GUNLAKE QUARRIES PTY LTD

Gunlake Quarry Project via Marulan

Proposed Modification to Condition 6(b) Schedule2 of Project Approval

Prepared by

Olsen Environmental Consulting Pty Limited

September 2014

Prepared by: Olsen Environmental Consulting Pty Limited
2 Parsons Street
WEST WOLLONGONG NSW 2500
PO Box 101
FIGTREE NSW 2525

Telephone: 02 4225 1164
Mobile: 0417 219 293
Email: davidolsen@ocg.net.au

Prepared for: Gunlake Quarries Pty Ltd
PO Box 1665
DOUBLE BAY NSW 1360

Telephone: 02 4841 1355
Fax: 02 4841 1366
Email: ed@gunlake.com.au

CONTENTS

Page

This page has intentionally been left blank

1 Introduction

Gunlake is seeking a minor modification to the wording of the Gunlake Quarry Project Approval.

The proposed modification does not seek to change the annual production, total production, life of project or trucking operational hours. Gunlake is only seeking to modifying the wording of Section 6(b) of Schedule 2 of the Project Approval in order to reflect what was proposed in the original Environmental Assessment (EA) and what was assessed in the Traffic Study that supported the EA.

The proposed modification will also make the wording of Condition 6(b) consistent with that in Condition 6(a).

2 Project Trucking Arrangements

2.1 Staging

There were two stages of the Gunlake Quarry project proposed

Stage 1. An average of 25 truck movements per day, using Brayton Road through to the Marulan Interchange.

Stage 2. Introduced when the average exceeded 25 truck movements per day and only after the bypass road connecting Brayton Road to Red Hills Road was constructed. The average number of truck movements per day would rise to 100 (i.e. would average 100). During Stage 2 there would continue to be an average 25 vehicles per day passing through to the Marulan Interchange as in Stage 1.

The Project has entered Stage 2 of development. Average numbers of trucks has exceeded 25 and the bypass road has been constructed and is operational.

2.2 Transport Routes

Figure 1 shows the transport routes to and from the Gunlake Quarry during Stage 2.

Loaded vehicles destined for markets south of the quarry travel along Brayton Road to the Hume Highway Interchange. They then access the south bound lanes of the Hume Highway through the Interchange. When these vehicles are returning empty to the quarry they proceed through the Interchange and make a left hand turn onto Red Hills Road and access the quarry via the bypass road and Brayton Road.

The bypass road was constructed by the quarry, but is now a public road. After construction of the bypass road, truck movements using the Brayton Road route were planned to continue at an average 25 per day for the life of the quarry (Refer Section 2.1.3 page 2-6 of the 2008 Project Environmental Assessment). This is necessary because southbound trucks will still need to use Brayton Road to access the Hume Highway interchange.

Loaded vehicles travelling to markets north of the quarry travel along the bypass road and access the Hume Highway north bound lanes. Trucks returning empty from the north pass through the Interchange and proceed to the Marulan South overpass. They use the overpass to access the north bound lanes of the Hume Highway. They then proceed north and make a left hand turn into Red Hills Road and travel along the bypass road and Brayton Road to access the quarry.

Council agreed and confirmed that the current contributions satisfy all of the requirements of the Project Approval to make contributions for road maintenance and upgrading costs in accordance with the Contributions Plan and the provisions in relation to public benefit (works-in-kind) associated with the Road Works.

3 Project Approval

Paragraph 6 of Schedule 2 of the Project Approval details the conditions relevant to approved truck activity. It states that truck movements shall not exceed:

(a) Stage 1 – 25 truck movements per day (averaged over one month) and maximum of 38 truck movements per day, and

(b) Stage 2 – 100 truck movements per day, including 25 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/George Street/Interchange underpass.

Gunlake are seeking to modify (b) to reflect the proposed trucking activity in the original EA and the traffic levels addressed in the original Traffic Study. The proposed modification would also make the wording of (b) to be consistent with that for (a).

The proposed modification is as follows:

"(b) Stage 2 – 100 truck movements per day (averaged over one month) with a maximum of 150 truck movements per day, including 25 truck movements per day (averaged over one month) and a maximum of 38 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/George Street/Interchange Underpass."

3.1 Transport Operating Hours

Gunlake does not seek to change the existing approved product transport operating hours. These are identified in Paragraph 3 of Schedule 3 of the Project Approval and are as follows:

Stage 2 Bypass Road. Monday to Saturday. 24 hours except 6.00pm Saturday to 2.00am Monday. None on Sundays and Public Holidays.

Stage 2 Brayton Road. Monday to Saturday 6.00pm to 7.00pm. None on Sundays and Public Holidays.

4 Potential Impact Assessment

In order to assess the likely impact associated with changing the wording of Section 6(b), Gunlake commissioned Transport and Urban Planning Pty Ltd (TAUP) to undertake a traffic study of the proposal. They also commissioned SLR Consulting Australia Pty Ltd (SLR) to assess any likely acoustic implications.

Full copies of their reports are appended.

Figure 1. Truck Transport Routes Stage 2

4.1 Traffic

TAUP noted that the proposed change in wording relates to Stage 2 of the Project and acknowledges that the approved traffic generation of 100 trucks per day is averaged over one month with peak days up to 150 truck movements per day.

They concluded that the impacts associated with 50 additional truck movements on some days on the local road network are relatively minor. The road network including all the intersections, can easily accommodate the higher number of product truck movements generated by the quarry, on some days, without any significant impact on or change to the level of service and vehicle delays.

4.2 Acoustic

SLR noted that the original assessment of potential off-site road traffic noise impacts was undertaken in accordance with the NSW Environmental Criteria for Road Traffic Noise. However, this guideline has been superseded by the requirements of the NSW Road Noise Policy and their Application Notes. SLR undertook their assessment for the proposed modification in accordance with the requirements of this more recent Policy and its Application Notes.

They concluded that the variation in quarry truck movements resulting from the proposed modification to Condition 6(b), Schedule 2 of the Project Approval will still clearly result in compliance with the traffic noise criteria for the affected road sections.

5 Conclusions

The proposed modification to the wording of Condition 6(b) will:

- Make it consistent with the wording of 6(a);
- Be consistent with the original Hallam Traffic assessment which addressed average truck numbers for Stage 2 of the Project; and
- Be able to be implemented without any adverse impacts on traffic or acoustic environments

Appendix 1.

Traffic Impact Assessment for Minor Modification to Wording of Gunlake Quarry Approval at Brayton Road Marulan.

August 2014

Transport and Urban Planning Pty Ltd

TRAFFIC IMPACT ASSESSMENT

FOR

MINOR MODIFICATION TO WORDING OF GUNLAKE QUARRY APPROVAL

AT

BRAYTON ROAD MARULAN

Ref. 14155r

29 August 2014

Prepared By

TRANSPORT & URBAN PLANNING PTY LTD
Traffic Engineering, Transport Planning
Road Safety & Project Management Consultants
5/90 Toronto Parade
P.O. Box 533
SUTHERLAND NSW 2232
Tel: (02) 9545-1411
Fax: (02) 9545-1556
Email: terry@transurbanplan.com.au

CONTENTS

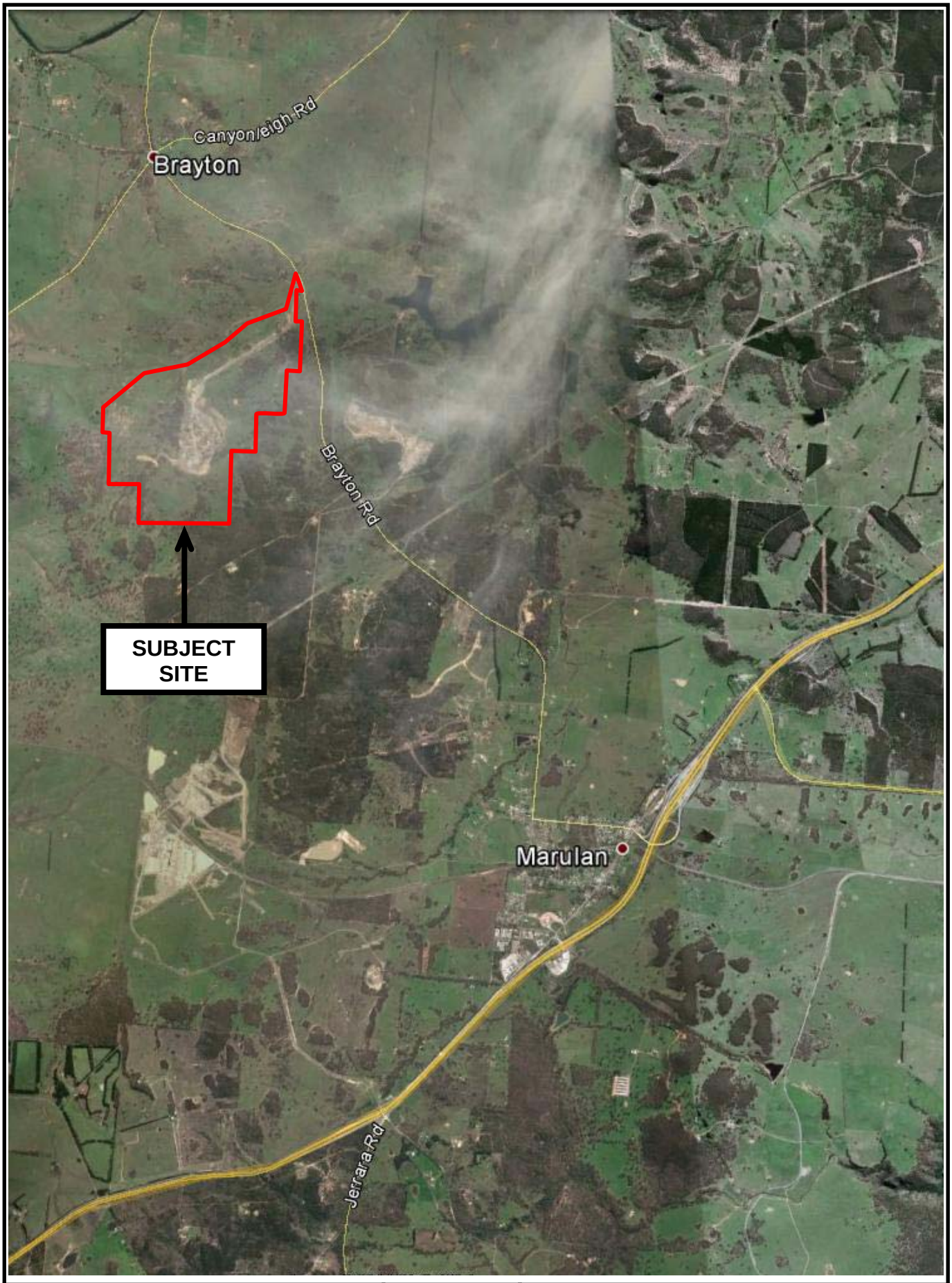
ILLUSTRATIONS

1.0 INTRODUCTION

Gunlake Quarries Pty Limited (Gunlake) owns and operates the Gunlake Quarry at Marulan in the southern highlands of NSW. Gunlake Quarry operates under Project Approval issued in September 2008 and modified in May 2013.

The Quarry is located in Brayton Road at Marulan. **Figure 1** refers.

Gunlake is seeking a minor modification to the wording of the approval to clarify the transport arrangements.



TRANSPORT AND URBAN PLANNING

TRAFFIC, TRANSPORT & PROJECT MANAGEMENT CONSULTANTS

5/90 Toronto Parade, Sutherland NSW 2232
Phone 02 9545 1411 Fax 02 9545 1556

tupa@tpgi.com.au www.transurbanplan.com.au

N

NOT TO SCALE

FIGURE 1

GUNLAKE QUARRY
MARULAN

SITE LOCATION

JOB NO. 14155

2.0 PROPOSED MODIFICATION OF WORDING TO PROJECT APPROVAL

2.1 Proposed Modification

Gunlake is seeking a minor modification to the wording of the Gunlake Quarry Project Approval.

The proposed modification does not seek to change the annual production, total production, life of project or trucking operational hours. Gunlake is only seeking to modifying the wording of Section 6(b) of Schedule 2 of the Project Approval in order to reflect what was proposed in the original Environmental Assessment (EA) and what was assessed in the Traffic Study[1] that supported the EA.

The proposed modification will also make the wording of Condition 6(b) consistent with that in Condition 6(a).

2.2 Project Trucking Arrangements

Staging

There are two stages of the Gunlake Quarry project.

Stage 1. An average of 25 truck movements per day, using Brayton Road through to the Marulan Interchange.

Stage 2. Introduced when the average exceeded 25 truck movements per day and only after the bypass road connecting Brayton Road to Red Hills Road was constructed. The average number of truck movements per day would rise to 100 (i.e. would average 100). During Stage 2 there would continue to be an average 25 vehicles per day passing through to the Marulan Interchange as in Stage 1.

The Project has entered Stage 2 of development. Average numbers of trucks has exceeded 25 and the bypass road has been constructed and is operational.

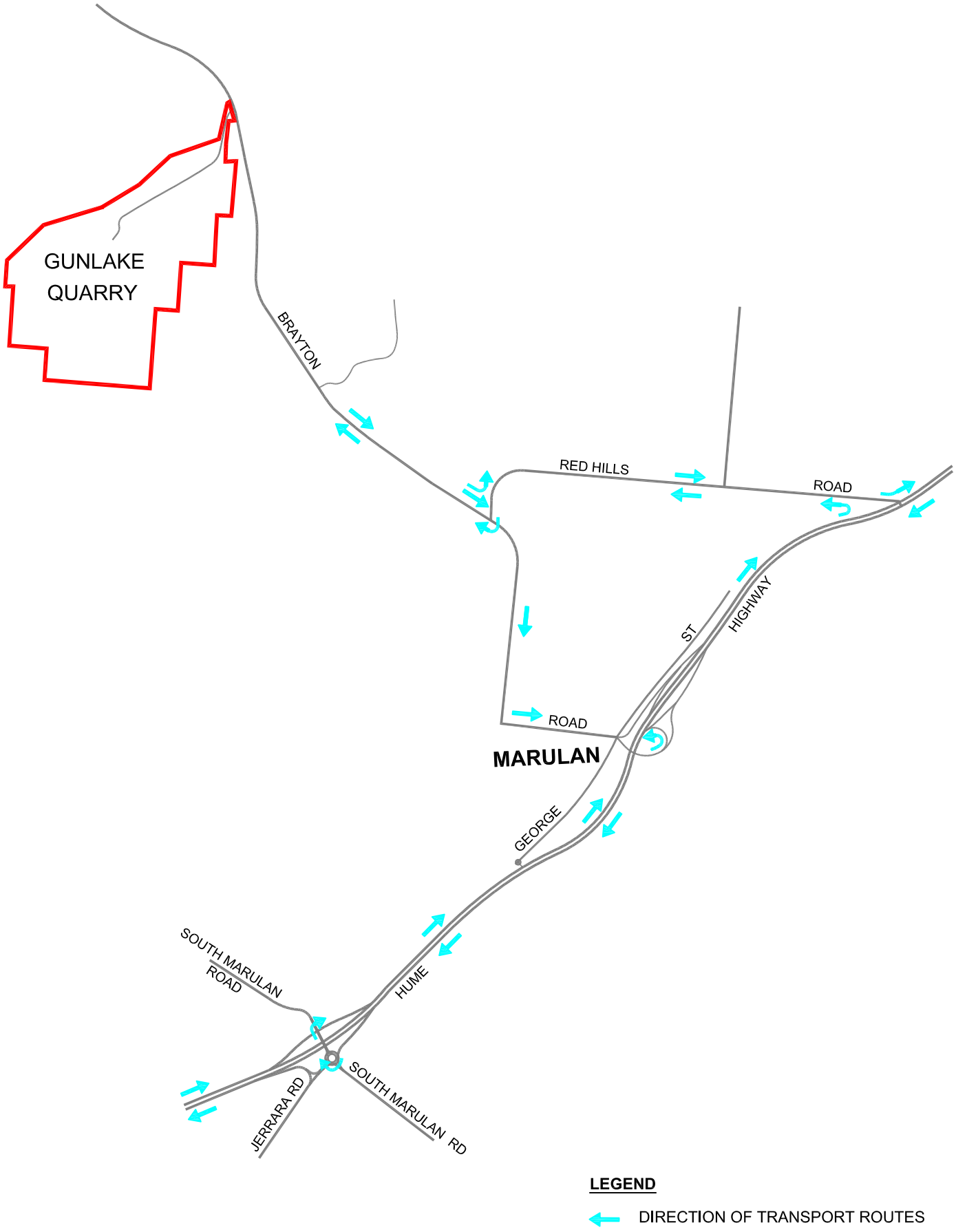
2.3 Transport Routes

Figure 2 shows the transport routes to and from the Gunlake Quarry during Stage 2.

Trucks destined for markets south of the quarry travel along Brayton Road to the Hume Highway Interchange. They then access the southbound lanes of the Hume Highway through the Interchange. When these vehicles are returning empty to the quarry they proceed through the Interchange and make a left hand turn onto Red Hills Road and access the quarry via the bypass road and Brayton Road.

The bypass road was constructed by the quarry. After construction of the bypass road, truck movements using the Brayton Road route were planned to continue at an average 25 per day for the life of the quarry (Refer Section 2.1.3 page 2-6 of the 2008 Project Environmental Assessment). This is necessary because southbound trucks will still need to use Brayton Road to access the Hume Highway interchange.

[1]Christopher Hallam and Associates Pty Ltd Transport Study of Proposed Gunlake Quarry, Brayton Road, Marulan. February 2008.



LEGEND

DIRECTION OF TRANSPORT ROUTES

TRANSPORT AND URBAN PLANNING

TRAFFIC, TRANSPORT & PROJECT MANAGEMENT CONSULTANTS

5/90 Toronto Parade, Sutherland NSW 2232
Phone 02 9545 1411 Fax 02 9545 1556
tupa@tpg.com.au www.transurbanplan.com.au

N

NOT TO SCALE

FIGURE 2

GUNLAKE QUARRY
MARULAN

TRANSPORT ROUTES

JOB NO. 14155

Trucks travelling to markets north of the quarry travel along the bypass road and access the Hume Highway northbound lanes. Trucks returning from the north pass through the Interchange and proceed to the Marulan South overpass. They use the overpass to access the northbound lanes of the Hume Highway. They then proceed north and make a left hand turn into Red Hills Road and travel along the bypass road and Brayton Road to access the quarry.

Council agreed and confirmed that the current contributions satisfy all of the requirements of the Project Approval to make contributions for road maintenance and upgrading costs in accordance with the Contributions Plan and the provisions in relation to public benefit (works-in-kind) associated with the Road Works.

2.4 Project Approval

Paragraph 6 of Schedule 2 of the Project Approval details the conditions relevant to approved truck activity. It states that truck movements shall not exceed:

(a) Stage 1 – 25 truck movements per day (averaged over one month) and maximum of 38 truck movements per day, and

(b) Stage 2 – 100 truck movements per day, including 25 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/George Street/Interchange underpass.

Gunlake are seeking to modify (b) to reflect the proposed trucking activity in the original EA and the traffic levels addressed in the original Traffic Study. The proposed modification would also make the wording of (b) to be consistent with that for (a) and match the actual truck numbers using the road network.

The proposed modification is as follows:

"(b) Stage 2 – 100 truck movements per day (averaged over one month) with a maximum of 150 truck movements per day, including 25 truck movements per day (averaged over one month) and a maximum of 38 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/George Street/Interchange Underpass."

2.5 Transport Operating Hours

Gunlake does not seek to change the existing approved product transport operating hours. These are identified in Paragraph 3 of Schedule 3 of the Project Approval and are as follows:

- **Stage 2 Bypass Road.** Monday to Saturday. 24 hours except 6.00pm Saturday to 2.00am Monday. None on Sundays and Public Holidays.

- **Stage 2 Brayton Road.** Monday to Saturday 6.00am to 7.00pm. None on Sundays and Public Holidays.

3.0 ASSESSMENT OF IMPACTS OF CHANGES TO WORDING OF CONSENT CONDITIONS

Stage 2 approval permits the quarry to generate 100 truck movement per day.

The change in the wording retains the 100 truck movements per day as averaged over one (1) month, but also recognises that quarry's have above average days, as well as below average days. By setting a peak day of 150 truck movements per day, the condition will recognise a maximum day in terms of truck numbers, and acknowledges that transportation on any given day is sales driven and can fluctuate.

The Hallam report (Tables 2.3 and 2.4) acknowledges average daily two way volumes of 373vph on Brayton Road, near Jonniefields Quarry (north of the Bypass) and two way hourly volumes at a maximum of 30vph (vehicles per hour).

In the section of Brayton Road, east of Wollondilly Street (i.e. south of the Bypass) average daily volumes were 864vph and two way hourly volumes were a maximum of 77vph. (Tables 2.5 and 2.6 in Hallam's report).

Average daily volumes in Red Hills Road west of the Hume Highway were 65vpd and hourly volumes were a maximum of 9vph. (Tables 2.10 and 2.11 in Hallam's report).

Hallam's analysis concluded that the traffic generated by Stage 2 of the Quarry, based on an average of 100 truck movements per day, would have acceptable impacts on the road network and intersections, given the relatively low hourly volumes of the quarry trucks and other vehicles using the road network.

In terms of road and intersection capacity, an additional 50 truck movements per day on some days (i.e. 150 truck movements per day in lieu of 100 truck movements) would not have a significant impact, on any part of the road network.

There would be no change from the Stage 1 approval to the truck numbers using the section of Brayton Road between the Bypass and the intersection of Brayton Road/George Street/Interchange underpass, which would remain as 25 truck movements per day, averaged over a month and a maximum of 38 truck movements per day on a peak day. The impacts would be the same on this section of Brayton Road as for the Stage 1 approval.

The remainder of the trucks on a peak day would use the Bypass road.

Intersection capacity and road capacity are measured/analysed for periods of 1 hour, or less, hence the term peak hour. Tables 3.1 and 3.2 of Hallam's report refer to Level of Service Criteria for Intersections and Environmental Capacity Performance Standards, both of which are based on the analysis of hourly traffic volumes.

The additional trucks, over a full day, would equate to an additional 2 - 3 truck movements per hour and would not affect intersection capacity or safety at any of the intersections examined in the Hallam report.

As these trucks would be using the Red Hills Road Truck Bypass Route, which has been constructed as a heavy vehicle bypass route for use by the quarry trucks and as an alternative to some of the roads in the Marulan township, the impacts associated with these truck movements would be mostly limited to the bypass and the intersections along this road.

In concluding, in terms of traffic impacts, I do not consider that there is a significant difference between an average of 100 truck movements per day, (as averaged over one month) which could also result into up to 150 truck movements on some days using the road network.

The impacts for the higher figure of 150 truck movements are relatively minor and would not result in a significant change to the level of Service and or vehicle delay on the road network, or at any intersections.

4.0 CONCLUSIONS

This report has examined the impacts associated with a proposed change of wording of the approval to Gunlake Quarry to clarify the transport arrangements.

The change in wording will make the wording of condition 6(b) consistent with that in condition 6(a).

The change in wording relates to the Stage 2 operation of the Quarry and acknowledges that the approved traffic generation of 100 trucks per day is averaged over one month with peak days up to 150 truck movement per day.

The impacts associated with 50 additional truck movements on some days on the local road network are considered to be relatively minor. The road network including all the intersections, can easily accommodate the higher number of product truck movements generated by the quarry, on some days, without any significant impact on or change to the level of service and vehicle delays.

Appendix 2

Letter Re Consent Modification – Truck Movements Gunlake Quarry Marulan.

September 2014 SLR Consulting Australia Pty Ltd

1 September 2014

610.05106.00100 Truck Movements 20140901

Gunlake Quarries
PO Box 1665
DOUBLE BAY NSW 1360

Attention: Mr Ed O'Neil

Dear Ed

Consent Modification - Truck Movements
Gunlake Quarry, Marulan

Condition 6(b), Schedule 2 of the current Project Approval for Gunlake Quarry, Marulan states that:

> *"Truck movements shall not exceed:"*
>
> *"(b) Stage 2 - 100 truck movements per day, including 25 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/ George Street/Interchange underpass."*

However, a modification to the wording is now sought for the Condition 6(b) to read:

> *"(b) Stage 2 - 100 truck movements per day (averaged over one month) with a maximum of 150 truck movements per day, including 25 truck movements per day on Brayton Road between the bypass road and the intersection of Brayton Road/ George Street/Interchange Underpass."*

In relation to the allowable numbers of quarry truck movements on the respective roads/road sections, based on traffic noise levels, Section 2.3.3, Part 4, Volume III of the Environmental Assessment, *Construction, Operational and Transportation Noise and Blasting Impact Assessment* ("Noise Impact Assessment"), states that:

> *"When constructed, all traffic for northern markets will use this [bypass] route. Returning trucks from the north will not turn right at the Hume Highway to enter Red Hills Road, but will continue to the Marulan exit near the truck checking station, pass under the Highway, negotiate a new roundabout at the intersection of Brayton Road and George Street and return via the Highway to turn left into Red Hills Road.*
>
> *Trucks travelling south will continue to use Brayton Road to the Hume Highway interchange but returning trucks will turn left into Red Hills Road. Truck movements using the Brayton Road route will continue to be an average of 25 per day for the life of the quarry."*

It is now understood however, that the returning trucks from the north do not turn right at the Hume Highway to enter Red Hills Road (a public road), but continue past Marulan to the South Marulan overpass to enter the northbound lane of the Hume Highway and turn left into Red Hills Road.

SLR Consulting Australia Pty Ltd 2 Lincoln Street Lane Cove NSW 2066 Australia
(PO Box 176 Lane Cove NSW 1595 Australia) T: +61 2 9427 8100 F: +61 2 9427 8200
E: sydney@slrconsulting.com www.slrconsulting.com
ABN 29 001 584 612

Consequently, the only residences potentially affected by noise from changes in the daily quarry truck movements are those adjacent to the section of Brayton Road between the quarry entrance and the bypass road and the residence adjacent to Red Hills Road.

The assessment of potential off-site road traffic noise impacts in the Noise Impact Assessment was originally undertaken in accordance with the *NSW Environmental Criteria for Road Traffic Noise* [(ECRTN) EPA, 1999]. However, this guideline has been superseded by the requirements of *the NSW Road Noise Policy* [(RNP) DECCW, 2011] and the RNP *Application Notes* (EPA, 2013) which provides non-mandatory procedures for setting acceptable L_{Aeq} noise levels on arterial/sub-arterial and local roads as well as guidelines for assessing noise impacts from off-site traffic.

The RNP identifies noise "assessment" and "relative increase" criteria. These criteria aim to maintain an acceptable level of road traffic noise associated with new road projects, road redevelopment projects and traffic-generating developments.

The RNP adopts a new classification scheme for assessing noise impacts on an existing road network. In accordance with the RNP, previously classified collector roads are now classified as sub-arterial roads. The RNP retains the classification of "principal haulage route" recognising that they can carry a different level and mix of traffic to local roads. Hence, the applicable criteria for a local road (ie Brayton Road) classified as a "principal haulage route" is the same as a sub-arterial road as presented in **Table 1**. The corresponding criteria for "local roads" (eg Red Hills Road/Bypass Road) are also presented in **Table 1**.

Table 1 Road Traffic Noise Assessment Criteria for Residential Land Uses (dBA re 20 µPa)

Road	Type of Project and Land Use	Total Traffic Noise Criteria[1]	Relative Increase Criteria
Brayton Road	Land use developments generating additional traffic on sub-arterial roads and local roads classified as a principal haulage route	Daytime 60 $L_{Aeq(15hour)}$	Existing $L_{Aeq(15hour)}$ plus 12 dBA
		Night-time 55 $L_{Aeq(9hour)}$	Existing $L_{Aeq(9hour)}$ plus 12 dBA
Red Hills Road/ Bypass Road	Existing residences affected by addition traffic on existing local roads generated by land use developments	Daytime 55 $L_{Aeq(1hour)}$	Not applicable
		Night-time 50 $L_{Aeq(1hour)}$	

Note 1: Daytime 0700 hours to 2200 hours, Night-time 2200 hours to 0700 hours.

It is noted that the NSW RNP Application Notes state that the relative increase criteria are primarily intended to protect existing quiet areas, being areas that are 12 dB or more below the relevant noise assessment criterion that applies day or night, from excessive changes in amenity due to noise from additional traffic.

In relation to situations where exceedances of the road traffic noise assessment criteria are predicted, the RNP relevantly provides:

> *Where existing traffic noise levels are above the noise assessment criteria, the primary objective is to reduce these through feasible and reasonable measures to meet the assessment criteria. A secondary objective is to protect against excessive decreases in amenity as the result of a project by applying the relative increase criteria.*
>
> *In assessing feasible and reasonable mitigation measures, an increase of up to 2 dB represents a minor impact that is considered barely perceptible to the average person……*

For existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB above that of the corresponding 'no build option'.

Based on the existing traffic flows and traffic mix presented in the Traffic Count Study of Brayton Road, Red Hills Road and the Interchange Underpass, Marulan prepared by CFE Information Technologies (May/June 2007), **Table 2** and **Table 3** summarise the existing daytime and night-time traffic flows in Brayton Road (between the quarry entrance and Red Hills Road /Bypass Road) and on Red Hills Road/Bypass Road respectively.

Table 2 Existing Traffic Movements: Brayton Road - South of Proposed Quarry

Period	5 Day Average	
	Light	**Heavy**
Day (0700-2200 hours)	240	117
Night (2200-0700 hours)	33	9

Table 3 Existing Traffic Movements: Red Hills Road

Period	Maximum Hourly	
	Light	**Heavy**
Day (0700-2200 hours)	5 (1200-1300 hours)	6
Night (2200-0700 hours)	2 (0600-0700 hours)	1

As in the Noise Impact Assessment, the US Environment Protection Agency's method was subsequently used for the prediction of the L_{Aeq} traffic noise levels for the offset distances of the closest residences adjacent to the subject roads.

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, passby 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.

The daytime and night-time traffic noise level predictions for Brayton Road, south of the quarry entrance, at the closest residential receiver to the road are presented in **Table 4**. This residence is located 71 m from Brayton Road. Also presented in **Table 4** are the appropriate traffic noise criteria and the maximum allowable truck movements (passbys), based on the NSW RNP criteria.

Table 4 Predicted Existing $L_{Aeq(15hour)}$ Day and $L_{Aeq(9hour)}$ Night-time Traffic Noise Levels South of Proposed Quarry Entrance - 71 m from Road Centre

	Existing Traffic Noise Level	Traffic Noise Criterion	Maximum Allowable Average Hourly Truck Movements
Day - $L_{Aeq(15hour)}$ (0700-2200 hours)	48.1 dBA	60.0 dBA	167
Night - $L_{Aeq(9hour)}$ (2200-0700 hours)	40.l2 dBA	52.2 dBA	28

Similarly, **Table 5** presents the corresponding traffic noise level predictions, criteria and allowable truck numbers for Red Hills Road/Bypass Road at the single adjacent residence, offset approximately 350 m from the road.

Table 5 Predicted Existing $L_{Aeq(1hour)}$ Traffic Noise Levels Red Hills Road/Bypass Road - 350 m from Road Centre

	Existing Traffic Noise Level	Traffic Noise Criterion	Maximum Allowable Average Hourly Truck Movements
Day - $L_{Aeq(1hour)}$ (0700-2200 hours)	35.4 dBA	55.0 dBA	630
Night - $L_{Aeq(1hour)}$ (2200-0700 hours)	28.5 dBA	50.0 dBA	200

Based on the above, the variation in quarry truck movements resulting from the proposed modification to Condition 6(b), Schedule 2 of the Project Approval, will still clearly result in compliance with the traffic noise criteria for the affected roads sections.

The proposed wording of Condition 6(b) is also consistent with the wording of the existing Condition 6(a).

In relation to the night-time restrictions on transport operating through Marulan, the proposed Condition 6(b), Schedule 2 of the Project Approval limits truck movements on Brayton Road between the bypass road and the intersection of Brayton Road/George Street/Interchange Underpass to 25 movements per day. Further, Condition 3 (Table 2), Schedule 3 of the Project Approval limits product transportation during Stage 2 on "Brayton Road to Marulan" to the hours of 0600 hours to 0700 hours Monday to Saturday with no transportation on Sundays.

Yours sincerely

Dick Godson
Technical Director