative Comments

In addition as a wildlife rich area I am most concerned about the potential increase in animal injury and fatality due to the proposed extension to operating hours, when most of our native wildlife is most active.

242467 Submission

Bungonia often has foggy conditions, which makes our roads very dangerous to drive on, along with our local wildlife of kangaroos, wallabies and wombats who are, of course, nocturnal, venturing out predominantly at dusk and dawn. The new proposed trucks are much longer and carrying heavier loads – 45% more product than the current truck and dogs. This makes these vehicles much more difficult to pass and line of sight for oncoming traffic impossible. If one of these trucks hits a kangaroo, a following vehicle has no chance of seeing the carcass before possibly hitting it itself. Trucks do not stop to check if the animal is dead or alive and they do not remove the carcass from the road.

246764 Submission

Our wildlife -especially the Kangaroos will be massacred on the roads if the Quarry is allowed to extend their hours as the wild life is out and about early morning and just after dusk.

246715 Submission

Response

It is acknowledged that there is an increased potential for vehicle – wildlife interaction during the pre-dawn and post-dusk hours as some animals are likely to be more active in these hours and the ability to identify animals on the side of the road is reduced.

This risk would be mitigated (reduced) in part by the road widening works which provide for a wider field of view of drivers. It is also noted that the number of trucks likely to operate after 6:00pm is unlikely to exceed 4 (movements) per hour (see **Table 1**), reducing this risk in the post-dusk period.

While animal carcasses could cause a hazard to other road users, this is an accepted feature of roads through wooded and forested areas. Sensible driving practices, such as reduced speed at night and leaving sufficient space to trucks, should minimise the risk of incident associated with animal carcasses on the road. Unfortunately, it is not safe or practical for trucks to stop after interacting with an animal on the road, however, drivers will be encouraged to contact Quarry management to report any such incident.

The Applicant will update its Driver Code of Conduct to reflect the increased hours of operation and require drivers to take additional care when driving during periods when wildlife activity on or near the road is likely be increased. This includes periods following rainfall (especially during drought conditions) when fauna is likely to graze on the grasses which germinate in roadside drains and clearways.

The increased potential for wildlife injury or fatality is acknowledged, however, the impact on local biodiversity is considered to be overstated in many of the submissions. The Applicant does not accept that the proposed increased in transport hours of operation would result in 'carnage', nor does the Applicant believe that this operation will significantly increase the risk to other road users who implement sensible driving practices on local roads.

5.3.16 Bitumen Plant (BO, SB, BL)

5.3.16.1 Overview

Nine submissions raised concerns related to the operation of a Bitumen Pre-coating plant on the Quarry Site. These submissions identified the following specific issues of concern.

- The impacts of emissions from the plant on pollution and health (eight submissions).
- The potential for leachate from the plant to contaminate land and water resources (two submissions).
- The categorisation of the plant as 'small' (one submission).

The following sub-sections consider each of these issues individually.

5.3.16.2 Impacts of Bitumen Plant on Air Pollution and Health (BO)

Amongst a number of people in the local and wider community there is a fear that the Bitumen Pre-coating Plant will generate significant odour, dust and carcinogenic air emissions. Others are concerned over the potential for runoff and leachate to pollute the surrounding environment.

The following quotes are considered representative of the concerns held by the local and wider community.

Representative Comments

the proposed bitumen coating plant is located on the western boundary, which is very close to the village of Bungonia. There's every possibility that there will be odours and carcinogenic particles reaching the residential area, with no acknowledgement by corkerys (sic) of this. What is the strategy for the project if this becomes fact? If there's no strategy for mitigation then the proposal must be refused.

244814 Submission

The proposed Bitumen Pre Coating Plant would be another source of dust, which would contribute to the neighbours health. This proposed plant would require further extraction of material, further crushing & processing to reach desired sizes or material required for the operations. It would also have further machinery & trucks creating dust in which to load the product for dispatch.

246970 Submission

The Bio accumulation of chemicals and impurities transported by trucks and vehicles, into and out of Ardmore Park is of extreme concern…BITUMEN comprises of toxic minerals Arsenic, Chromium, Mercury, Lead, Selenium, Sulphur, and Nickle which is extremely hazardous. BITUMEN is also composed of mainly of highly condensed Polycyclic Aromatic Hydrocarbons that actually includes more minerals than mentioned above and is carcinogenic emissions of Sulphur Dioxides is extremely toxic and has harmful on plants and animals aquatic species, humans. There is no guarantee of quality assurance regarding the materials used by Ardmore.

Additional Submission 2

Response

The concerns raised by the community over the potential for increased dust, gaseous and odour generating emissions from the proposed Pre-coating Plant are acknowledged. It is important to note that the scale of the proposed pre-coating activities is small and as described in *Section 2.3.2* of the *Environmental Assessment*, would involve a specialised hopper/conveyor system with a chute attachment where bitumen is sprayed onto the aggregate and sand mix.

The pre-coating activities are not particularly dusty with the activities to be located on a bunded hardstand surface and the aggregates to be coated washed to remove excess dust before being transferred. It is noted that the operation of the pre-coating plant was included in the dispersion modelling of the AQIA which illustrates minimal increases in airborne or deposited dust concentration on surrounding properties.

As noted in the AQIA and *Section 5.5.5.3* of the *Environmental Assessment*, while the bitumen pre-coating plant involves the use of an odour generating substance (bitumen emulsion), the proposed process involves the application of a bitumen emulsion solution is significantly lower in odour potential than an asphalt batching plant. Considering this, and noting all surrounding receptors are greater than 750m from the pre-coating plant, the AQIA concludes the potential for odour impacts at distance beyond site boundary is negligible.

With respect to the referenced gaseous emissions from the activities, the bitumen emulsion would be contained within a self-bunded storage tanks before being pumped directly to the chute attachment of the plant. The coated aggregates would be immediately loaded to trucks for delivery to road work sites, i.e. pre-coated aggregates would not be retained in stockpiles on the Quarry Site. This controlled and contained system would limit the potential for dispersion of gaseous emissions from the bitumen emulsion to neighbouring landholdings.

The limited retention time of the pre-coated aggregates on the Quarry Site notwithstanding, the AQIA considered the operation of the pre-coating plant and referenced the Victorian EPA (publication 1518, March 2013) which prescribes a separation distance (to residential receivers) of 500m for asphalt plants with production capacity of greater than 100t per week. In this case, the closest residential receiver is at least 750m from the proposed operations, well beyond the distance identified as safe by the Victorian EPA.

Considering the relatively small volumes of pre-coated aggregates likely to be produced (<20 000tpa), the controlled and contained design of the operations, and the significant separation distance to neighbouring receivers, the potential for adverse impacts from dust, odour or gas emissions is negligible.

5.3.16.3 Potential Impacts of Leachate (BL)

Several submissions raise concerns over the potential for the bitumen emulsion to leach from storage or stockpiles and contaminate the local environment. The following quotes are considered representative of the concerns held by the local and wider community.

Representative Comments

Relating to the stockpiled treated bitumen; there is no indication of how the integrity of the piles will be maintained against leechates and degradation; The Quarry suggests with reference to "the coated aggregates forming a stockpile below the chute. The stockpiled aggregates would generally be loaded directly to trucks for delivery to road maintenance or construction projects." This expectation does not account for the considered management of the material when the 'general' does not occur nor when stockpiling may be necessary. What will happen then?

246910 Submission

The proponents have not indicated what the water usage would be for this new process. Further, if the precoated product is not used within a certain time, it has to be rewashed. There are toxins involved in this processing, storage, recoating and disposal, and the community is entitled to know what pollution risks there are to their environment.

246982 Submission

The leaching of chemical contaminants from site is not guaranteed. Accumulation of contaminants bitumen residue, oil spills, chemical repositories and sludge on the plant floor will leach into the surrounding areas, by climatic conditions and via trucks transporting contaminants out into the immediate surrounding soils, plants, water drains, and dams watercourses and drain lines.

Additional Submission 2

Response

The Applicant notes that the proposed activities would be undertaken on a low permeability hardstand surface which would be bunded to prevent runoff leaving the areas surrounding these activities.

The Applicant can confirm that the pre-coated aggregates would be directly loaded to trucks for despatch to local road work sites. As such, the potential for bituminous runoff to leach into the ground is minimised. Should rewashing of aggregates be required, this would be undertaken on an impermeable and bunded surface to prevent runoff which could seep into the ground.

As an added control, the Applicant will include in future management plans a requirement to inspect the pre-coating plant area after each campaign and remove any residual aggregates or bituminous material. The use of pre-coated aggregates needs to be considered in context, i.e. the pre-coated aggregates transported from the Quarry would be destined for local roads or driveways which would be constructed and completed within hours of departing the Quarry Site. There would be no changes to the chemical composition to the pre-coated aggregates. Hence, the impacts on site would be similar to those at the point of use, i.e. negligible.

On the basis that the proposed activities would be a controlled and contained system, with limited exposure to runoff, bunded to prevent uncontrolled runoff and regularly impacted and cleaned to remove any contaminating materials, the potential for contamination through runoff or leaching is assessed to be negligible.

5.3.16.4 Bitumen Plant Size and Water Usage (SB)

Representative Comment(s)

The Amendment 3 proposes a "small" bitumen precoating plant. The MultiQuip representatives would not put a quantity on "small". Clearly such an ambiguous term is unacceptable. The community cannot make a proper response without specific numbers … The proponents have not indicated what the water usage would be for this new process.

246982 Submission

Response

Section 2.3.2 of the *Environmental Assessment* provides a description of the scale of the propose Bitumen Pre-coating Plant. With production unlikely to exceed 20 000tpa, and comprising a small hopper, single conveyor and chute attachment, the description of 'small' is considered appropriate and accurate. Water use would be restricted to that required for the basalt and sand processing operations, as well as dust suppression activities, which has been accounted for in the site water balance (as reviewed and updated in Section 4.3.3).

5.3.17 Excavated Natural Material (ENM) and Rehabilitation (BF, EP, EM, SS)

5.3.17.1 Overview

Seven submissions raised concerns or objected to the inclusion of Excavated Natural Material (ENM) as a backfill material. The specific matters raised in these submissions, which are addressed individually in the sub-sections, are as follows.

- Six submissions raised concerns over the potential for the ENM to contaminate the local environment.
- One submission objected to the potential for imported ENM to be blended with extracted materials to create a quarry product.
- Two submissions raised concerns over a perceived lack of detail as to management of the ENM.
- One submission raised concerns over the ability of the Applicant to rehabilitate the Quarry given the majority of materials extracted would be sold.

5.3.17.2 Potential for ENM to Pollute Air, Soil, Groundwater (BF)

Representative Comment(s)

The use of ENM as backfill is of particular concern given that nowhere in the application does it outline in any detail what this material is, where it is sourced and what testing has been done to verify its classification. Although the proposal states the application would be in accordance with the Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014, no further details are given…The Bungonia area already has an issue with contaminated ENM being bought in from Sydney, typically respiritable crystalline silica (RCS) and petrochemical residues. What assurances can the Multiquip and the authorities provide the residents that their community will not be contaminated by incorrect declared and inappropriately monitored ENM? Approval for ENM cannot be given unless both the operators and the EPA can show these concerns can be addressed adequately.

246721 Submission

The importation of VENM [as per original consent] should in my opinion be the only type allowed given that:- 1/ The Quarry is on a plateau; Unless scientifically proven to be otherwise, we assume that the water resource is a single definable resource to be shared equitably and managed sustainably ,now and in the future between all users. 2/The potential for Ground water contamination is high with ENM as the source material is NOT CERTIFIED AS UNCONTAMINATED; continued amounts will be added over a long time increasing the potential impact of any contaminants. 3/the groundwater is a fragile and vital survival resource to the plateau communities, facing as we all are, significant climate change and reductions both in reliability and predicted rainfall.

246910 Submission

Response

It is important to note that the ENM as an approved backfill material has been proposed to maximise the potential for the extraction area void to be backfilled. This will improve the final landform and increase the potential for the Quarry Site to be returned to agricultural use at the end of Quarry life. The Applicant has realised that restricting backfill to VENM limits this potential.

As stated in the *Environmental Assessment* (*Section 2.5.3.2*), only material which can be certified as ENM (in accordance with the Resource Recovery Order for Excavated Natural Material Order 2014 (ENM Order 2014) under Part 9, Clause 93 of the POEO (Waste) Reg) would be accepted by the Applicant. In order to be certified as ENM, laboratory analyses of the material must be completed to ensure threshold contaminant levels are not exceeded. On the basis that the material meets the definition of ENM, i.e. is naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has been excavated from the ground and contains at least 98% (by weight) natural material, and can be demonstrated to not exceed the contaminant thresholds of the ENM Order 2014, the NSW EPA considers it to be of low risk of contamination and can be applied to land without a licence for waste disposal activities.

With respect to controls over the acceptance of the materials, the Applicant would ensure that only material which can demonstrate compliance with the ENM Order 2014 would be accepted.

A chain of custody procedure would be developed whereby the Applicant would confirm the origin of the material, require records or certification confirming the material meets the minimum thresholds of the ENM Order 2014 and sign-off on acceptance. Once accepted, the Applicant would either:

- Apply as a backfill material within the extraction area in accordance with the Resource Recovery Exemption for Excavated Natural Material 2014 (ENM Exemption 2014) issued under Part 9, Clauses 91 and 92 of the POEO (Waste) Reg; or
- despatch from the Quarry Site in satisfaction of the ENM Order 2014 within 12 months of acceptance; or
- stockpile for screening and blending with extracted materials to produce specialty Quarry products.

As noted in *Section 5.11.2.3* of the *Environmental Assessment*, the Applicant has identified contingency strategies to ensure ENM accepted is not left in stockpile for greater than 12 months prior to completion of one of the above actions.

Over the life of the Quarry, the Applicant will continue to monitor groundwater quality to confirm there is no contamination of local aquifers. In the unlikely case that contamination is identified, the chain of custody procedures and record keeping with respect to placement of ENM materials would allow the Applicant to identify the source of contamination, remediate this, and ensure such materials are no longer accepted.

5.3.17.3 Blending of ENM with Quarry Materials (EP)

Representative Comment(s)

"ENM screened and blended with Quarry materials to produce a specialty product" This sounds as if damaged and contaminated materials will become saleable ; the previous stated purpose in the EA has been to provide for site filling, bunding , and rehabilitation (sic).

246910 Submission

Response

As identified in *Section 5.11.2* of the *Environmental Assessment*, prior to any blending of materials, application would be made to the EPA, in accordance with the *Guidelines on Resource Recovery Exemptions for the Land Application of Waste Materials as Fill* (EPA, 2017), for a specific resource recovery order and exemption for the material to be produced. This process requires the NSW EPA to assess the risk of the proposed material before issuing an order and exemption (from licensing requirements).

Should an applicable resource recovery order and exemption not be obtained, the materials would not be processed and either sold in the form as accepted to the Quarry Site or applied to land.

5.3.17.4 ENM Composition, Usage, Stockpiling, Source and Management (EM)

Representative Comment(s)

…, there are limited details provided to better understand the ENM proposed. Aspects such as the source of the ENM, certification and specifications are not provided. These are reasonable items to better understand by the local community before they can be satisfied that out of specification products can be managed to avoid being brought into the local area. The proposal indicates that ENM will also be used for blending to create specialised products however, there is no further detail on what these specialised products may be nor an indication on the specifications associated with these specialised products. What is the market for these specialised products? The information provided relating to the acceptance of ENM is vague and limited. Finally, there are limited details provided to give assurance on the sampling and quality requirements associated with the materials being received and leaving the operation.

246390 Submission

Clarity also needs to sought about the management of Excavated Natural Mineral as backfill material. Is this to accommodate the waste produced by the Bitumen Plant? There is major concerns of compounding the problems of toxic material. The toxic Polycyclic aromatic hydrocarbons [PAHs] toxins are likely to be included in the backfill compromising an already compromised environment.

Additional Submission 2

Response

As is discussed in Section 5.3.17.2, in order to be accepted as ENM, the material must comply with the ENM Order 2014. This has been issued by the EPA to ensure that only materials with very low risk of contamination are transported from source to application sites without licence.

It is noted that the specific source and content of any ENM accepted to the Quarry Ste cannot be provided in the *Environmental Assessment* as it could be sourced from any number of locations and source materials. It can be confirmed that the ENM does not relate to waste from the Bitumen Pre-coating Plant, which would be minimal and disposed of at a facility licensed to accept hydrocarbon containing materials.

With respect to the referenced specialty quarry products, this refers to the fact that customers may require sand or aggregate products which have properties which can be created through blending with other materials. As noted in the *Environmental Assessment* and Section 5.3.17.3, the creation and sale of such products would require the issue of a specific resource recovery order by the EPA prior to production.

5.3.17.5 Removal of Soil (SS)

Representative Comment(s)

How does the EXPORT of prime Basalt soil [a separated inherited limited approval] rather than its conservation on the site, lead towards a successful rehabilitation of the Quarry site over time??. The introduced materials VENM will have few of the environmental qualities

needed to successfully re-introduce bio-diversity sufficient to reconnect the degraded site to the remnant forest Yellow Box/ Red gum. This is a sensitive & endangered ecological community under the EPBC Act and part of the Corridors into the Morton National Park.

246910 Submission

Response

The Applicant does not propose to sell soils stripped as part of Quarry operations. These soils will be conserved for use in rehabilitation.

The imported ENM and VENM would be used to backfill the void created by the extraction of sand and basalt, with the previously stripped and stockpiled soils respread over the final landform.

The Applicant presumes that the respondent is referring to a separate approval to extract and sell a small quantity of premium soil product used to construct and maintain turf cricket pitches. As one of very few suppliers of this material in NSW, the Applicant considers this activity an essential public service. This activity is undertaken under a separate approval and is not relevant to this Proposed Modification.

5.3.18 Community Consultation (LC, CA, CR, NP)

5.3.18.1 Overview

Eight submissions referenced inadequacies in the Applicant's approach to consultation in their objections. Of these, five made general comments regarding the approach to consultation and notification and a further three made specific comments on aspects of the consultation. The following sub-sections consider and respond to these issues.

5.3.18.2 LC: Adequacy of Consultation with Community and Landholders

Representative Comment(s)

Using the Bungonia Progress Association (BPA) as means to consult the community is insufficient. The BPA does not represent the local community and is not independent in its views given it has received substantial funding for the hall from the proposal applicants. This potential for funding was not sought from other community business. Multiquip's consultation process is poor and at no time did all stakeholders receive adequate notice of meetings and/or information relevant to allow proper consideration by the community. Only residents on the proposed route have been consulted and received the letters in Appendix 4 (page A4-5, A4-7), but others not on the route but still potentially affected by dust, noise, wind and pollution from the operation, and also from traffic on the routes to Goulburn and Marulan, did not receive this letter or any other communication from Multiquip or its affiliates and subsidiaries.

246721 Submission

These are my reasons for objecting to the proposal, and I believe that for every submission received there are probably 20 more who didn't know about this part 3A, there having been nothing mentioned at any stage in our local monthly newsletter, the Bungonia times. The proponent claims to have contacted property owners in the area but his methods were, in my

opinion, designed to exclude the majority because the letters placed in mailboxes were random, insufficient, and not placed in locations which were likely to be impacted adversely by the quarry. I was notified by an interested party but would have otherwise had no option to respond due to the lack of information made locally available by the proponent.

244814 Submission

We are only 1km from the quarry as the crow flies and there has been NO efforts by the proponent to contact us, via mail or roadside letterboxing, to enlighten us on his plan for a vast expansion of usage of a scarce resource. We all feel that this has been a deliberate plan of exclusion of those most likely to be adversely affected by the quarry's proposed expansion.

246792 Submission

Response

Section 4.2.2 of the *Environmental Assessment* summarises the consultation effort of the Applicant during the planning and assessment phase of the proposed modification. The Applicant purposefully concentrated efforts at notification to those located along the product delivery route, given the most significant component of the proposed modification revolves around Quarry transport. This notwithstanding, the consultation strategy which involved the various forms of notification as summarised below, was sufficiently broad to allow for the wider community to be informed.

- Presentations to the CCC and Bungonia Progress Association.
- Distribution of a notification letter to properties adjacent to the product delivery route.
- Placement of the notification letter on the Bungonia Progress Association Facebook page.
- Individual meetings between the Applicant Community Liaison Manager and local residents.
- Information supplied at the 2017 Bungonia Market Day and Multiquip Road Safety Day.

This strategy is considered comprehensive and sufficient to notify those who might be affected by the proposed modification.

5.3.18.3 Proposed Modifications not Included in Consultation Material (CA)

Representative Comment

That one of the Modification proposals was not advertised in the listed proposed changes. 2.1.2. pg 31 EA no 6 Separation and sale of clay which occurs as lenses within the sand resource. This statement number 6 under the heading "The Proposal provides for the following modifications to Quarry Site and transport operations." Is (sic) not mentioned NOR advertised in the list of modifications proposed for the Quarry. Why not? There are implications to the water use and the methods of separation of this product ; Is there more machinery proposed for this operation ? If so what ?

Will separation of clay + stockpiling? increase the length of time before water can be re-cycled/re-used in the operations ? Is this material to be harvested from silt ponds ? How will that affect their integrity ?

246910 Submission

Response

The proposed extraction and sale of clay reflects an opportunity identified reasonably late in the preparation of the *Environmental Assessment*. The inclusion of this has no material effect on the overall assessment as:

- the clay to be excavated occurs as lenses within the approved extraction, i.e. it would have been extracted anyway;
- the clay would not require any on-site processing prior to despatch, i.e. no additional water use;
- any clay sold would be included in the total production limit of the Quarry, i.e. it would not generate any additional truck movements.

On the basis of the above, while this particular component was not included in material provided during the consultation phase of *Environmental Assessment* preparation, it is adequately described in *Sections 2.2.1* and *2.5.2* of the *Environmental Assessment* and has no material effect on impacts.

5.3.18.4 Registration and Response to Complaints (CR)

Representative Comment(s)

In regards to 3.5 Noise Complaints Summary - Appendix 7 Noise Impact Assessment: To say they have had such a minimal amount of complaints about noise is extremely misleading. Neighbours have been complaining to the Department of Planning and the EPA after not having any response from Multiquip. We have in past years complained to Steve & Jason Mikosic verbally about dust, water & noise to which they said they would 'look into it'. After not hearing back from them, we then decided to contact the Planning Department and then later the EPA to which we have been liaising with both in regard to all of these issues. Last year we were introduced to Multiquips Liaison Officer, Mick Rogers who insisted that we contact himself in regard to the problems regarding noise, dust, water etc and that he would ensure that we had a response to our issues and for us not to contact the EPA & Planning as we could resolve issues more quickly if we spoke with him direct. We tried this on the dust issue and were very disappointed with his response…and therefore have continued our complaints with Dept Planning and EPA.

246970 Submission

Response

Information on complaints and complaints management presented in the *Environmental Assessment* was provided to the author of the *Environmental Assessment* by the Applicant. It is noted that this did not include all queries or calls made to the Applicant over the years which may have been addressed directly at the time and not recorded.

Since the beginning of 2018, however, the Applicant's Environmental Officer has maintained a more thorough complaints log which includes the details of the complainant, source of the complaint and actions taken. The Applicant is committed to the continuation of this more thorough approach for the remaining life of the Quarry.

5.3.18.5 Consultation with Bungonia National Park (NP)

Representative Comment(s)

No importance was placed on Ardmore Park being close to Bungonia National Park where the ecosystem and wildlife are protected. Was the Bungonia National Park involved in the consultation process ?

Additional Submission 2

Response

Personnel of the Bungonia National Park were not consulted as the potential for impacts, direct or indirect, on this land was considered unlikely. It is noted that OEH, the government agency which manages the NSW national park network was consulted to identified environmental assessment requirements.

5.3.19 Costs and Benefits to Community (CB, VP, VA, OQ, BC)

5.3.19.1 Overview

14 submissions objected to the proposed modification citing matters associated with the assessment of costs and benefits to the community. Of these objections:

- seven directly questioned the balance of benefits and impacts to the community;
- three expressed concern over the adequacy of the VPA;
- three queried the need for the Quarry given the existence of other Quarries in the local area; and
- one objected to the competition the pre-coating plant to existing Goulburn businesses.

The following sub-sections respond to these objections and comments. Reference, where relevant, is provide to the Supplementary Social Impact Assessment of Section 2.13.

5.3.19.2 Balance of Benefits and Impacts to the Community from Quarry Expansion (CB)

Representative Comment(s)

Based on the information in the submission the expansion delivers no additional benefits to the community or the local economy but does potentially have many negative impacts on the rural amenity of the area.

245675 Submission

We acknowledge there may be economic benefits to the community as a whole, but those benefits are in part being supplemented by Bungonia property owners who's properties suffer devaluation. The EIS does not address this nor give a balanced view.

244407 Submission

Benefits of the quarry expansion overstated. No quota of employees from local area required o $7 million contribution to economy needs offsetting against infrastructure, social, environmental (including greenhouse gas emissions) and lost agriculture production costs o Benefits to Bungonia itself is minimal (funding to community hall) and mostly negative given the area is either a rural landscape or environmental management area in which mining does not fit.

246719 Submission

Response

The Applicant stands by the analysis of direct economic benefits to the local and regional economies ($7 million annually) through wages, purchase of consumables, goods and services, employment of Contractors and suppliers, and payment of rates and taxes. It is noted that this analysis only accounts for direct contributions, with the flow-on effect of the injection of this capital into the local and regional economics significantly greater.

By way of justifying the analysis, the Applicant references the current annual contribution to the Goulburn Mulwaree economy of its activities in the local area. During the 2017/2018 financial year, the Applicant paid over $5 million in wages to locally based personnel.

In addition to this economic contribution, the Applicant has proposed terms of a VPA which would provide for a contribution to Goulburn Mulwaree Council of up to $545,000 annually (should production reach 580 000tpa). This contribution would provide for the upgrading and maintenance of local roads affected by the Quarry, as well as a fund for community enhancement projects.

As discussed in Section 2.13.5.3, there does not appear to have been any noticeable reduction in either the volume or value of sales in the local area since operations at the Quarry commenced in earnest in 2017. Property values are likely to fluctuate, however, there is no credible evidence that the changes to Quarry operations proposed wold significantly impact on property values.

On balance, and as discussed in Section 2.13.5 and 2.13.6, the relatively minor additional reductions in local amenity related factors associated with the proposed modification are assessed as being adequately offset or compensated by the economic benefits to many in the local area, the regions and state.

5.3.19.3 Uncertainty Over the Adequacy of a Voluntary Planning Agreement (VP)

Representative Comment(s)

S94 contributions; the Quarry wishes for "Inclusion of a conditional clause to allow for Multiquip to enter into a Voluntary Planning Agreement (VPA) with Goulburn Mulwaree Council which would replace the nominated Section 94 Contributions. I am opposed to any particular arrangements with Multiquip that is not also available to other Quarries in the

region. Section 94 contributions are designed to allow for an increase in revenue over time if a business increases its road use; and -logically- to reduce if the haul movements are not made . These measures…are set and regulated across the GMC area to account for the extra impact of the haulage use of the roads; The Council manages these funds towards the best interests of Council ratepayers. Ratepayers can approach the council with their local interests to be met.

246910 Submission

I note that the Modification Request seeks a substitution of Section 94 contributions with a Voluntary Planning Agreement. The original Section 94 contributions were miniscule but their replacement with a "VPA" needs full explanation and investigation.

243998 Submission

Since the public and ratepayers apparently have no right of access to the terms of such a VPA, despite its potential impact on the community and environment, it is open to supposition that the proposed bitumen precoating plant might feature in such an agreement, with the proponent selling precoated bitumen at commercial rates to Council. This is a cause of anxiety given the questions raised about the proposed plant. Since local government is answerable to State, we seek assurance that any VPA relating to this proponent be open to public scrutiny.

246719 Submission

Response

The proposed terms of the VPA would be placed on public exhibition, with any comments, suggestions or objections of the public taken into consideration prior to being finalised.

As identified in Section 2.12, the Applicant proposes to retain the per tonne / per kilometre contribution rate, however, seeks the use of this contribution to better reflect the potential impacts. For this reason, the Applicant seeks to ensure that this money is spent on the local roads affected by the Quarry and with a proportion made available to the local community to be spent on local communality enhancement projects.

The Applicant argues that a contribution of over $500,000 annually is not miniscule as suggested in one submissions.

5.3.19.4 Need for the Project (Other Quarries Can Supply Aggregate Products) (OQ)

Representative Comment(s)

Why should the people of Goulburn be inconvenienced for eight years when it can be achieved in months by Pepper Tree Quarry?

248720 Submission

The proposal fails to mention details of the downstream market proposed by Multiquip. Given there are local quarries closer to and on the highway with the ability to product larger volumes, more specialised products and have better infrastructure and more reliable production. What competitive advantage does Multiquip have that would encourage customers to pay a premium for a lesser quality product from farther afield?

246390 Submission

Response

The Applicant acknowledges there are other quarries in the region supplying hard rock materials to local, regional and Sydney markets. However, with the demand for these materials growing within NSW annually, in particular for sand resources, and the number of active quarries remaining stagnant or decreasing, there is a need for quarries such as the Ardmore Park Quarry to provide security of supply. The size grading of the sand resource within the Ardmore Park Quarry is more suitable to use in concrete manufacture than many other sand quarries that produce more uniform sized sand products. No other sand products similar to those produced at Ardmore Park are produced in the Goulburn-Mulwaree LGA for transportation to Sydney markets.

It is noted that the DPE is currently undertaking an analysis of supply and demand for construction materials in an acknowledgement of the importance of this matter to the continued growth of the NSW economy.

5.3.19.5 Bitumen Plant Competing with Local Business in Goulburn (BC)

Representative Comment(s)

we (sic) feel that the addition of a bitumen pre-coating plant at the quarry doesn't support the locals who already have this business up and running in Goulburn. they (sic) should be supporting local business and those who have jobs there.

247248 Submission

Response

Pre-coated materials from the Quarry would be available for use in local road works. While this may have some impact on other suppliers, competition is not considered a valid reason to object to a proposed development.

5.3.20 Local Amenity and Lifestyle (QA, AP)

5.3.20.1 Overview

14 submissions objected to the proposed modification citing matters associated with local amenity. Of these objections:

- 13 referenced impacts on local lifestyle, property values or local amenity; and
- Two objected on the basis of the extended periods of these impacts (to 2047).

The following sub-sections respond to these objections and comments. Reference, where relevant, is provided to the Supplementary Social Impact Assessment of Section 2.13.

5.3.20.2 Impact on Local Lifestyle, Property Values or Local Amenity (QA)

Representative Comment(s)

We being the neighbours of Ardmore Park were told that we would not loose (sic) any land value yet we find our unimproved land value reduced by up to (sic) 30 percent. My own property value pre and post the quarry has reduced by about 250000 dollars on resale value yet I have no way for any compensation.

246280 Submission

The residents and surrounding landowners are surely entitled to quiet enjoyment of their property, just as rental tenants are, and the increasing size and ongoing expansion of enterprises on the Ardmore site will ensure the eventual destruction of the ambiance and the local community.

244814 Submission

I have been watching the progress of the quarry and find it appalling. The ongoing erosion of quality of lifestyle in the region can be compared to a cancer of which there is no cure…Bungonia was a quiet rural town, the tranquillity of the town has now been compromised and will be for the next 30 or more years.

243663 Submission

Response

The Supplementary Social Impact Assessment (SSIA) presented in Section 2.13 provides an analysis of the social baseline, social values of the local community, matters of concern and the potential impacts of the proposed modification on these.

Considering the measures proposed to reduce or mitigate the additional impacts of the proposed modification, the SSIA concludes that any impacts on local amenity would be offset or compensated by the positive benefits to the economy (including the local economy) generated by the modified Quarry operations.

5.3.20.3 Extension of Impacts to 2047 (AP)

Representative Comment(s)

It is a backward step for the community to be expected to accept all the impacts for extra 8 years…Repeated Modification to consents/conditions etc will undoubtedly also impact on the community over this extra time. Consent for the Quarry was given 7 August 2009 for 30 years resulting in a Quarry completion and Decommissioning date would be 2039; which is what the Community expects for the Quarry duration…There will be another 8 years of impacts still causing difficulties for residents.

246910 Submission

Now based on this it wants to increase the life span of the quarry – once again the local community are to be impacted for longer through more trucks, more noise, more safety risks, for another 8 years.

245882 Submission

Response

The proposed extension to the life of the Quarry reflects the size of the resource remaining to be extracted from the Quarry Site. On the basis of the conclusions of the SSIA, this is considered reasonable.

5.3.21 Applicant's Experience in Quarry Operations (ME)

Representative Comments

Of general concern initially is the overall structure of the Multiquip organisation. The proposal notes that they have extensive experience in all aspects of quarry operations however, Ardmore Park is the only quarry listed on their website. This is in contradiction to the information within their proposal suggesting they own three quarries. Multiquip have experience in the manufacture of heavy trailers as well as poultry breeding however, have no significant experience in large total quarry management operations.

246390 Submission

Response

In addition to the Ardmore Park Quarry, Multiquip manages and operates the Royal Oak Shale Quarry near Goulburn. This quarry produces a valuable source of road building materials and has supplied many major projects in and around Goulburn with its quality product. The extracted material is crushed and screened on-site to provide certified material to our customers. The product is perfect for road building sub base and has supplied many farm & wind farm projects in the region.

In addition, Multiquip contracts to and operates crushing equipment for Holcim and Boral throughout NSW.

5.3.22 Hazards

5.3.22.1 Spill Management (SM)

Representative Comment

If a spill occurs the persons Accredited for the clean-up is the Goulburn NSW FIRE AND RESCUE HAZZMAT as they have the equipment required to deal with the situation. They are 40 minutes away. This also applies if a fire occurs within the plant. HAZMATT equipment would be required to fight the fire, due to the emission of toxic substances. Formal documentation about the incident would need to be submitted.

Additional Submission 2

Response

The Applicant maintains a Pollution Incident Response Management Plan (PIRMP) which would be implemented in the event of a spill or leak of polluting materials. The PIRMP can be viewed on the Multiquip Quarries website at
http://mqquarry.com.au/files/8915/2220/5612/PIRMP_-_Pollution_Incident_Response_Management_Plan_-_August_2017.pdf.

In the event of a fire on the Quarry Site, available fire suppression equipment would be used, if safe to do so, to attempt to put the fire out. Where the fire cannot be suppressed, emergency services would be notified and the Quarry Site evacuated under instruction of the Quarry Manager or Safety Manager.

5.3.23 Quarry Life

5.3.23.1 Overview

Eight submissions raised concerns or objected to proposed modification with reference to the life of the Quarry. The specific matters raised in these submissions, which are addressed individually in the sub-sections, are as follows.

- Two submissions objected to the proposed extension of the Quarry life.
- Six submissions raised concerns over the possibility of future modifications which would see the life of the Quarry extended further into the future.

5.3.23.2 Extended Quarry Life (QL)

Representative Comments

Given that it is now 10 years since the original application and 8.5 years since approval, it is significant that the quarry is still not operational. In fact the upgrade of the approved trucking route is still work in progress. This pace of development is not indicative of a project of state significance. The snail's pace of progress of this project should not be the basis for extending the life of the project and the continued impact on the local residents. The community have already been living under the cloud of the quarry for 10 years.

246738 Submission

Multiquip Quarrys (sic) made an unsubstantiated comment: "We have obtained approval to use larger capacity trucks." This raises questions. Which government dept gave approval? Which roads are covered? Larger capacity (not length? A greater capacity should shorten quarry life.

Additional Submission 3

Response

The Applicant notes there have been many reasons for the delay in commencement and production from the Quarry. It is notable that since the road upgrades have been progressively completed allowing for increased production from the Quarry.

As noted in Section 2.4, the Class 2 - Heavy Vehicle PBS Authorisation Permit No. 168751v4 to operate a 25.8m truck arrangement on the roads of the product delivery route has been issued by the NHVR (see **Appendix 2**) under the provisions of Section 143 of the *Heavy Vehicle National Law Act 2012*. The granting of the permit follows the obtainment of support from the road authorities (Goulburn Mulwaree Council and the Roads & Maritime Services [RMS]).

While the larger capacity trucks would allow for the extraction area to be developed more quickly, proposed increase in the extraction area has increased the overall resource to be extracted. While production of up to 580 000tpa is requested, it is likely that annual production rates could average less than this (400 00tpa to 500 000tpa) over the life of the Quarry.

At a production rate of 400 000tpa, the 16Mt resource would take 40 years to be extracted. On this basis, it is considered reasonable that the limits on PA 07_0155 are increased to reflect this.

5.3.23.3 Development Creep: Incremental Approvals Leading to Future Modifications and Greater Level of Impacts (FM)

Representative Comment(s)

I feel that this increase in hours is part of a plan to then lodge a further part 3A to increase the truck movements and extraction in the future. There's got to be a limit on the scope of this quarry to protect the integrity of the local area.

244814 Submission

Approval was previously granted for operation under particular terms that balanced the different interests involved but now the operator seeks to extend these terms and will continue to try and extend until they get everything that they want. This is a violation of the original position and means that anytime a community agrees to operation under certain terms they are then trampled over as operators seek to push ever further with development. It is what leads communities to completely rejecting all development as you can never trust what is approved to remain the deal with dishonourable developers.

241391 Submission

Response

The Applicant cannot discount future applications to modify PA 07_0155 on the basis that more effective methods of operation may be identified which the current approval does not allow. However, the Applicant notes that the modification proposed as part of this application would provide the required flexibility to supply markets in Sydney and Canberra for the foreseeable future.

The Applicant notes that the sand and basalt resource of the Ardmore Park property extend beyond the limits of the nominated extraction area. While as noted above, the modification proposed as part of this application would allow for many years of supply to the Sydney and Canberra construction markets.

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