ANNUAL ENVIRONMENTAL MANAGEMENT REPORT (AEMR)

KARUAH QUARRY

KARUAH, NSW

AEMR Period –

16 January 2022 – 15 January 2023

Prepared by Hunter Quarries Pty Ltd

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

AEMR	Annual Environmental Management Report
AQMP	Air Quality Monitoring Program
CCC	Community Consultative Committee
DA	Development Application
DDG	Dust Deposition Gauge
DPE	NSW Department of Planning and Environment (former Department of Planning Industry and Environment)
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMP	Environmental Monitoring Program
EMS	Environmental Management Strategy
EPL	NSW Environment Protection Licence
Ha	Hectare
HQPL	Hunter Quarries Pty Ltd
km	Kilometre
L	Litre
LDP	Licenced Discharge Point
MCC	MidCoast Council
NPWS	NSW National Parks and Wildlife Service, now part of Environment, Energy and Science
POEO Act	Protection of the Environment Operations Act 1997
RAR	Response to Audit Recommendations
RFS	NSW Rural Fire Service
SWMP	Site Water Management Plan
tpa	tonnes per annum

i PURPOSE OF THE REPORT

Hunter Quarries Pty Ltd (HQPL) has prepared this report which fulfils the Annual Environmental Management Report (AEMR) requirement of the Development Consent (DA 265-10-2004), Schedule 4 Condition 5. However, this AEMR has been prepared generally in accordance with the Department of Planning and Environment (DPIE) 2015 Annual Review Guidelines. As such, HQPL acknowledges that while this document is an AEMR as required by the Development Consent, it has been prepared to be consistent with the format of an Annual Review.

*This AEMR serves to cover the reporting period from the **16 January 2022 to 15 January 2023**.*

This report provides specific detail on the project including a summary of environmental monitoring data and environmental performance during the reporting period. All environmental data in full can be supplied at request.

Name of Operation	Karuah Quarry
Name of Operator	Hunter Quarries Pty Ltd
Development Consent / Project Approval #	DA 265-10-2004
Name of holder of Development Consent / Project Approval	Hunter Quarries Pty Ltd
Mining Lease #	None
Water Licences	None
AEMR start date	16 January 2022
AEMR end date	15 January 2023

I, Shane Burton, certify that this AEMR is a true and accurate record of the compliance status of Karuah Hardrock Quarry for the period 16 January 2022 to 15 January 2023 and that I am authorised to make this statement on behalf of Hunter Quarries Pty Ltd.

Note.

The AEMR is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	Shane Burton
Title of authorised reporting officer	Quarry Manager
Signature of authorised reporting officer	
Date	29/03/2023

1.0 STATEMENT OF COMPLIANCE

Tables 1 - 3 outline the compliance status of the quarry operations at the end of the reporting period within the relevant approval conditions.

Table 1 - Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Environment Protection Licence (No. 11569).	YES
Development Consent (DA265-10-2004)	NO

Table 2 - DPE Compliance Status Key

Risk level	Colour code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Admin NC	Non-Compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Table 3 - Non-Compliance

Relevant Approval	Condition #	Condition Description (Summary)	Compliance Status	Site Comment/Where Addressed in AEMR
DA265-10-2004	Condition 26 of Schedule 3	**Implementation of Water Management Plan**	Admin Non - Compliance	Continued non-compliance from 2019 IEA findings, however SWMP has been submitted for approval. The Site Water Management Plan was revised in 2020 and has been submitted to DPE for approval.

Relevant Approval	Condition #	Condition Description (Summary)	Compliance Status	Site Comment/Where Addressed in AEMR
DA265-10-2004	Condition 28 of Schedule 3	**Implementation of Water Management Plan**	Admin Non - Compliance	Continued non-compliance from 2019 IEA findings. The Site Water Management Plan continued to be revised in 2022. Approval will be sought from the DPE
DA265-10-2004	Condition 36 of Schedule 3	**Bushfire Management Plan approval**	Admin Non - Compliance	Continued non-compliance from 2019 IEA findings. The Bushfire Management Plan continued to be revised in 2022. It is anticipated that the Bushfire Management Plan will be approved by DPE during 2023 reporting period.
DA265-10-2004	Condition 4 of Schedule 4	**Environmental Monitoring Program update**	Admin Non - Compliance	Continued non-compliance from 2019 IEA findings. The EMP continued to be revised in 2022. It is anticipated that the EMP will be approved by DPE during 2023 reporting period.

2.0 INTRODUCTION

This Annual Environmental Management Report (AEMR) provides detail on the reporting period from the ***16 January 2022 to 15 January 2023*.** The AEMR period covers the same period as the Environment Protection Licence (EPL) Annual Return period.

2.1 Project Overview

The MidCoast Council (MCC) granted conditional Development Consent for a hard rock quarry and crushing plant at Karuah on 3 December 1997. Hunter Quarries Pty Limited (HQPL) purchased the site from Mountain Industries in 2002 and has since operated a hard rock quarry at the site, known as Karuah Quarry. The material extracted at the quarry is andesite which is a hard, blue rock used for various purposes such as road base material, construction aggregate, aggregate used for concrete batching, drainage works, fill, landscaping and other uses.

The site is contained wholly within the MCC Area and is located adjacent to the Karuah East Quarry, the Karuah Red Quarry and the Pacific Highway. It is approximately 4 kilometres (km) north of the Karuah town centre.

Development Consent (DA 265 – 10 – 2004) for the quarry's proposed expansion was granted on the 3 June 2005 by the former Minister for Infrastructure, Planning and Natural Resources. **Figure 1** outlines the regional context of the site. **Figure 2** shows the location of the site including the Environmental Protection Licence (EPL) boundary, lot and DP's, monitoring locations and disturbance footprint.

A 16 hectare (ha) conservation offset area was established on a southern portion of Lot 12.

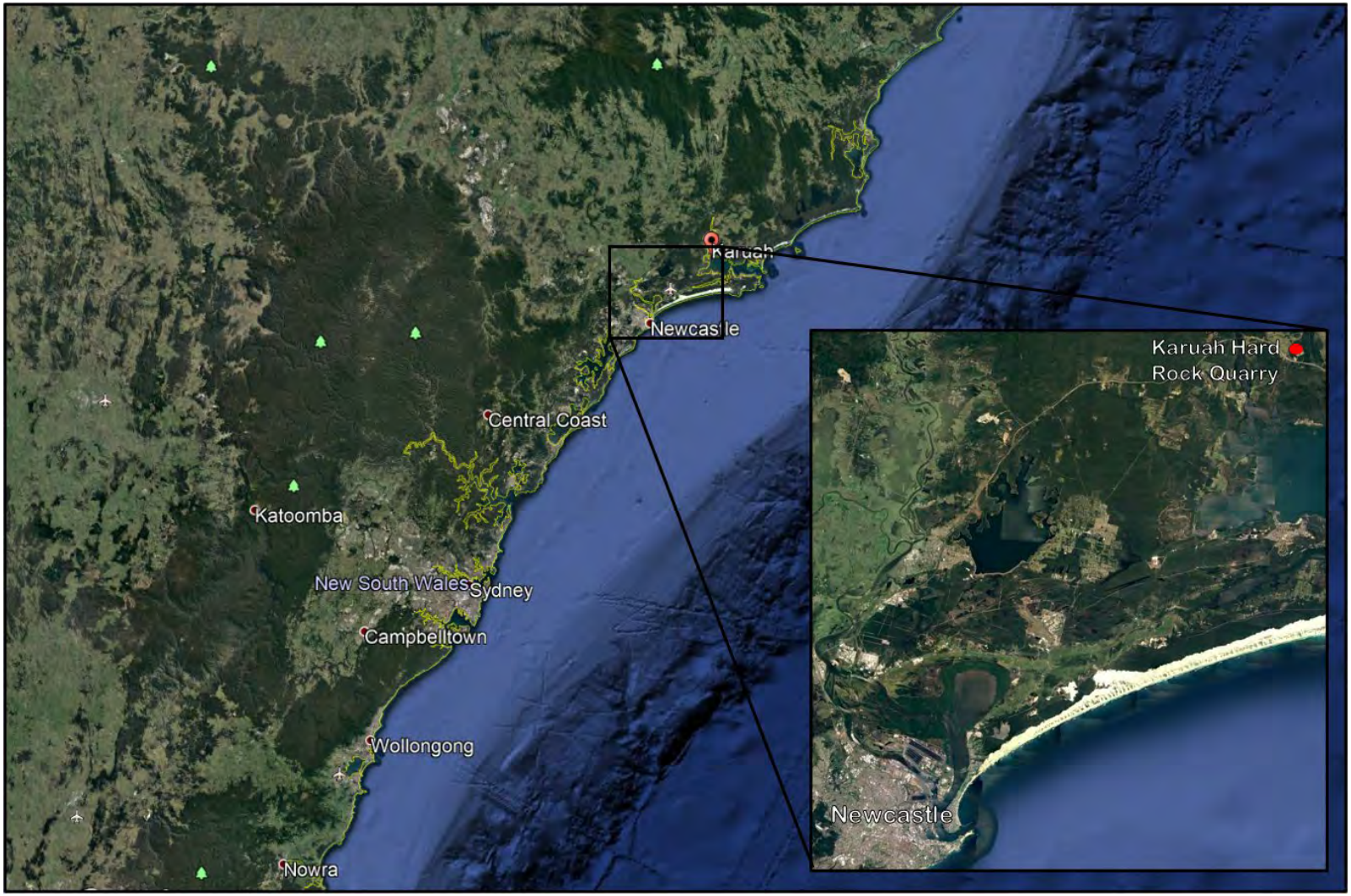


Figure 1 – Karuah Quarry Regional Locality

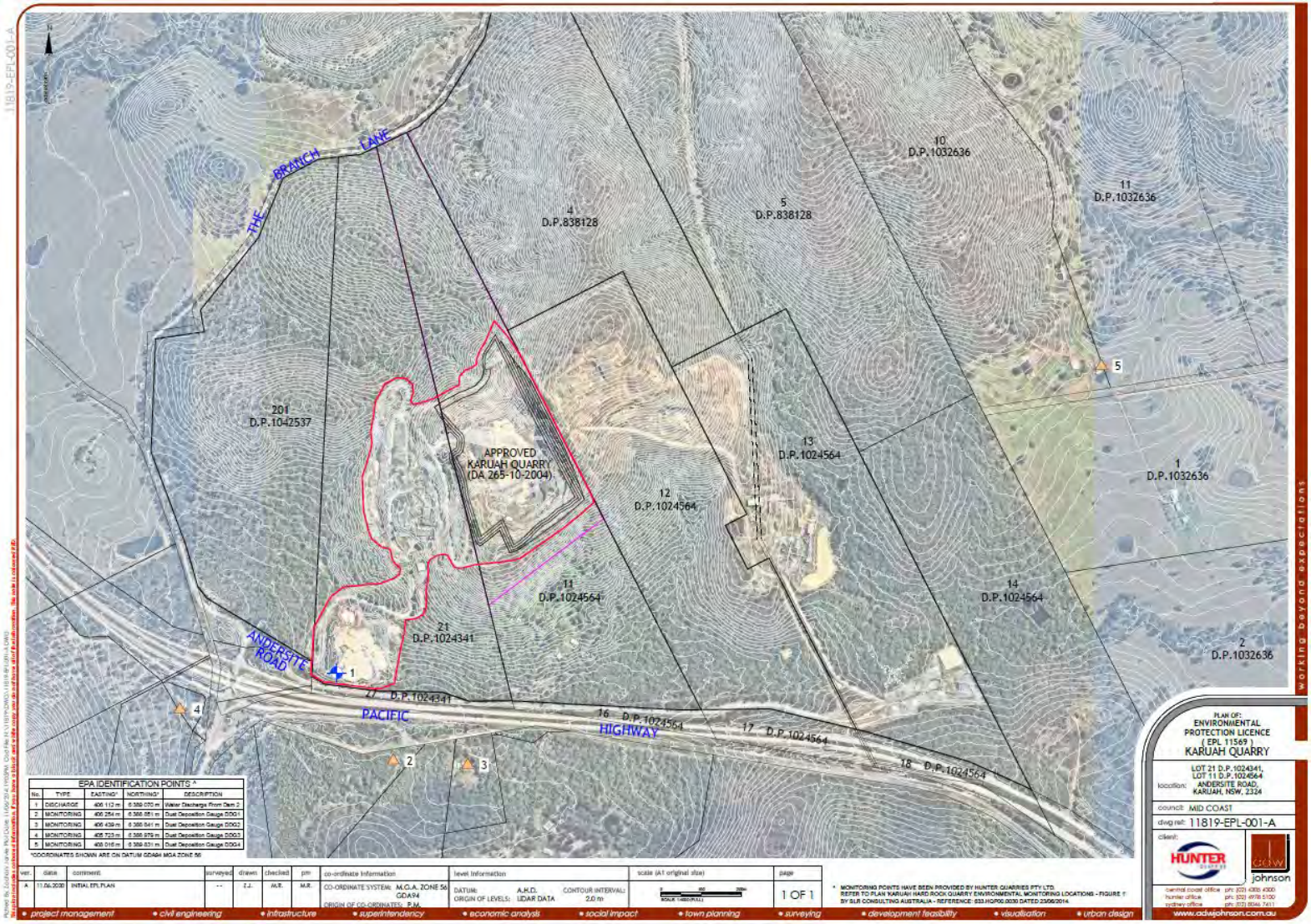


Figure 2 - Karuah Quarry Environment Protection License Figure

3.0 APPROVALS

HQPL is required to hold relevant approvals for the quarrying operation and these are detailed in **Table 4**.

Table 4 - Current Consents and Licences

Instrument	Date of Issue	Date of Expiration	Comments
Development Consent (DA265-10-2004)	3 June 2005	3 June 2027	DA 265-10-2004 will lapse 22 years after the approval date 03 June 2005. See **Appendix 1**
Environment Protection Licence (No. 11569).	30 June 2005	N/A	The EPL is a requirement of *the Protection of the Environment Operations Act* (PoEO Act) *1997*. See **Appendix 2**

Environment Protection Licence (EPL) 11569 covers activities at Karuah Quarry. **Table 5** outlines the licensing limits for production and materials handling.

Table 5 - EPL Fee-Based Activity

EPL Fee-based Activity	Current Scale (tpa)
Crushing, Grinding or Separating	> 100,000 – 500,000 t processed
Land-based extractive activity	> 100,000 – 500,000 t obtained

There were no modifications, amendments, or variations to DA265-10-2004 during the reporting period.

There were no variations of EPL 11569 during the reporting period.

3.1 Consent Conditions for Reporting in the AEMR

Table 6 details the relevant conditions in Development Consent (DA 265-10-2004) that must be reported annually in the AEMR, and the respective section(s) in this document where these consent conditions are addressed.

Table 6 - Checklist for AEMR Reporting

Condition Number	Condition Requirement for AEMR	Document Section
Schedule 3 Condition 23	*The Applicant shall include a progress report on the implementation and performance of the Flora and Fauna Management Plan and the Conservation Offset Strategy in the AEMR.*	Section 6.5
Schedule 3 Condition 29 (c)	*The Applicant shall include a progress report on the re-vegetation and maintenance of the visual bund in the AEMR, to the satisfaction of the Director General.*	Section 7.1
Schedule 3 Condition 34 (d)	*The Applicant shall report on waste management and minimisation in the AEMR to the satisfaction of the Director-General.*	Section 6.7
Schedule 3 Condition 37 (b)	*The Applicant shall include a copy of this (production) data in the AEMR.*	Section 4.5

Condition Number	Condition Requirement for AEMR	Document Section
Schedule 3 Condition 41	*The Applicant shall include a progress report on the Rehabilitation Management Plan in the AEMR.*	Section 7
Schedule 4 Condition 5	*The Applicant shall prepare and submit an AEMR to the Director-General and the relevant agencies. This report must address:* *a) identify the standards and performance measures that apply to the development;*	Section 3 and 6
	b) describe the works carried out in the last 12 months;	Section 4
	c) describe the works that will be carried out in the next 12 months;	Section 4.8 and 11
	d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;	Section 8.3
	e) include a summary of the monitoring results for the development during the past year;	Section 6.9
	f) include an analysis of these monitoring results against the relevant: • *impact assessment criteria;* • *monitoring results from previous years;* • *predictions in the EIS;*	Section 6
	g) identify any trends in the monitoring results over the life of the development;	Section 6
	h) identify any non-compliance during the previous year; and	Section 10
	i) describe what actions were, or are being taken to ensure compliance.	Section 11

3.2 DPE Feedback (2021 AEMR)

HQ have not yet received feedback from DPE in response to the submission of the 2021 AEMR.

4.0 OPERATIONS SUMMARY

The following section briefly describes the general operation and environmental performance of the Karuah Quarry operations during this AEMR period. Quarry operations continued within the already approved quarry footprint.

4.1 Exploration

No exploration activities took place during this reporting period.

4.2 Land Preparation

During the reporting period no land preparation occurred.

4.3 Construction Activities

There were no construction activities undertaken at Karuah Quarry during the AEMR period.

4.4 Quarry Operations

The current operations involve progressive drilling and blasting, which is followed by crushing and screening to produce the required materials. Some weathered material is extracted by ripping, which eliminates the need for additional blasting. The quarry currently produces a range of crushed natural rock product for use in landscaping, local road making and construction projects.

Quarrying activities are permitted from 7am to 6pm Monday to Friday and from 7am to 1pm on Saturday. Maintenance activities are permitted 7 days a week between 7am to 6pm.

4.4.1 Equipment

During the reporting period the following equipment was utilised for the extraction of the hard rock material:

- Excavator x 1;
- Mobile jaw crusher;
- Mobile cone crusher;
- Mobile screen;
- Mobile stacker;
- Front end loader x 2;
- 13,000 litre (L) watercart;
- Onsite Haul trucks x 2; and
- Posi-traction mini excavator.

4.5 Production of Material

This AEMR is required to report on the production operations of the quarry and these are summarised in **Table 7.**

Table 7 - Monthly Production Summary (tonnes)

Month	Monthly total (tonnes)
January 16- January 31, 2022	0
February	4,301
March	0
April	0
May	0
June	15,075
July	14,091
August	25,840
September	13,114
October	20,197
November	24,794
December	18,270
January 1 - January 15, 2023	12,833
Total production for the AEMR period	**148,515**

The site was below the production criteria in the Development Consent (limit 500,000 tonnes annually).

Table 8 - Production and Operations Summary

Material	Approved Limit (Specify Source)	Previous Reporting Period 2021	This Reporting Period (actual) - 2022	Next Reporting Period (forecast) - 2023
Waste Rock/Overburden*	0	0	0	0
Rock Product	500,000 tonnes (Schedule 1, DA 265-10-2004)	119,833	148,515	200,000
Saleable Product (Transported Offsite)	500,000 tonnes (Schedule 1, DA 265-10-2004)	119,833	148,515	200,000

Material	Approved Limit (Specify Source)	Previous Reporting Period 2021	This Reporting Period (actual) - 2022	Next Reporting Period (forecast) - 2023
Hours of Operation	Monday – Friday 7am to 6pm Saturday 7am to 1pm Sunday and public holidays no work at any time Minor maintenance works on plant and machinery may be carried out 7 days a week and public holidays 7am to 6pm (Schedule 3, condition 2, DA 265-10-2004)	No change	No change	No change

Note: In the early stages of operation at Karuah Quarry, overburden was generated to enable the formation of the pit. No overburden was generated in the AEMR period with quarrying of 'hardrock' only.

Table 9 outlines production since 2005 at the Karuah Quarry.

Table 9 - Production and Operations Summary Since 2005

AEMR Period	Production (tonnes)
1 January, 2005 – 31 July, 2006 (19 month period)	595,898
1 August, 2006 – 31 July 2007	338,528
1 August, 2007 – 31 July 2008	494,117
1 August, 2008 – 31 July 2009	779,006
1 August, 2008 – 31 July 2009	460,294
1 August, 2010 to 15 January, 2012 (16 month period)	637,234
16 January, 2012 to 15 January, 2013	460,148
16 January, 2013 to 15 January, 2014	458,040
16 January, 2014 to 15 January, 2015	442,831
16 January, 2015 to 15 January, 2016	412,779
16 January, 2016 to 15 January, 2017	497,077
16 January, 2017 to 15 January, 2018	498,752
16 January, 2018 to 15 January, 2019	459,059
16 January, 2019 to 15 January, 2020	456,990
16 January, 2020 to 15 January, 2021	95,648
16 January, 2021 to 15 January, 2022	119,833
16 January, 2022 to 15 January, 2023	148,515
Total	**7,354,749**

Note, in the past there were two occasions where the AEMR period changed at the Karuah Quarry based on consultation with the DPE. Since 2012 the period has been January 16 – January 15. The date of the

Development Consent (265-10-2004) is from 3 June 2005 and the period of the consent is until 3 June 2027. The Development Consent (Schedule 2 Condition 7) states there is a total production limit 11.2 million tonnes of andesite from the site within the period of this consent.

Since the start of 2005 until 15 January 2023 the quarry has produced 7,354,749 tonnes which is well within the overall extraction limit.

The production rate at the Karuah Quarry has decreased significantly since 2019, and the forecast for 2023 remains consistent with previous years.

4.6 Water Management

Surface water at Karuah Quarry is managed in accordance with the HQPL Surface Water Management Plan (SWMP).

The principal objective of surface water management for the quarry is to ensure that there is no uncontrolled discharge of water from the site and that the water quality leaving the site meets the EPL criteria. This objective is intrinsic to erosion and sedimentation designs and controls for the quarry. As such, the following specific objectives of this SWMP have been established:

- conducting best practice land clearing procedures for all proposed disturbance areas;
- separating undisturbed runoff from disturbed runoff where possible to minimise and isolate the amount of disturbed or “dirty water” runoff;
- directing sediment-laden runoff into designated sediment control dams;
- diverting clean runoff from areas upstream of the operation into natural depressions and creeks;
- constructing the haul road and working pit face with effective surface drainage thereby reducing roadside erosion and sedimentation;
- allowing sediments to settle in sediment control dams so that the water can be re-used for on-site dust suppression, thereby maintaining dam capacities for subsequent rainfall events;
- maintaining sediment control structures to ensure that the designed capacities are maintained for optimum settling of sediments;
- directing runoff to the rubble drain near Area 2; and
- implementing an effective revegetation and maintenance program for the site.

Water Management is discussed further in **Section 6.8.**

4.7 Rehabilitation during the Reporting Period

Rehabilitation is required to be undertaken in accordance with the approved *Rehabilitation and Closure Plan* (SLR 2021). The Karuah Quarry has entered a closure phase for Lot 11 and some rehabilitation works have commenced on the eastern highwall. In 2020, Karuah Quarry began transporting overburden and soil material from Karuah East Quarry and side casting off the highwall. Biodiversity management measures such as weed control and monitoring continued in 2022, however there were no additional side-casting or medium-to long-term measures from the *Rehabilitation and Closure Plan* completed in 2022.

Rehabilitation is discussed further in **Section 7.0**.

4.8 Next Reporting Period

Table 10 outlines forecast operations for the next reporting period.

Table 10 - Forecast Operations for Next Reporting Period

Operational Area	Forecast for Next Reporting Period
Pit expansion areas	No proposed changes. Operations continuing during the next reporting period within the existing disturbance footprint for campaign-based extraction.
Infrastructure Development/Upgrades	None proposed.
Rehabilitation	Rehabilitation is proposed for areas currently disturbed. Relevant management plans are being revised and will seek approval by DPE in the next reporting period.

5.0 ACTIONS REQUIRED FROM PREVIOUS AEMR (HQPL ACTIONS)

The actions required as an outcome of the previous AEMR, including any actions that have been undertaken and when the actions were completed are provided in **Table 11.**

Table 11 - Actions Required from Previous AEMR

Action Required from Previous AEMR	Action Taken by the Operator	Where Discussed in the AEMR
Continue to update the website with monitoring data and key environment and community information.	Ongoing.	Section 8
Continue weed reduction program (target rehabilitation and conservation areas).	Ongoing.	Section 6.5 Section 7
Remain within licensing and production limits.	Ongoing. As evident in Section 4.4.2, Karuah Quarry remained within licensing and production limits in the 2022 reporting period.	Section 4
Continuation of community support program.	HQPL supports various local and regional community groups and charities. Information can be found on the HQPL website at https://hunterquarries.com.au/ .	Section 8
Letter dated 15 February 2022 by a nominee of the Planning Secretary, HQPL is to revise and submit to the Department by 30 June 2022 the following: • Water Management Plan; • Bushfire Management Plan; and • Environmental Monitoring Program	Ongoing into 2023 AEMR reporting Period. It is anticipated that submission and approval of these Management Plans will occur during the 2023 reporting period.	Section 6 Section 11
Seek approval from DPE for several updated Management Plans, including the • Site Water Management Plan, • Bushfire Management Plan, • Environmental Monitoring Program, • Surface Water Monitoring Plan, • Rehabilitation and Closure Management Plan, • Environmental Management Strategy, and • Flora and Fauna Management Plan.	Hunter Quarries has sought approval from DPE, and updates of the Management Plans are currently under review. It is anticipated that submission and approval of these Management Plan will occur during the 2023 reporting period.	Section 6 Section 11

6.0 ENVIRONMENTAL PERFORMANCE

6.1 Meteorological Monitoring

Schedule 3 Condition 16 of the Development Consent (DA265-10-2004) requires HQPL to *"ensure that there is a suitable meteorological station operating in the vicinity of the development"*.

A meteorological station was installed in August 2016 which is used by both the Karuah Quarry and Karuah East Quarry with the station located near the weighbridge. **Table 12** presents a summary of the meteorological data collected by HQPL during the AEMR reporting period.

Table 12 - AEMR Meteorological Data.

Month	Temp (C°)			Rainfall			Wind
	Average (C°)	Min Temp (C°)	Max Temp (C°)	Total (mm)	Max Daily (mm)	No rain days > 1 mm	Max Wind Gust (km/h)
Jan-21 (16th - 31st)	23.5	14.3	37.1	77.0	77.0	7	43.8
Feb-22	22	13.1	38.3	141.8	141.8	15	67.4
Mar-22	20.2	12.3	30.4	342.8	342.8	21	52.1
Apr-22	17.9	8.9	30.2	211.8	211.8	10	42.6
May-22	14.5	4.3	28.1	117.2	117.2	11	67.4
Jun-22	10.4	2.4	21.5	38.6	38.6	6	58
Jul-22	11.3	3	22.4	272.4	272.4	15	56
Aug-22	12.4	2.8	23.8	94.6	94.6	8	42.6
Sep-22	14.6	5.3	25.2	149	149	15	46.1
Oct-22	17.4	5.6	31.9	147.8	147.8	10	48.5
Nov-22	18.6	5.5	34.5	43.8	43.8	6	61.5
Dec-22	20.4	8.1	35.6	30	30	6	49.7
Jan-23 (1st - 15th)	21.7	12.7	33.3	103	41	4	40.2

In summary:

- Total rainfall: 1769.8 mm (represents a decrease compared to the 2021 result of 1897 mm). The nearest Australian Bureau of Meteorology (BOM) weather station 61339 is located at Clarencetown and recorded a total of 654.4 mm in 2022 and 857.2 mm in 2021.
- Monthly rainfall average: 136 mm;
- Number of rainy days >1mm: 134 days;
- Highest temperature: 38.3 C;
- Lowest temperature: 2.4 C; and
- Average temperature: 17.3 C.

6.2 Noise

6.2.1 EIS Predictions

The 2004 EIS noted that operational noise levels are predicted to meet project specific noise goals at all nearest, potentially affected non-project related residential locations surrounding the site. The 2004 EIS predicted that there would be no increase in road traffic noise levels due to quarry contributed traffic discernible at any residential location adjacent to the Highway.

6.2.2 Approved Criteria

Approved noise criteria from the Development Consent are outlined in **Table 13.**

Table 13 - Noise Criteria for Karuah Quarry

Time Period	Noise Limit (dBA) – Laeq (15minute)
Day 7:00am to 6:00pm Monday to Friday 7:00am to 1:00pm Saturday	48
Evening 6:00pm to 10:00pm Monday to Friday	47
At All Other Times	46

6.2.3 Key Environmental Performance or Management Issues

In accordance with the Development Consent both operator attended and unattended noise monitoring has been conducted at the nearest residential receivers to the quarry during the reporting period.

The Environmental Monitoring Program states:

> *In order to measure the possible impact of noise resulting from quarry operations, the following monitoring will be undertaken at the two (2) nearest residences downwind and/or in line-of sight from the quarry and not owned or under agreement with HQPL.*

Noise monitoring locations are shown in **Figure 3.**

Operator-attended and unattended noise monitoring was conducted at the two nearest residences to determine noise levels in both June and November 2022. A summary of the attended and unattended results from June 2022 obtained by EMM Consulting is provided in **Table 14** and **Table 15**, with full copies of the noise monitoring reports appended to this AEMR in **Appendix 3**. A summary of the attended and unattended results from November 2022 obtained by EMM is also provided in **Table 16** and **Table 17** Table 15, with full copies of the noise monitoring reports appended to this AEMR in **Appendix 3**.

Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, Karuah Quarry and Karuah East Quarry. Quarry contributions listed in the tables are from Karuah Quarry and are stated only when a contribution could be quantified.

All meteorological data were taken as an average over 15 minutes from the Karuah Quarry on-site weather station.

Figure 3 – Environmental Monitoring Locations (Prepared by SLR)

June 2022 Noise Monitoring

Table 14 – June 2022 Noise Monitoring Results – Attended

Location	Date/Start Time/ Weather	Primary Noise Descriptor (dBA)					Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
		LAmax	LA1	LA10	LA90	LAeq	
NM1	16/06/2022 08:16 am Wind: 1 kph	69	58	56	51	54	**Karuah Quarry inaudible**. Traffic on the Pacific Highway, consistently audible. Bird noise and a dog barking occasionally audible.
NM2	16/06/2022 08:38 am Wind: 1 kph	71	69	66	59	63	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, consistently audible. Bird noise and resident noise occasionally audible.

Table 15 – June 2022 Noise Monitoring Results - Unattended

NM1	LA90	LAeq
Day[1]	51	69
Evening[2]	49	55
Night	NA	NA
NM2		
Daytime during Operational Hours[1]	NA	NA
Evening[2]	NA	NA
Night	NA	NA

Note: 1. Daytime - 7.00 am to 5.00 pm Monday to Friday, 8.00 am to 1.00 pm Saturday
2. Evening - 6.00 pm 10.00 pm Monday to Friday

Karuah Quarry does not currently operate during the evening or night-time periods and therefore, attended noise monitoring was conducted during the daytime. Karuah Quarry noise contributions and cumulative quarry noise contributions were below (i.e. complied with) the relevant noise limits at both monitoring locations.

Due to device failure and vandalism, the data captures by both the unattended noise monitors at the location NM1 and NM2 did not meet the minimum requirements of at least four full days of monitoring data, as per the Karuah Quarry EMP. In lieu of this EMM consulting reviewed historical unattended noise monitoring data and determined that Karuah Quarry was compliant. These unattended noise monitoring dates were averaged from the 2020 and 2021 annual reports (**Table 16**).

Table 16 Historical noise monitoring results - unattended

NM1	LA90	LAeq
Day[1]	51	58
Evening[2]	50	59
Night	48	57
NM2		
Daytime during Operational Hours[1]	56	64
Evening[2]	54	63
Night	49	62

November 2022 Noise Monitoring

Table 17 – November 2022 Noise Monitoring Results – Attended

Location	Date/Start Time	Primary Noise Descriptor (dBA)					Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
		LAmax	LA1	LA10	LA90	LAeq	
NM1	23/11/2022 07:07 am	62	59	57	50	54	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, insects and birds consistently audible. A dog barking occasionally audible.
NM2	23/11/2022 07:50 am	78	72	67	57	64	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, insects and birds consistently audible.

Table 18 - November 2022 Noise Monitoring Results – Unattended

NM1	LA90	LAeq
Daytime during Operational Hours[1]	45	52
Evening[2]	46	55
At all other times	43	51
NM2		
Daytime during Operational Hours[1]	56	64
Evening[2]	49	63
At all other times	39	62

Note: 1. Daytime - 7.00 am to 5.00 pm Monday to Friday, 8.00 am to 1.00 pm Saturday
2. Evening - 6.00 pm 10.00 pm Monday to Friday

Karuah Quarry was found to be inaudible at both sites NM1 and NM2 during the attended noise monitoring as seen in **Table 16**. EMM concluded that Karuah Quarry was compliant during the November monitoring.

Observations during the operator attended measurements indicate that the dominant source of noise at both unattended noise monitoring locations is road traffic from the Pacific Highway (particularly during peak traffic periods) with insects, birds and dogs barking also noted as audible. A review of the unattended noise monitoring data found that no meaningful conclusions, events or trends could be associated with Karuah Quarry operations. Karuah Quarry noise contributions were below (satisfied) the noise limits at all monitoring locations.

6.2.3.1 Noise Summary 2022

To summarise the 2022 noise monitoring results:

- All attended and unattended noise monitoring results were compliant for criteria in **Table 13**.
- Where equipment failure or vandalism was involved, EMM Consulting relied on historical monitoring data to determine compliance.

6.2.4 Management Measures

The following objectives and management measures apply to noise management at Karuah Quarry:

- To reduce and/or control noise associated with the quarry operations; and
- To train all relevant personnel in methods to reduce/control noise.

6.2.5 Proposed Improvements to Management Measures

Noise monitoring indicates that the noise levels emitted by the site are below the requirements within the consent criteria. Noise monitoring will continue to be completed in the next AEMR period.

The effectiveness of existing noise mitigation controls will continue to be monitored by the Quarry Manager as part of the routine noise monitoring program and environmental inspections.

6.3 Blasting

6.3.1 EIS Predictions

The 2004 EIS predicted that air blast and ground vibration levels will meet the EPA Guidelines at all residential locations surrounding the development with appropriate maximum instantaneous charge (MIC) limits in place.

6.3.2 Approved Criteria

According to both the EPL 11569 and DA 265-10-2004, the overpressure level from blasting operations must not exceed 115 dB(L) for more than 5% of the total number of blasts, at any residences or nearby receiver, and must not exceed 120dB(L) at any time.

Ground vibration must not exceed 5mm/s for 5% of the total number of blasts over a period of 12 months and must not exceed 10mm/s at the nearby receiver.

6.3.3 Key Environmental Performance or Management Issues

During the reporting period all blasts were monitored at the blast monitoring location shown in **Figure 3. Table 19** outlines the blast monitoring results at the Quarry during the AEMR period.

Table 19 - Blast Monitoring Results During the AEMR Period

Date	Location	Time of Blast	Nearest Private Residence	
			Overpressure (dBL)	Peak Particle Velocity (mm/s)
Tuesday, 23 August 2022	32.626913 S, 152.004742 E	12:31 PM	113.1	1.12
Tuesday, 13 September 2022	32.632395 S, 152.963774 E	11:27 AM	105.7	1.72
Monday, 28 November 2022	32.632395 S, 152.963774 E	11:27 AM	108.5	1.68

Table 19 provides a summary of the blasting results during the AEMR period. All blasts that occurred during the reporting period were below performance criteria.

Table 20 - Blast Monitoring Summary for AEMR Period

Blast Monitoring Summary for AEMR Period *(16 January 2022 – 15 January 2023)*	**Nearest Private Residence**
Total No. of Blasts during reporting period	3
No. of Blast records collected – ie. Values registered	3
No. of Blasts with no results or no value registered.	0
No. of blasts exceeding 5 mm/s	0
No. of Blasts exceeding 115 dBL	0
Average PPV value, including all blasts (mm/s)	1.50
Average PPV value, including only blasts which triggered (mm/s)	1.50
Highest PPV value (mm/s)	1.72
Lowest PPV value registered (mm/s)	1.12
Average overpressure value, including all blasts (dBL)	109.1
Average overpressure value, including only blasts which triggered (dBL)	109.1
Highest overpressure value (dBL)	113.1
Lowest overpressure value (dBL) registered	105.7

A total of three blasts were undertaken in 2022.

During the AEMR period:

- No blasts exceeded 120 dBL; and
- No blast exceeded 115 dBL at the nearest residential dwelling or privately owned land; and

- No ground vibration peak particle velocity readings exceeding 5 mm/s.
- Blasting results have been below approved criteria and EIS predictions. Management Measures

  The following control measures have been employed at the site:
- Considerations of explosive loading, initiation sequence and firing;
- Use of experienced blast contractors;
- Monitoring of meteorological conditions prior to blasting; and
- Notifying landowners (at their request) and occupiers of blast events.

Additionally, all blasting activities at Karuah Quarry are monitored by a licensed blasting contractor. Monitoring equipment is located at the nearest residence (Monitor 1).

6.3.4 Proposed Improvements to Management Measures

Blasts will continue to be monitored and reported in the next AEMR period. No further improvements required.

6.4 Air Quality

6.4.1 EIS Predictions

The 2004 EIS for an Extension to the Karuah Quarry predicted that dust levels from the operation would be within the criteria of 4 g/m^2/month. HQPL can demonstrate that air quality monitoring through dust depositional monitoring after several years clearly shows the quarry is meeting air quality criteria.

6.4.2 Approved Criteria

All air quality monitoring conducted at the quarry during the reporting period was compared to criteria stipulated in Schedule 3 Consent Condition 13, of DA 265-10-2004, which states:

The Applicant shall ensure that the dust emissions generated by the development do not cause additional exceedances of the ambient air quality impact assessment criteria (listed in **Table 20**, **Table 21** and **Table 22**) *at any residence on, or on more than 25 percent of, any privately owned land.*

Table 21 - Long-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m

Table 22 - Short-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m

Table 23 - Long-term impact assessment criteria for deposited dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1- 1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

There are no specific criteria relating to dust levels at Karuah Quarry in EPL 11569.

6.4.3 Key Environmental Performance or Management Issues

The principal source of air pollution at the quarry is in the form of airborne dust, which arises from activities such as quarrying, vehicle movements and crushing.

6.4.3.1 Depositional Dust Monitoring

The results in **Table 24** illustrate that all dust gauges were below the annual average assessment criteria of 4 g/m^2/month during the 2022 reporting period.

Table 24 - Depositional Dust Monitoring Summary 2022 (g/m^2/month)

Date on	Date off	DDG1	DDG2	DDG3	DDG4
4 January 2022	3 February 2022	0.9	0.7	0.3	0.4
3 February 2022	7 March 2022	1.4	0.8	1.2	0.1
7 March 2022	5 April 2022	0.8	3.6	0.8	0.4
5 April 2022	5 May 2022	0.1	0.3	0.1	0.2
5 May 2022	3 June 2022	0.4	0.6	0.4	0.3
3 June 2022	5 July 2022	0.3	0.2	0.2	0.2
5 July 2022	3 August 2022	0.3	0.3	0.4	0.7
3 August 2022	2 September 2022	0.9	0.9	0.6	1.0
2 September 2022	4 October 2022	0.5	0.2	0.6	0.3
4 October 2022	3 November 2022	0.2	0.5	0.5	0.3
3 November 2022	5 December 2022	0.8	0.8	0.7	1.2
5 December 2022	5 January 2023	0.7	0.7	0.3	0.6
Annual Average		0.6	0.8	0.5	0.5

Table 25 - Long- term Depositional Dust Monitoring Summary

Dust Depositional Gauge		Monitoring Results (g/m^2/month)								
		2022	2021	2020	2019	2018	2017	2016	2015	2014
DDG 1	Insoluble Solids Reporting Period Average	0.6	1.5	1.5	1.5	1.1	0.9	1.9	1.5	1.2
	Max. Insoluble Solids	1.4	3.6	3.4	3.8	1.6	1.7	4.0	6.4	2.2
	Min. Insoluble Solids	0.1	0.2	0.1	0.3	0.6	0.4	0.4	0.3	0.5
DDG 2	Insoluble Solids Reporting Period Average	0.8	0.6	0.8	1.8	0.9	0.7	1.0	0.9	0.9
	Max. Insoluble Solids	3.6	1.4	2.3	4.0	3.4	1.8	3.0	3.7	2.2
	Min. Insoluble Solids	0.2	0.1	0.1	0.5	0.4	0.1	0.3	0.3	0.4
DDG 3	Insoluble Solids Reporting Period Average	0.5	0.7	0.7	1.3	0.9	0.9	0.7	0.6	0.8
	Max. Insoluble Solids	1.2	2.2	2.3	3.5	3.4	1.4	1.3	2.8	1.4
	Min. Insoluble Solids	0.1	0.2	0.1	0.2	0.4	0.5	0.3	0.1	0.3
DDG 4	Insoluble Solids Reporting Period Average	0.5	0.8	0.9	1.6	1.3	1.5	1.3	1.2	1.6
	Max. Insoluble Solids	2	3.7	3.5	4.8	3.0	3.8	3.2	4.1	7.1
	Min. Insoluble Solids	0.1	0.1	0.1	0.1	0.2	0.5	0.3	0.3	0.3

In summary:

- DDG1 – Decreased from annual average of 1.5 g/m^2/month in 2020 and 2021 to 0.6 in 2022. Within Development Consent criteria;
- DDG2 – Slight increase from annual average of 0.6 g/m^2/month in 2021 to 0.8 g/m^2/month in 2022. Within Development Consent criteria;
- DDG3 – Decrease in annual average of 0.7 g/m^2/month in 2021 to 0.5 g/m^2/month in 2022. Within Development Consent criteria; and
- DDG4 – Decrease from an average of 0.8 g/m^2/month in 2021 to 0.5 g/m^2/month in 2022. Within Development Consent criteria.

The long-term results indicate there has been little change between annual averages across the depositional dust gauges between 2014 and 2022. There were no exceedances of the monthly depositional dust criteria of 4 g/m^2/month. There appears to have been no cumulative impacts associated with the adjacent Karuah East operation.

6.4.3.2 High Volume Air Sampler

Table 26 outlines the High Volume Air Sampler (HVAS) results during the 2022 reporting period.

Table 26 - High Volume Air Sampler Results

Date	TSP (µg/m³)	PM_{10} (µg/m³)	Comments
16 January 2022	30	21	24-hour criteria compliant.
22 January 2022	12	10	24-hour criteria compliant.
28 January 2022	27	12	24-hour criteria compliant.
3 February 2022	24	14	24-hour criteria compliant.
9 February 2022	21	12	24-hour criteria compliant.
15 February 2022	32	20	24-hour criteria compliant.
21 February 2022	20	13	24-hour criteria compliant.
27 February 2022	11	10	24-hour criteria compliant.
5 March 2022	17	12	24-hour criteria compliant.
11 March 2022	16	12	24-hour criteria compliant.
17 March 2022	23	15	24-hour criteria compliant.
23 March 2022	4	12	24-hour criteria compliant.
29 March 2022	15	11	24-hour criteria compliant.
4 April 2022	13	10	24-hour criteria compliant.
10 April 2022	12	9	24-hour criteria compliant.
16 April 2022	12	8	24-hour criteria compliant.
22 April 2022	13	9	24-hour criteria compliant.
28 April 2022	26	9	24-hour criteria compliant.
4 May 2022	16	11	24-hour criteria compliant.
10 May 2022	5	3	24-hour criteria compliant.
16 May 2022	23	13	24-hour criteria compliant.
22 May 2022	5	2	24-hour criteria compliant.
28 May 2022	6	3	24-hour criteria compliant.
3 June 2022	10	6	24-hour criteria compliant.
9 June 2022	10	3	24-hour criteria compliant.
15 June 2022	13	7	24-hour criteria compliant.
21 June 2022	26	12	24-hour criteria compliant.
27 June 2022	14	6	24-hour criteria compliant.
3 July 2022	8	6	24-hour criteria compliant.
9 July 2022	23	12	24-hour criteria compliant.
15 July 2022	5	4	24-hour criteria compliant.
21 July 2022	6	3	24-hour criteria compliant.
27 July 2022	11	5	24-hour criteria compliant.
2 August 2022	16	7	24-hour criteria compliant.
8 August 2022	10	4	24-hour criteria compliant.
14 August 2022	3	1	24-hour criteria compliant.
20 August 2022	12	6	24-hour criteria compliant.
26 August 2022	8	4	24-hour criteria compliant.

Date	TSP (µg/m³)	PM_{10} (µg/m³)	Comments
1 September 2022	18	9	24-hour criteria compliant.
7 September 2022	11	5	24-hour criteria compliant.
13 September 2022	11	7	24-hour criteria compliant.
19 September 2022	22	12	24-hour criteria compliant.
25 September 2022	14	6	24-hour criteria compliant.
1 October 2022	16	9	24-hour criteria compliant.
7 October 2022	15	9	24-hour criteria compliant.
13 October 2022	44	18	24-hour criteria compliant.
19 October 2022	16	7	24-hour criteria compliant.
25 October 2022	27	12	24-hour criteria compliant.
31 October 2022	16	9	24-hour criteria compliant.
6 November 2022	10	7	24-hour criteria compliant.
12 November 2022	42	18	24-hour criteria compliant.
18 November 2022	16	7	24-hour criteria compliant.
24 November 2022	21	12	24-hour criteria compliant.
30 November 2022	25	13	24-hour criteria compliant.
6 December 2022	20	11	24-hour criteria compliant.
12 December 2022	50	16	24-hour criteria compliant.
18 December 2022	14	9	24-hour criteria compliant.
24 December 2022	14	10	24-hour criteria compliant.
30 December 2022	21	13	24-hour criteria compliant.
5 January 2023	20	11	24-hour criteria compliant.
11 January 2023	11	9	24-hour criteria compliant.
Annual Average	**17**	**9**	**TSP and PM_{10} Compliant**
Minimum	**3**	**1**	**Compliant**
Maximum	**50**	**21**	**Compliant**

The TSP annual average during 2022 was 17 µg/m³, well below the criteria of 90 µg/m³. The maximum TSP result was 50 µg/m³ on 12 December 2022.

The annual average for PM_{10} was 9 µg/m³, well below the long-term impact assessment criteria of 30 µg/m³. The maximum PM_{10} result recorded during 2022 was 21 µg/m³ on the 16 January 2022. Therefore, the short-term impact assessment criteria of 50 µg/m³ was not exceeded during 2022.

6.4.4 Management Measures

The following management measures have been adopted at the site to control dust:

- Air quality monitoring;
- Minimising disturbance of land to only what is required by quarry activities;
- Minimising distance travelled by hauling rock the shortest distance possible;

- Utilising quarry runoff water for dust suppression on roads, stockpiles, production plant and work areas. A 13,000 litre (L) water cart is used at the site to assist with firefighting capabilities and dust management. Water is regularly collected from Sediment Dam 2 and sprayed on roads throughout the quarry to minimise dust generated from vehicle movements;

- Engaging the services of a contract road sweeper to regularly clean roadways around the entrance to the quarry; and

- Ensuring loads are covered when leaving the site.

6.4.5 Proposed Improvements to Management Measures

HQPL will continue to monitor air quality in accordance with the conditions of the Development Consent and will also review measures for improving dust management on site.

6.5 Biodiversity

6.5.1 EIS Predictions

The 2004 Stage 2 EIS stated:

The proposed extension will impact on four endangered species, one directly and the others indirectly. The impacts can be adequately mitigated to allow these species to continue to function unimpeded by the proposed extension. A conservation off-set of 16 hectares will be provided on adjacent land. The off-set will comprise similar habitat to that which will be disturbed by quarrying. The off-set will ensure an appropriate level of formal protection for threatened flora and fauna species in the long-term.

6.5.2 Approved Criteria

There are no specific criteria associated with biodiversity management for the site. Activities need to be completed in accordance with the EIS.

6.5.3 Key Environmental Performance or Management Issues

HQPL implement a *Flora and Fauna Management Plan.* The key components and management measures of the *Flora and Fauna Management Plan* include:

- A vegetation clearing protocol;

- Flora and fauna monitoring;

- Topsoil management;

- *Conservation Offset Management Plan*; and

- *Remnant Vegetation Conservation Plan*.

The *Flora and Fauna Management Plan* was revised and approved in 2020. Ecological monitoring for Karuah Quarry is required to be conducted on a biennial (once every two years) basis as per the *Flora and Fauna Management Plan* (2020). Flora and fauna monitoring was undertaken across Summer 2020 and Summer 2021 by Kleinfelder, with these results being summarised in the 2020 AEMR.

Flora and Fauna Monitoring

Flora and fauna monitoring was undertaken by Wedgetail Project Consulting within the remnant vegetation and conservation offset areas of Karuah Quarry during the 2022 AEMR reporting period.

This monitoring report found that:

- Floristic diversity within the quadrats remained relatively consistent between the 2020 and 2022 survey events, with similar species diversity and exotic species proportions.
- Population dynamics of Tetratheca juncea remained relatively consistent with the 2020 monitoring results. Across all monitoring plots, population size (number of plant clumps) remained consistent, and the total number of flowers and fruit increased.
- No substantial change in the proportion of native species to exotic species across all ecological communities is evident. The high proportion of native species within each community suggests that these communities are generally healthy.
- Anabat surveys detected a total of 15 Microbat species at all locations. Of these species recorded, there was a total of six threatened species identified which include: Eastern False Pipistrelle (*Falsistrellus tasmaniensis*), Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*), Greater Broad-nosed Bat (Scoteanax rueppellii), Little Bent-wing Bat (Miniopterus australis), Large Bent-winged Bat (Miniopterus orianae oceanensis) and Southern Myotis (Myotis macropus)
- Fauna surveys conducted across the monitoring area show that new species and previously detected species have been found within the remnant vegetation and the Conservation Offset area in the 2022 monitoring event.

Flora and fauna monitoring is conducted on a biennial basis, with the next monitoring report to occur in 2024.

Weeds

The biodiversity monitoring and site inspections in previous reporting periods have identified *Lantana camara* (Lantana) as being the most widespread and abundant weed species across the site, including the conservation area. Other weed species identified include *Senecio madagascariensis* (Fireweed) and exotic perennial grasses *Setaria sphacelata* (South African Pigeon Grass), *Andropogon virginicus* (Whisky Grass), and *Axonopus fissifolius* (Narrow-leafed Carpet Grass),

6.5.4 Management Measures

Biodiversity impacts continue to be managed in accordance with the *Flora and Fauna Management Plan* with this including weed and feral animal management.

Long Term Security of the Conservation Offset Area

Conditions 17 and 18 of Schedule 3 of DA 265-10-2004 outline the requirements for the establishment and long-term security of the conservation offset area on the southern portion of Lot 12 DP 1024564 (as shown in Figures 2 and 3 of the approved *Flora and Fauna Management Plan (SLR, 2020*).

On 17 November 2021 the NSW DPE provided approval for the establishment of a caveat on the land (which is comprised of a public positive covenant and a restriction on the use of the land covenant), refer to **Appendix 5.** The covenants had been prepared in consultation with the NSW DPE.

Subsequently, in January 2022 a caveat on the title of Lot 12 DP 1024564 was registered with NSW Land Registry Services that included a restriction and positive covenant plan. Provided in **Appendix 5** is the following information:

- Registered DP1280667 plan and administration sheets.
- Registered DP1280667 s88b instrument.
- New certificate of title 12/1024564.

Therefore, Conditions 17 and 18 of DA 265-10-2004 are satisfactorily addressed.

6.5.5 Proposed Improvements to Management Measures

HQPL will continue to undertake weed control measures particularly around haul roads and within rehabilitation areas in 2023. Site inspections for the identification of noxious weeds will continue to be undertaken.

6.6 Heritage (Aboriginal and Non-Aboriginal)

6.6.1 EIS Predictions

The archaeological survey conducted for the EIS (ADW, 2004) process did not find any heritage items onsite. There were no predicted impacts to heritage from the Karuah Quarry.

6.6.2 Approved Criteria

There are no specific criteria associated with heritage relating to the project.

The process for managing any unexpected heritage items is outlined in **Section 6.6.4**.

6.6.3 Key Environmental Performance or Management Issues

There were no issues relating to Aboriginal and Cultural heritage during the reporting period. There was no clearing in the period.

6.6.4 Management Measures

Should unexpected Aboriginal objects/features be encountered, work must stop immediately, and the area cordoned off with a high visibility barrier. The Quarry Manager is to then contact a heritage consultant and Registered Aboriginal Parties (RAPs). The heritage consultant, in consultation with the RAPs, is to conduct a field survey to assess the Aboriginal objects/features identified. The heritage consultant, in consultation with the RAPs, will then recommend appropriate mitigation measures.

The Quarry Manager is to implement the mitigation measures that are recommended by the heritage consultant and agreed to by the RAPs and in accordance with Heritage NSW regulations. If additional visual inspection and salvage is recommended, the Quarry Manager is to arrange for the heritage consultant and RAPs to undertake those works.

Provided that these heritage contingency protocols have been followed, works within the Project Area may proceed.

6.6.5 Proposed Improvements to Management Measures

As there have been no heritage items located to date, no improvements to management measures are proposed.

6.7 General Waste Management

6.7.1 Environmental Management

HQPL use a licensed contractor for waste removal at the site. Typical waste at the quarry generally consists of non-hazardous and general wastes, as well as oily wastes. The general and non-hazardous wastes are placed in a skip bin and removed from site.

Oily water accumulates in the workshop sump within a bunded area and is removed by a licenced contractor when the sump is full. Additionally, scrap steel and tyres are separated and stockpiled until there is enough quantity for removal by a licensed contractor for recycling.

6.7.2 Environmental Performance

A licenced waste contractor removes waste from a 3 metre cubed waste bin at the site. There were 26 collections during the reporting period, with capacity of the bin ranging from 50% to 100%. Over 2022, approximately 68 cubic metres of waste was removed from the site, with this being an increase compared to 51 cubic metres in 2020.

6.7.3 Proposed Improvements to Management Measures

HQPL will continue to effectively manage their waste on site, including continuing to reuse and recycle where possible.

6.8 Water Management

Surface water at Karuah Quarry is managed in accordance with HQPL *Surface Water Management Plan* (SWMP). The primary objective of water management at the site is to remain compliant with EPL 11569. As such, water contained within the footprint of the development is directed to Sediment Dam 2. Where this is not possible, water is directed through sediment control structures such as silt fences and retention sumps.

Water Storage and Use

During this reporting period, water from Sediment Dam 2 has been used for the following:

- Dust suppression on internal access and haul roads; and
- Process water/dust suppression for the crusher, conveyors and stockpiles.

HQPL continued to record water usage during the reporting period.

The capacity of the dam is approximately 18 ML. During the reporting period the volume of water stored in Sediment Dam 2 remained at higher capacity due to the high rainfall received across the period (see **Section 6.8.2** for details of discharge).

6.8.1 Proposed Improvements to Management Measures

KQPL is currently updating the *Surface Water Management Plan* and is expected to be approved during the 2023 AEMR reporting period. Sediment Dam 2 and other erosion and sediment control structures are regularly inspected. Additionally, surface water is pumped from Sediment Dam 2 to the smaller sediment dam to reduce the risk of overflow and discharge, and to reduce sediment load. In order to reduce the risk of water discharges, the level of Sediment Dam 2 is maintained at a low level.

6.8.2 Discharges

Water Discharge Events

In the event of a discharge, surface water parameters and volume are monitored in accordance with the conditions in EPL 11569. This includes monitoring water quality daily during discharge and sampling for pH and TSS at the licenced discharge point (LDP). During discharge events, water discharging from the site needs to be within the parameters outlined in Condition L2.4 of EPL 11569. The site has the ability to pump water back up into the pit area (unused section) to increase capacity.

Discharge monitoring results are listed in **Table 27.**

Table 27 - Discharge Monitoring Results 2022

Discharge Point	Date	pH	TSS (mg/L)	Oil and Grease (mg/L)	Comment
EPL Criteria		6.5 - 8.5	50	5 and/or Non-Visible	
No Discharges occurred during the 2022 reporting period					

6.8.3 Routine Monitoring

Sediment Dam 2 was sampled twice during the 2022 reporting period. The results are presented in **Table 28**

Table 28 - Surface Water Monitoring Results 2022 (Routine Sampling of Sediment Dam 2)

Date	EPL Criteria (For Discharge)	12/05/2022	26/10/2022
pH	6.5 - 8.5	7.4	7.4
EC (µS/cm)	-	271	297
TSS (mg/L)	50	180	450
Turbidity (NTU)	-	220	680
Oil and Grease (mg/L)	5 or non - visible	<5	<5
Total Nitrogen	-	0.4	0.2
Total Phosphorus	-	0.2	0.2

As seen above, both May and October 2022 results (routine monitoring) were compliant with the EPL pH limits. Oil and grease were also compliant on both sampling occasions. TSS was above criteria in both May and October 2022. However, no discharge occurred on these occasions meaning Karuah remains compliant with Condition L2.4 of EPL 11569.

These TSS results are relatively consistent with TSS results from 25 May 2021 (199 mg/L), however there is an increase when compared to the 29 November 2021 (63 mg/L).

6.8.4 Water Take

There is no Water Take at the Karuah Quarry, with the site having no extraction licences.

6.8.5 Salinity Trading Scheme Credit Use

Not applicable to Karuah Quarry.

6.8.6 Compensatory Water to Other Users

Not applicable to Karuah Quarry.

6.9 Summary of Environmental Performance

Table 29 provides a summary of the environmental performance at the site for the reporting period.

Table 29 - Environmental Performance

Aspect	Approval Criteria/EIS Prediction	Performance During the Operating Period	Trend/Key Management Implications	Implemented/Proposed Management Actions
Noise	See Section 6.2.1	Compliant	Within criteria	Continued monitoring
Blasting	See Section 6.3.1	Compliant	Within criteria	Continued monitoring
Air Quality	See Section 6.4.1	Compliant	Within criteria	Continued monitoring
Biodiversity	See Section 6.5.1	Compliant	No specific criteria	Continued management
Heritage	See Section 6.6.1	Compliant	No specific criteria	No additional management proposed.
Waste	No predictions	Compliant	Minimal change over successive years.	Continued monitoring
Water	See Section 6.8.1	Compliant	Not triggered.	Continued monitoring

7.0 REHABILITATION

A report titled the *Karuah Quarry Rehabilitation and Closure Plan* has been prepared for Karuah Quarry to meet the requirements of Schedule 3 Condition 39 (Rehabilitation Management Plan) and Schedule 3 Condition 44 (Quarry Closure Plan) of DA 265-10-2004. The latest version of the *Rehabilitation and Closure Plan* is dated 27 May 2021 and was approved by DPE on 8 July 2021.

There have been limited opportunities to establish rehabilitation at the quarry site prior to 2020, due to the configuration of the quarry and the progressive nature of the working areas. Side casting was undertaken in 2020 and 2021 to prepare for rehabilitation activities proposed for the end of 2021. Due to major changes in project planning and schedules in 2021, limited rehabilitation activities were completed. In addition to this, there was a significant increase in market demand influenced by local infrastructure and construction projects. Therefore, in 2021 there were limited opportunities to commence additional medium- to long-term rehabilitation measures outlined in the *Karuah Quarry Rehabilitation and Closure Plan*.

Due to a revised works schedule and proposed project changes for the Karuah Quarry, the Rehabilitation and Closure Plan will be updated in 2023. This revision will seek to better reflect rehabilitation timelines.

7.1 Rehabilitation Performance During Reporting Period

A summary of rehabilitation at Karuah Quarry is outlined in **Table 30.**

Table 30 - Summary of Rehabilitation Performance During Reporting Period

Guideline Requirement	Site Comment
Extent of the operations and rehabilitation at completion of the reporting period	No rehabilitation was undertaken in 2022. In 2021, grass germination and growth was observed on the eastern benches which had been side-casted with material in 2020.
Agreed post- rehabilitation land use	The *Rehabilitation and Closure Plan* was approved in 2021 by the DPE. The *Rehabilitation and Closure Plan* proposes to leave the pit as a water storage, with woodland rehabilitation for the rest of the site. The *Rehabilitation and Closure Plan* is currently under review, and is expected to be approved during the 2023 reporting period.
Key rehabilitation performance indicators	The *Rehabilitation and Closure Plan* includes completion criteria.
Renovation or removal of buildings	None during reporting period.
Any other Rehabilitation taken including: • Exploration activities; • Infrastructure; • Dams; and • The installation or maintenance of fences, bunds and any other works.	There was no rehabilitation undertaken during the AEMR period.

Guideline Requirement	Site Comment
Any rehabilitation areas which have received formal sign off.	None.
Variations to activities undertaken to those proposed.	No rehabilitation undertaken during the AEMR period.
Outcomes of trials, research projects and other initiatives	Key notes from the rehabilitation inspection are outlined in **Section 7.2**.
Key issues that may affect successful rehabilitation	Weed management is a continuous management issue for the site.

7.2 Summary of Rehabilitation Inspection

Rehabilitation inspections are completed in Rehabilitation Area 1 annually. The inspection includes reviewing key features such as:

- Ground cover;
- Erosion;
- Overstorey, mid storey and lower storey;
- Nutrient cycling;
- Presence of mortality or die back; and
- Presence of weeds and feral animals.

The rehabilitation is mostly on rocky substrate with some soil. There is minimal erosion, with a good cover of acacias and some eucalypts have established. It should be noted that traditionally Acacias are the first species to propagate and eucalypts will emerge years later. Therefore, identification of perished acacias should not cause concern. There is minimal ground cover in some areas; with evidence of weeds (mainly Lantana) mostly along the edge of the rehabilitation area. There is minimal change in groundcover and general conditioning from previous monitoring periods.

Table 31 details the rehabilitation status by year in accordance with the key rehabilitation performance indicators.

Table 31 - Rehabilitation Status

Quarry Area Type	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	Previous AEMR Period (ha)	Current AEMR Period (ha)	Next AEMR Period (ha)
A. Total Quarry Footprint (including access road in)	28.8 ha	28.8 ha	28.8 ha
B. Total Active Disturbance	25.9 ha	25.9 ha	25.9 ha
C. Land Being Prepared for Rehabilitation	1.57 ha	0.0 ha	1.57 ha
D. Land Under Active Rehabilitation	1.8 ha	0.0 ha	2.0 ha

Quarry Area Type	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	Previous AEMR Period (ha)	Current AEMR Period (ha)	Next AEMR Period (ha)
E. Completed Rehabilitation (signed off rehabilitation)	0	0	0
F. Remnant Bushland within Disturbance Footprint	11.2 ha	11.2 ha	11.2 ha

There was no rehabilitation undertaken during the AEMR period. See **Section 7.3** for further details.

7.3 Actions for the Next Reporting Period

The DPE 2015 Annual Review Guidelines require the AEMR to outline the rehabilitation actions proposed during the next reporting period. These actions are detailed in **Table 32**.

Table 32 - Actions for the Next Reporting Period

Requirement	Site Comment
Describe the steps to be undertaken to progress agreement during next reporting period, where final rehabilitation outcomes have not yet been agreed between stakeholders	The next steps for rehabilitation will be developed through the revised *Karuah Quarry Rehabilitation and Closure Plan*. It is anticipated the Plan will be updated in 2023. Karuah Quarry continues to assess opportunities to progressively rehabilitate. Areas, including the northern and western benches, have been identified as being suitable to commence progressive rehabilitation. Weed management in and around disturbed areas will seek to control identified weed species in preparation for quarry closure.
Outline proposed rehabilitation trials, research projects and other initiatives to be undertaken during next reporting period	When rehabilitation monitoring commences at the site it will include: • Revegetated and landscaped areas to be monitored for a three year period, and • All rehabilitation works (i.e. fencing, weed control, erosion & sediment control) for the quarry's disturbed areas will be monitored as part of the site's monthly internal environmental inspections.
Summary of rehabilitation activities proposed for next report period	Rehabilitation activities will be determined once revision of *Karuah Quarry Rehabilitation and Closure Plan* is completed and proposed project modifications are developed or finalised.

8.0 COMMUNITY

8.1 Community Engagement Activities

In both 2007 and 2011, HQPL sent flyers to nearby neighbours and advertised for expressions of interest for a Community Consultative Committee (CCC). There was no interest received and therefore a CCC was not formed. In the neighbouring Karuah East Quarry, during biannual CCC meetings, community members are able to discuss Karuah Quarry if required.

Following the 2019 Independent Environmental Audit (see **Section 9**), HQPL have committed to sending out a report to nearby residents and the MidCoast Council updating these stakeholders on the environmental performance of the quarry from January to June of each year. Therefore, information can be accessed by the community twice a year through this report, as well as the AEMR. The Community Consultation Reports can be found on the HQPL website at https://hunterquarries.com.au/. More detail on this Community Communication Strategy is available in Section 4.14.2 of the EMS (SLR, 2020).

8.2 Community Contributions

HQPL feels strongly about supporting the local community and has a long history of community contributions. They are the proud supporters of various local and regional community groups and charities.

Additional information regarding community contributions can be found on the HQPL website at https://hunterquarries.com.au/.

8.3 Complaints

In 2022 there was one complaint received.

Karuah Quarry received a complaint by email from DPIE, who was notified by a community member on 14 January 2022 regarding air quality and water pollution. An investigation was undertaken immediately after the complaint was received, however site personnel could not find evidence of air quality and water pollution exceedances leaving site. Karuah East Quarry provided monitoring data to DPIE. There were no further actions required.

As evident in **Table 33**, the number of complaints at Karuah Quarry has remained stable at one a year since 2017, with two complaints received in 2020 and 2021.

Table 33 - Complaint Numbers per Year

Year	Number of Complaints Received
2012	0
2013	0
2014	0
2015	0
2016	0
2017	1
2018	1
2019	1

Year	Number of Complaints Received
2020	2
2021	2
2022	1

When a complaint is received, it is logged and investigated by the Quarry Manager. Feedback is then provided to the complainant and government agencies, as required. This process forms a part of the Karuah Quarry Environmental Management Strategy (EMS).

A telephone number has been established for the purpose of receiving complaints and enquiries from the community and this number is available on the HQPL website (www.hunterquarries.com.au) and is provided on a sign at the entrance to the quarry. The community can contact the quarry on (02) 4997 5966 as well as through the HQPL website.

9.0 INDEPENDENT AUDIT

There is a requirement for Independent Environmental Audits at Karuah Quarry as per Schedule 4 Condition 6 of the Development Consent.

Within 2 years of the date of this consent, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development.

The previous audit was undertaken in July 2019. HQPL prepared a Response to Audit Recommendations (RAR) which was submitted to DPE 19 February 2020. This was accepted by DPE 28 February 2020. The Audit Action Plan and current progress against the recommendations is contained in **Appendix 4**. There was correspondence with the DPE during 2020 to close out a number of the non-compliances identified, including various management plan updates being finalised and approved. Any outstanding non-compliances are included in **Section 1**.

The next audit is due in July 2024.

10.0 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

10.1 Summary of Incidents

During the 2022 AEMR reporting period, there was no recorded incidents or non-compliance relating to environmental performance. Non-compliance from the 2019 Independent Environmental Audit involving the updating of several Management Plans continue to be addressed, with approval of relevant management plans anticipated for the next reporting period.

10.2 Summary of Non-Compliances

A summary of non-compliances is outlined in **Table 3** in **Section 1**. This includes non-compliances from the 2019 Independent Environmental Audit.

11.0 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Table 34 outlines the proposed actions in the next AEMR.

Table 34 - Proposed Actions in the Next AEMR

Proposed Action	Timeline	Management Plan Requires Revision (Y/N)
Continue to update the website with monitoring data and key environment and community information.	Ongoing	No
Continue weed reduction program (target rehabilitation and conservation areas).	Continuous as required.	Yes
Remain within licensing and production limits.	Ongoing	No
Continuation of community support program.	Ongoing	No
Seek approval from DPE for several updated Management Plans, including the Site Water Management Plan, Bushfire Management Plan, Environmental Monitoring Program, Surface Water Monitoring Plan, Rehabilitation and Closure Management Plan, Environmental Management Strategy, and Flora and Fauna Management Plan.	Commence in 2022, and expected to be submitted in 2023	Yes

12.0 REFERENCES

The following documents and reports have been used to assist in writing the quarry's AEMR:

- *DoP (2005) Development Consent DA265-10-2004.*
- *DEC-EPA, (2002) Environment Protection Licence 111569.*
- *Asquith & deWitt (ADW) (2004) Environmental Impact Statement: Proposed Hard Rock Quarry Extension.*
- *SLR Consulting (2020) Environmental Management Strategy*
- *SLR Consulting (2015 Review) Environmental Monitoring Plan*
- *SLR Consulting (2015 Review) Bushfire Management Plan*
- *SLR Consulting (2015 Review) Site Water Management Plan*
- *SLR Consulting (2021) Karuah Quarry Rehabilitation and Closure Plan*
- *SLR Consulting (2020) Karuah Quarry Flora and Fauna Management Plan*
- *EMM (2022) Karuah Quarry Noise Monitoring*
- *Wedgetail Project Consulting (2023) Biodiversity Monitoring Report*

APPENDIX 1 – Development Consent

Development Consent

Section 80 of the *Environmental Planning and Assessment Act 1979*

I, the Minister for Infrastructure, Planning and Natural Resources, approve the Development Application referred to in Schedule 1, subject to the conditions in Schedules 2 to 4.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the development.

SIGNED

Craig Knowles, MP
Minister for Infrastructure, Planning and Natural Resources

Sydney 3 June 2005 File No. S04/00635

SCHEDULE 1

Development Application:	DA 265-10-2004.
Applicant:	Hunter Quarries Pty Limited.
Consent Authority:	Minister for Infrastructure, Planning and Natural Resources.
Land:	Lot 21 DP 1024341, Lot 11 DP 1024564 & Lot 12 DP 1024564.
Proposed Development:	The development includes: • implementing the remainder of the approved Stage 1 quarry operation; • extending the quarry operations into the Stage 2 area • upgrading and using existing infrastructure on site; • rehabilitating the site by re-contouring and revegetating exposed surfaces; and • producing up to 500,000 tonnes of product a year over the next 22 years.
State Significant	The proposal is classified as State significant development under section 76A(7) of the *Environmental Planning and Assessment Act 1979* as it is an extractive industry that would extract more than 200,000 tonnes of material a year.
Integrated Development:	The proposal is classified as integrated development, under section 91 of the *Environmental Planning and Assessment Act 1979* as it requires an additional approval under the *Protection of the Environment Operations Act 1997.*

Designated Development:	The proposal is classified as designated development under section 77A of the *Environmental Planning and Assessment Act 1979* as it is an extractive industry that would "obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per year…". Consequently, it meets the criteria for designated development in schedule 3 of the *Environmental Planning and Assessment Regulation 2000*.

Notes:

- *To find out when this development consent becomes effective, see section 83 of the Environmental Planning and Assessment Act 1979* (EP&A Act);
- *To find out when this development consent is liable to lapse, see section 95 of the EP&A Act; and*
- *To find out about appeal rights, see section 97 of the EP&A Act*

TABLE OF CONTENTS

DEFINITIONS

AEMR	Annual Environmental Management Report
Applicant	Hunter Quarries Pty Limited, or its successors
BCA	Building Code of Australia
CCC	Community Consultative Committee
Council	Great Lakes Shire Council
DA	Development Application
Day	Day is defined as the period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DEC	Department of Environment and Conservation
Department	Department of Infrastructure, Planning and Natural Resources
Director-General	Director-General of the Department of Infrastructure, Planning and Natural Resources, or delegate
DPI	Department of Primary Industry
EIS	Environmental Impact Statement titled 'Environmental Impact Statement to accompany a State Significant Development Application for an existing Hard Rock Quarry, Property: Lot 21 DP 1024341 and Lot 11 DP 1024564, Pacific Highway, Karuah', Volumes 1, 2 & 3, dated October 2004 and prepared by Asquith and deWitt Pty Ltd
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection License
Evening	Evening is defined as the period from 6pm to 10pm
GTA	General Terms of Approval
Minister	Minister for Infrastructure and Planning, or delegate
Night	Night is defined as the period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
POEO Act	*Protection of the Environment Operations Act 1997*
Privately owned land	Land not owned by the Applicant or its related companies or where a private agreement does not exist between the Applicant and the land owner
Receiver	As defined in the *NSW Industrial Noise Policy* (EPA 2000)
Site	Land to which the DA applies (Lot 21 DP 1024341, Lot 11 DP 1024564 & Lot 12 DP 1024564)
Stage 1	Existing quarry operation approved by Great Lakes Shire Council on 11 November 1997 (DA 302/97) including the 'Karuah Red quarry' site, as marked on the map in Appendix 1.
Stage 2	Proposed quarry extension as marked on the map in Appendix 1.

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.

TERMS OF APPROVAL

2. The Applicant shall carry out the development generally in accordance with the:
   (a) DA 265-10-2004;
   (b) EIS titled *Environmental Impact Statement to accompany a State Significant Development Application for an existing Hard Rock Quarry, Property: Lot 21 DP 1024341 and Lot 11 DP 1024564, Pacific Highway, Karuah*, Volumes 1, 2 & 3, dated October 2004 and prepared by Asquith and deWitt Pty Ltd; and
   (c) conditions of this development consent.

3. If there is any inconsistency between the above, the conditions of this consent shall prevail to the extent of the inconsistency.

4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any reports, plans or correspondence that are submitted in accordance with this development consent; and
   (b) the implementation of any actions or measures contained in these reports, plans or correspondence.

LIMITS ON APPROVAL

5. This consent lapses 22 years after the date it commences.

6. The Applicant shall not produce or transport more than 500,000 tonnes of material a year from the development.

7. The Applicant shall not extract more that 11.2 million tonnes of andecite from the site within the period of this consent.

SURRENDER OF CONSENTS

8. Within 6 months of the date of this consent, the Applicant shall surrender all existing development consents and continuing use rights associated with the site, in accordance with clause 97 of the EP&A Regulation.

STRUCTURAL ADEQUACY

9. The Applicant shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

   Notes:
   - *Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.*
   - *Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of development.*

DEMOLITION

10. The Applicant shall ensure that all demolition work is carried out in accordance with *AS 2601-2001: The Demolition of Structures,* or its latest version.

OPERATION OF PLANT AND EQUIPMENT

11. The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are:
    a) maintained in a proper and efficient condition; and
    b) operated in a proper and efficient manner.

IDENTIFICATION OF BOUNDARIES

12. Within 6 months of the date of this consent, the Applicant shall:
    (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction under Stage 1 and Stage 2;
    (b) submit a survey plan of these boundaries and the proposed timing of extraction within Stage 1 and Stage 2 to the Director-General; and
    (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify these limits.

SECTION 94 CONTRIBUTIONS

13. The Applicant shall pay a contribution of 4.7 cents per cubic meter of material per kilometere hauled to Council for the maintenance/repair of public roads in accordance with Council's Section 94 Plan for road haulage, to the satisfaction of Council.

    Note: The applicable contribution rate is reviewed annually by Council and new rates, if applicable become operational from 1 July each year. The contribution is to be paid at the rate that is current at the time.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

[1]NOISE

Noise Impact Assessment Criteria

1. The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 2 at any residence or noise sensitive receptor on privately owned land.

Time Period	Noise Limits dB(A)
	$L_{Aeq\ (15minute)}$
Day (7am to 6pm) Monday to Friday and 7am to 1pm Saturday	48
Evening (6pm to 10pm) Monday to Friday	47
At all other times	46

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

- *Noise from the site is to be measured within thirty meters of any residence or other noise sensitive areas to determine compliance with the noise criteria set out in Table 2.*
- *$LA_{eq(15\ minute)}$ is the equivalent continuous noise level - the level of noise equivalent to the energy average of noise levels occurring over a measurement period.*
- *For the purpose of noise measures required for this condition, the LA_{eq} noise level must be measured or computed at the point defined in this condition over a period of 15 minutes using "FAST" response on the sound level meter.*
- *For the purpose of the noise criteria for this condition, 5dBA must be added to the measured level if the noise is substantially tonal or impulsive in character. The location or point of impact can be different for each development, for example, at the closest residential receiver or at the closest boundary of the development. Measurement locations can be:*
  - *a) 1 meter from the facade of the residence for night time assessment;*
  - *b) at the residential boundary;*
  - *c) 30 meters from the residence (rural situations) where boundary is more than 30 meters from residence.*
- *The noise emission limits identified in this condition apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:*
  - *a) documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions;*
  - *b) where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.*

Operating Hours

2. The Applicant shall comply with the operating hours in Table 1:

Activity	Days of the Week	Time
• Construction • Extraction and processing • Internal and off-site transportation of product	Monday – Friday	7am to 6pm
	Saturday	7am to 1pm
	Sunday and public holidays	No work at any time
Minor maintenance works on plant and machinery	7 days a week and public holidays	7am to 6pm

Table 1: Operating Hours for the Development

Note: Delivery of material outside of the hours of operation permitted by condition 2 is only allowed, where that delivery is required by the police or other authorities for safety reasons; and/or where the operation or personnel or equipment are endangered. In such circumstances, prior notification should be provided to the DEC and affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise Monitoring

3. Within 6 months of the date of this consent, the Applicant shall prepare and implement a Noise Monitoring Program for the development to evaluate compliance with the noise impact assessment criteria in this consent, in consultation with the DEC, and to the satisfaction of the Director-General.

[1] Incorporates DEC GTAs

[2]BLASTING AND VIBRATION

Airblast Overpressure Criteria

4. The Applicant shall ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 3 at any residence or sensitive receiver on privately owned land.

Airblast overpressure level [dB(Lin Peak)]	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Table 3: Airblast Overpressure Limits

Ground Vibration Criteria

5. The Applicant shall ensure that the peak particle velocity from blasting at the development does not exceed the criteria in Table 4 at any residence or sensitive receiver on privately owned land.

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Table 4: Ground Vibration Limits

Blasting Restrictions

6. Blasting at the site may only take place:
   a) between 9am and 3pm Monday to Friday inclusive;
   b) once per week; and
   c) at such other times as may be approved by the DEC.

Public Notice

7. Within 6 months of this consent, the Applicant shall establish a blasting notification register of landowners and other interested persons, within 2 km of the quarry.

8. Throughout the life of the development, the Applicant shall notify all registered individuals of up coming blasting operations at the development site.

Property Inspections

9. Within 3 months of this consent, the Applicant shall advise all landowners within 1 kilometer of the development that they are entitled to a structural property inspection.

10. If the Applicant receives a written request for a structural property inspection from any landowner within 1 kilometer of the development, the Applicant shall within 3 months of receiving this request:
    a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to inspect the condition of any building or structure on the land, and if necessary recommend measures to mitigate any potential blasting impacts; and
    b) give the landowner a copy of the property inspection report.

Property Investigations

11. If any landowner within 1 kilometre of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the development, the Applicant shall within 3 months of receiving this request:
    (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to investigate the claim; and
    (b) give the landowner a copy of the property investigation report.

[2] Incorporates DEC GTAs

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant shall repair the damages to the satisfaction of the Director-General.

If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).

Operating Conditions

12. The Applicant shall implement all practical measures to ensure the safety of people, and avoid and/or minimise any blasting impacts of the development on any privately owned land

[3]AIR QUALITY

Air Quality Impact Assessment Criteria

13. The Applicant shall ensure that the dust emissions generated by the development do not cause additional exceedances of the ambient air quality impact assessment criteria listed in Tables 6, 7, and 8 at any residence on, or on more than 25 percent of, any privately owned land.

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 6: Long Term Impact Assessment Criteria for Particulate Matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 7: Short Term Impact Assessment Criterion for Particulate Matter

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Table 8: Long Term Impact Assessment Criteria for Deposited Dust

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1-1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

14. The Applicant shall implement all practical measures to minimise and/or prevent the emission of dust from the site.

Monitoring

15. Within 6 months of the date of this consent, the Applicant shall prepare and implement an Air Quality Monitoring Program for the development to evaluate compliance with the air quality impact assessment criteria in this consent, in consultation with the DEC, and to the satisfaction of the Director-General.

[4]METEOROLOGICAL MONITORING

16. Within 6 months of this consent, the Applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the development in accordance with the requirements in Approved Methods for Sampling of Air Pollutants in New South Wales, and to the satisfaction of the DEC and the Director-General.

[3] Incorporates DEC GTAs

[4] Incorporates DEC GTAs

FLORA AND FAUNA

Conservation Offset Area

17. The Applicant shall establish, conserve, and maintain the area of vegetation in Lot 12 DP 1024564 marked on the map in Appendix 2, to the satisfaction of the Director- General.

18. Within 3 years of this consent, the Applicant shall implement suitable arrangements to provide long term security for the conservation offset area, to the satisfaction of the Director-General.

    Note: The long term security of the offset can be achieved through a combination of the following: Deed of Agreement with the Minister, rezoning the land under the Great Lakes Local Environment Plan 1996, caveats on the title under the Conveyancing Act 191, etc….

Flora and Fauna Management Plan

19. Before carrying out any clearing associated with Stage 2 of the development, the Applicant shall prepare, and subsequently implement, a Flora and Fauna Management Plan for the development to the satisfaction of the Director-General. This plan must include:
    a) a Vegetation Clearing Protocol;
    b) a Remnant Vegetation Conservation Plan; and
    c) a Conservation Offset Management Plan.

20. The Vegetation Clearing Protocol shall describe the procedures that would be implemented for:
    a) minimising the areas of remnant vegetation to be cleared;
    b) delineating areas of remnant vegetation to be cleared;
    c) protecting areas outside of the disturbance areas;
    d) undertaking pre-clearance surveys (including observations/surveys for threatened species);
    e) identification of fauna management strategies;
    f) conserving and reusing topsoil;
    g) collecting seed from the site for rehabilitation works;
    h) salvaging and reusing material from the site for habitat enhancement; and
    i) controlling weeds.

21. The Remnant Vegetation Conservation Plan shall:
    a) describe what measures would be implemented to conserve, maintain and enhance the vegetation on the site which will not be cleared as part of the development (in particular sub-populations of Tetratheca juncea (Black-eyed Susan)); and
    b) describe how the performance of these measures would be monitored over time.

22. The Conservation Offset Management Plan shall:
    a) describe the habitat in the conservation offset area for following threatened species:
        - Phascogale tapoatafa (Brush-tailed Phascogale);
        - Ninox strenua (Powerful Owl);
        - Phascolarctos cinereus (Koala); and
        - Tetratheca juncea (Black-eyed Susan).
    b) justify why this area is suitable as a conservation offset for the species described in (a) above;
    c) establish baseline data for the existing habitat in the proposed conservation offset area;
    d) describe how the proposed conservation offset area would be managed, including long-term measures for:
        - feral animal control;
        - weed management;
        - stock management; and
        - bush fire management.
    e) describe how the ecological performance of the conservation offset area would be monitored over time.

Reporting

23. The Applicant shall include a progress report on the implementation and performance of the Flora and Fauna Management Plan and the Conservation Offset Strategy in the AEMR.

[5]SURFACE WATER

Pollution of Waters

24. Except as may be expressly provided by an Environment Protection License, the Applicant shall comply with section 120 of the *Protection of the Environment Operations Act 1997* during the carrying out of the development.

Water Discharge Limit

25. The Applicant shall only discharge water from the development in accordance with the provisions of a DEC Environment Protection License

Site Water Management Plan

26. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Site Water Management Plan for the development, in consultation with the DEC, and to the satisfaction of the Director-General. The plan shall detail how site water management on site will be integrated with existing surface water management and erosion and sediment control systems and address surface water management and erosion and sediment control at both the construction and operation phases of the development. This plan must include:
    a) an Erosion and Sediment Control Plan;
    b) a Surface Water Monitoring Program; and
    c) a site water balance.

Erosion and Sediment Control

27. The Erosion and Sediment Control Plan must:
    a) be consistent with the requirements of the Department of Housing's Managing Urban Stormwater: Soils and Construction manual;
    b) identify activities that could cause soil erosion and generate sediment;
    c) describe what measures would be implemented to minimise soil erosion and off-site sediment transport from the following locations:
        - the active quarry face and pit;
        - product and top soil stockpile sites;
        - haul roads;
        - workshop areas;
        - rehabilitation areas; and
        - all other exposed and disturbed surfaces within the site.
    d) describe the location and function of erosion and sediment control structures and their capacity to contain runoff in relation to above average rainfall events;
    e) describe what measures would be implemented to maintain the structures over time;
    f) describe how the effectiveness of the Erosion and Sediment Control Plan will be measured and monitored.

Surface Water Monitoring

28. The Applicant shall:
    a) measure:
        - the volume of water discharged from the site via licensed discharge points;
        - water use on the site;
        - water transfers across the site; and
        - dam and water structure storage levels.
    b) regularly monitor the quality of the surface water discharged from the licensed discharge points on the site;

    to the satisfaction of the DEC and the Director-General.

VISUAL IMPACT

29. The Applicant shall
    a) implement all practicable measures to minimise the visual impacts of the development;
    b) retain, re-vegetate and subsequently maintain a visual bund within the Stage 1 works area (in accordance with Figures 13 and 14 of the EIS) to minimise the visual impacts of development;
    c) include a progress report on the re-vegetation and maintenance of the visual bund in the AEMR,

    to the satisfaction of the Director General.

[5] Incorporates DEC GTAs

[6]TRAFFIC AND TRANSPORT

Pacific Highway

30. The Applicant shall ensure that vehicular access to and from the quarry and the Pacific Highway is via the newly constructed grade separated interchange at Branch Lane.

Parking

31. The Applicant shall provide sufficient parking on-site for all quarry-related traffic to the satisfaction of the Director-General.

Road Haulage

32. The Applicant shall ensure that all loaded vehicles entering or leaving the site are covered.

33. The Applicant shall ensure that sediment and/or other pollutants are not tracked onto any public roads servicing the development.

[7]WASTE MANAGEMENT

34. The Applicant shall:
    a) monitor the amount of waste generated by the development;
    b) investigate ways to minimise waste generated by the development;
    c) implement reasonable and feasible measures to minimise waste generated by the development; and
    d) report on waste management and minimisation in the AEMR.

    to the satisfaction of the Director-General.

35. The Applicant must not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal or any waste generated at the site to be disposed of at the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.

    Note: the above condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the site if it requires an environment protection licence under the Protection of the Environment Operations Act 1997.

BUSHFIRE MANAGEMENT

36. The Applicant shall:
    a) ensure that the development is suitably equipped to respond to any fires on-site; and
    b) assist the Rural Fire Service and Emergency Services as much as possible if there is a fire on-site.; and within 6 months of the date of this consent, the Applicant shall prepare a conservation sensitive Bushfire Management Plan for the development, to the satisfaction of Council and the Rural Fire Service.

PRODUCTION DATA

37. The Applicant shall:
    a) provide annual production data to the DPI (Minerals) using the standard form for that purpose; and
    b) include a copy of this data in the AEMR.

REHABILITATION

38. The Applicant shall progressively rehabilitate the site to the satisfaction of the Director-General.

Rehabilitation Management Plan

39. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Rehabilitation Management Plan for the site, which integrates rehabilitation works for both Stage 1 and Stage 2 areas, to the satisfaction of the Director-General: This plan must:
    a) identify the disturbed area at the site (both Stage 1 and Stage 2);
    b) describe in general the short, medium, and long term measures that would be implemented to rehabilitate the site;
    c) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site; and
    d) describe in detail how rehabilitation measures will be integrated with:

[6] Incorporates DEC GTAs

[7] Incorporates DEC GTAs

- erosion and sediment control works on site;
- remnant vegetation and habitat enhancement and conservation works; and
- visual screening works;

e) describe how the performance of these measures would be monitored over time.

40. Within 5 years of providing the Rehabilitation Management Plan to the Director-General, and every 5 years thereafter, the Applicant shall review and update the plan to the satisfaction of the Director-General.

Reporting

41. The Applicant shall include a progress report on the Rehabilitation Management Plan in the AEMR.

Rehabilitation Bond

42. Within 6 months of the date of this consent, the Applicant shall lodge a suitable conservation and rehabilitation bond for the development with the Director-General. The sum of the bond shall be calculated at $\$2.50/m^2$, or as otherwise agreed to with the Director-General, for the area of disturbance at the development.

    Notes:
    - *If the rehabilitation is completed to the satisfaction of the Director-General, the Director-General will release the rehabilitation bond.*
    - *If the rehabilitation is not completed to the satisfaction of the Director-General, the Director-General will call in all, or part of, the rehabilitation bond, and arrange for the satisfactory completion of these works.*

43. Within 3 years of lodging the rehabilitation bond with the Director-General, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall review, and if necessary revise, the sum of the rehabilitation bond to the satisfaction of the Director-General. This review must consider:
    a) the effects of inflation;
    b) any changes to the area of disturbance; and
    c) the performance of any progressive rehabilitation which has been undertaken at the site.

QUARRY CLOSURE PLAN

44. At least 3 years prior to the cessation of quarrying, the Applicant shall prepare a Quarry Closure Plan for the development, in consultation with the Council, and to the satisfaction of the Director-General. The plan must:
    a) define the objectives and criteria for quarry closure;
    b) investigate options for the future use of the site, including any final void(s);
    c) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and
    d) describe how the performance of these measures would be monitored over time.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:
   a) provide the strategic context for environmental management of the development;
   b) identify the statutory requirements that apply to the development;
   c) describe in general how the environmental performance of the development would be monitored and managed during the development;
   d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the development;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.

2. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 below), the Applicant shall review, and if necessary revise, the Environmental Management Strategy to the satisfaction of the Director-General.

ENVIRONMENTAL MONITORING PROGRAM

3. Within 6 months of the date of this consent, the Applicant shall prepare an Environmental Monitoring Program for the development, in consultation with the relevant agencies, and to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in Schedule 4 of this consent into a single document.

4. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 below), the Applicant shall review, and if necessary revise, the Environmental Monitoring Program to the satisfaction of the Director-General.

ANNUAL REPORTING

5. The Applicant shall prepare and submit an AEMR to the Director-General and the relevant agencies. This report must address:
   a) identify the standards and performance measures that apply to the development;
   b) describe the works carried out in the last 12 months;
   c) describe the works that will be carried out in the next 12 months;
   d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
   e) include a summary of the monitoring results for the development during the past year;
   f) include an analysis of these monitoring results against the relevant:
      - impact assessment criteria;
      - monitoring results from previous years; and
      - predictions in the EIS;
   g) identify any trends in the monitoring results over the life of the development;
   h) identify any non-compliance during the previous year; and
   i) describe what actions were, or are being taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. Within 2 years of the date of this consent, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
   a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;
   b) be consistent with *ISO 19011:2002 - Guidelines for Quality and/ or Environmental Systems Auditing*, or updated versions of this guideline;
   c) assess the environmental performance of the development, and its effects on the surrounding environment;
   d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;

e) review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program; and
f) if necessary, recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.

7. Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, with a response to the recommendations contained in the audit report.

COMMUNITY CONSULTATIVE COMMITTEE

8. Within 3 months of the date of this consent the Applicant shall seek expressions of interest from members of the local community to serve as a member of a Community Consultative Committee for the development.

9. If at least two members of the local community express an interest to serve on the CCC the Applicant shall establish the CCC. The CCC shall:
(a) be comprised of:
- 2 representatives from the Applicant, including the person responsible for environmental management at the quarry;
- 1 representative from Council (if available); and
- at least 2 representatives from the local community,

whose appointment has been approved by the Director-General in consultation with the Council;
(b) be chaired by an independent chairperson, whose appointment has been endorsed by the Director-General;
(c) meet at least twice a year; and
(d) review and provide advice on the environmental performance of the development, including any construction or environmental management plans, monitoring results, audit reports, or complaints.

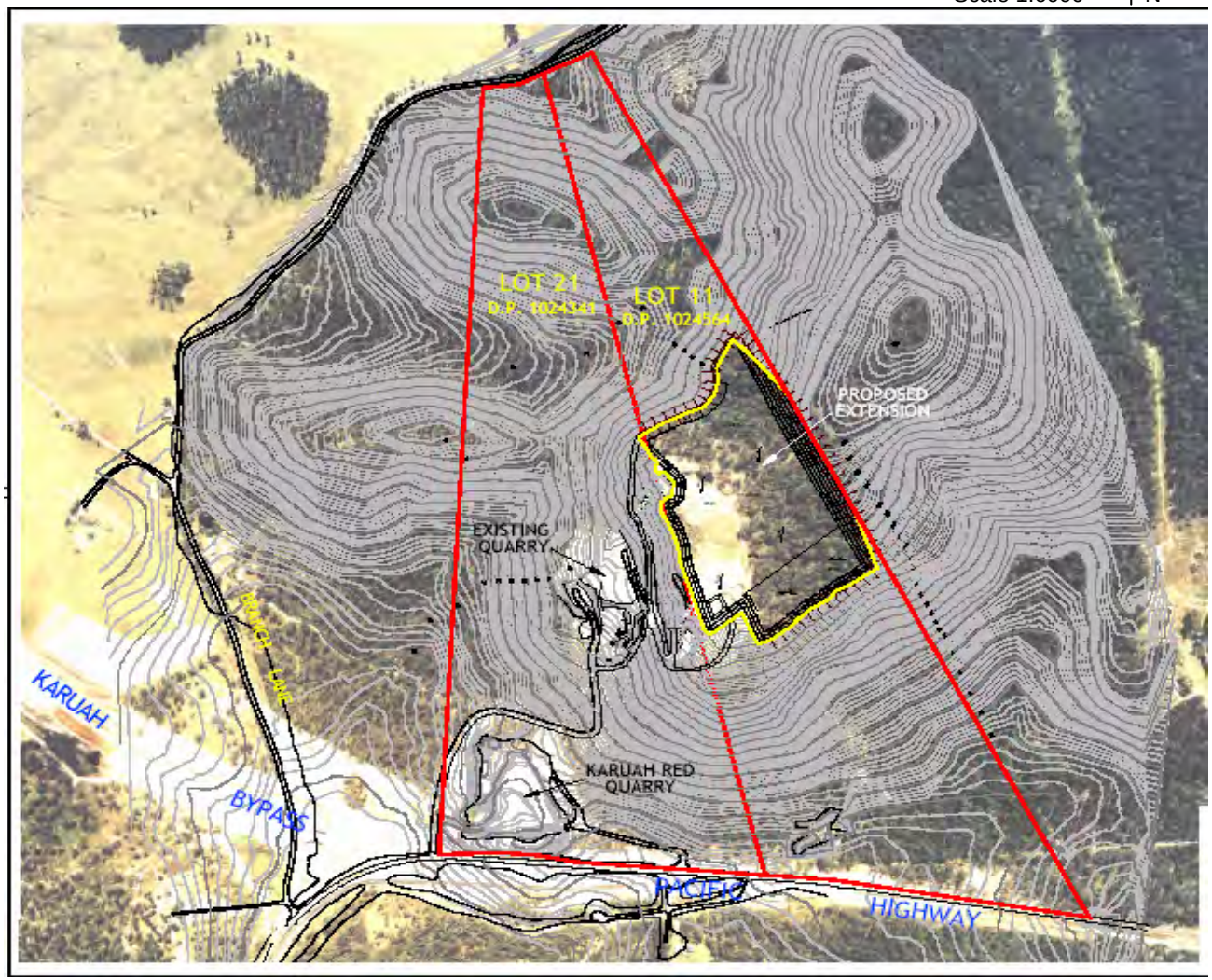
In addition, the Applicant shall, at its own expense:
(a) ensure that 2 of its representatives attend the Committee's meetings;
(b) provide the Committee with regular information on the environmental performance and management of the development;
(c) provide meeting facilities for the Committee;
(d) arrange site inspections for the Committee, if necessary;
(e) take minutes of the Committee's meetings;
(f) make these minutes available to the public for inspection within 14 days of the Committee meeting, or as agreed to by the Committee;
(g) respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the development; and
(h) forward a copy of the minutes of each Committee meeting, and any responses to the Committee's recommendations to the Director-General within a month of acceptance of the minutes by the Committee.

10. If the Applicant does not receive at least two expressions of interest to serve on the CCC the Applicant shall instead develop a communications strategy for consulting with Council and residents within 2 km of the development, to the satisfaction of the Director-General. This strategy should outline how the Applicant will advise Council and nearby residents on its environmental management plans, monitoring results, audit reports or complaints. This communication should occur twice a year.

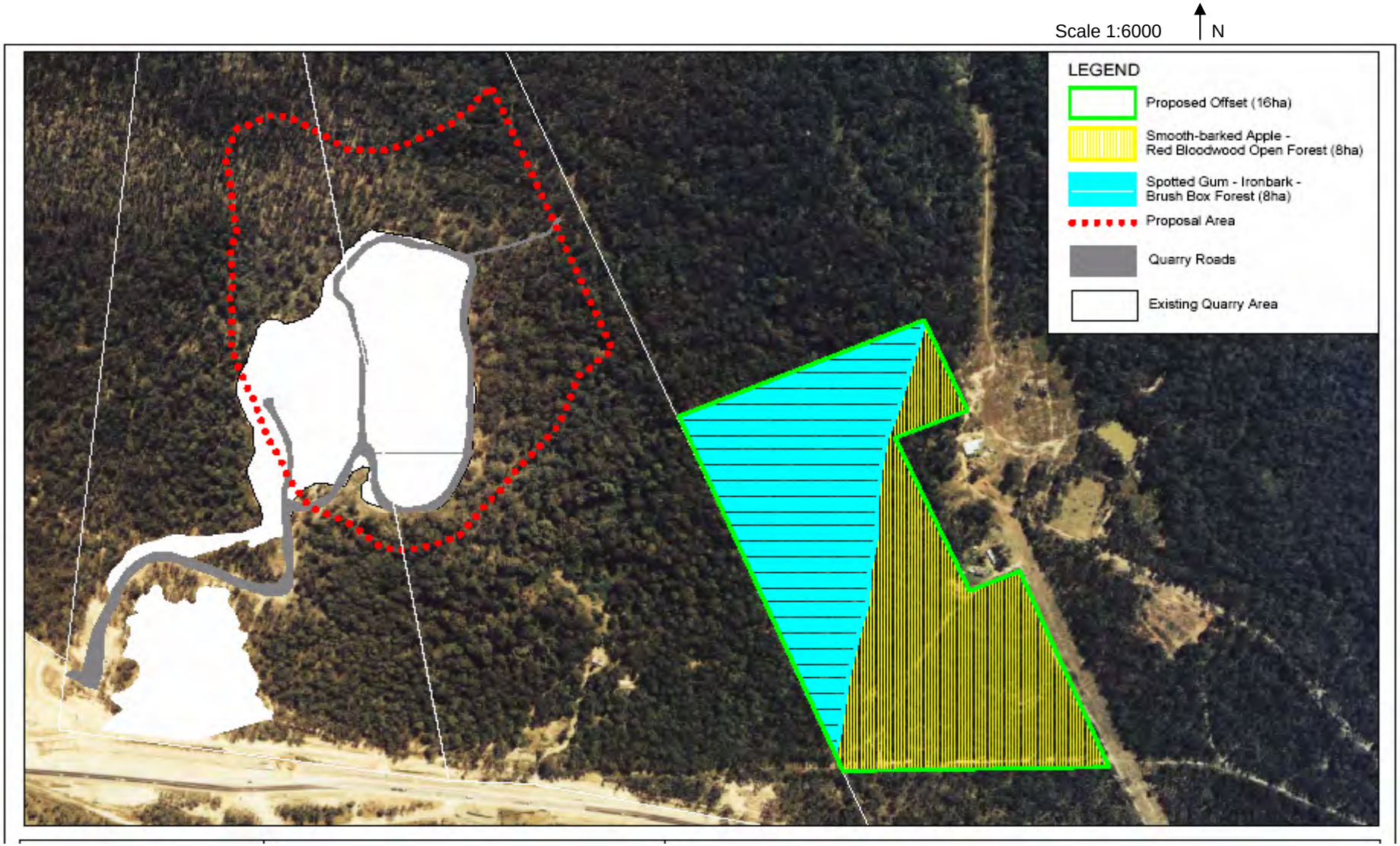
Notes: If during the course of the development, a Community Consultative Committee that has been established is found to be no longer effective, the Director-General may agree to its disbandment.

APPENDIX 1: STAGE 1 AND STAGE 2 QUARRY OPERATIONS

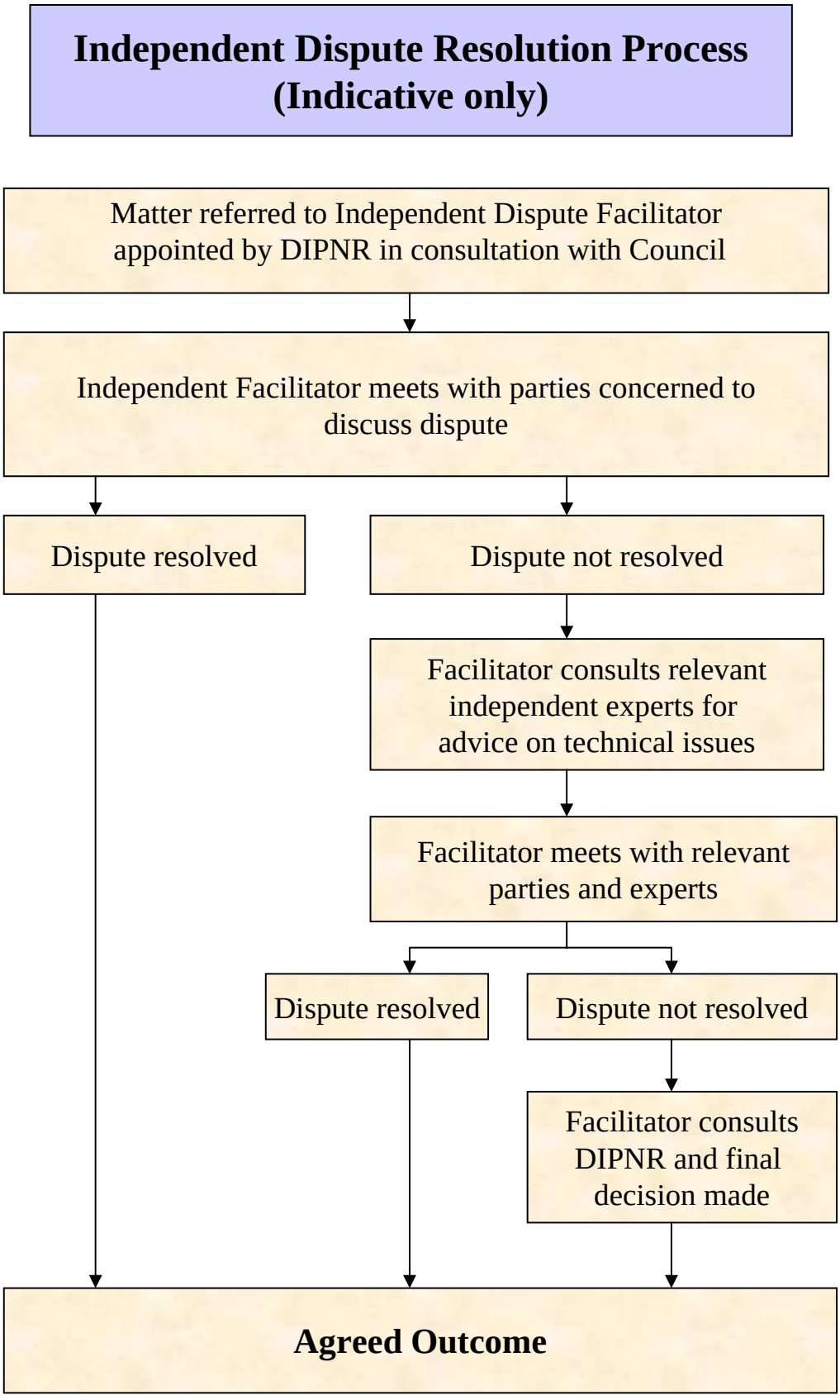
Scale 1:6000 N



APPENDIX 2: CONSERVATION OFFSET AREA



APPENDIX 3: DISPUTE RESOLUTION PROCESS



APPENDIX 2 – Environment Protection Licence

Environment Protection Licence

Licence - 11569

Licence Details	
Number:	11569
Anniversary Date:	16-January

Licensee

HUNTER QUARRIES PTY LTD

PO BOX 3284

THORNTON NSW 2322

Premises

KARUAH QUARRY

CORNER OF ANDERSITE ROAD AND THE BRANCH LANE

KARUAH NSW 2324

Scheduled Activity

Crushing, grinding or separating

Extractive activities

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annually extracted or processed

Region

Metropolitan North - Newcastle

Ground Floor, NSW Govt Offices, 117 Bull Street
NEWCASTLE WEST NSW 2302

Phone: (02) 4908 6800

Fax: (02) 4908 6810

PO Box 488G

NEWCASTLE NSW 2300

Environment Protection Licence

Licence - 11569

Environment Protection Licence

Licence - 11569

Environment Protection Licence

Licence - 11569

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 11569

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HUNTER QUARRIES PTY LTD
PO BOX 3284
THORNTON NSW 2322

subject to the conditions which follow.

Environment Protection Licence

Licence - 11569

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annually extracted or processed

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
KARUAH QUARRY
CORNER OF ANDERSITE ROAD AND THE BRANCH LANE
KARUAH
NSW 2324
LOT 21 DP 1024341, LOT 11 DP 1024564

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

A3.2 Any other document and/or management plan is not to be taken as part of the documentation in condition A3.1, other than those documents and/or management plans specifically referenced in this licence.

Environment Protection Licence

Licence - 11569

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Discharge from sediment dam No 2 identified as "Water Monitoring Site" as shown on map titled "Karuah Hard Rock Quarry Environmental Monitoring Locations, Figure 1" dated 23/06/2014 and filed as EPA document DOC16/422333 on File EF13/3101

P1.2 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
2	Dust deposition monitoring		Dust deposition gauge DDG1, as shown on map titled "Karuah Hard Rock Quarry Environmental Monitoring Locations, Figure 1" dated 23/06/2014 and filed as EPA document DOC16/422333 on File EF13/3101
3	Dust deposition monitoring		Dust deposition gauge DDG2, as shown on map titled "Karuah Hard Rock Quarry Environmental Monitoring Locations, Figure 1" dated 23/06/2014 and filed as EPA document DOC16/422333 on File EF13/3101
4	Dust deposition monitoring		Dust deposition gauge DDG3, as shown on map titled "Karuah Hard Rock Quarry Environmental Monitoring Locations, Figure 1" dated 23/06/2014 and filed as EPA document DOC16/422333 on File EF13/3101

Environment Protection Licence

Licence - 11569

5	Dust deposition monitoring	Dust deposition gauge DDG4, as shown on map titled "Karuah Hard Rock Quarry Environmental Monitoring Locations, Figure 1" dated 23/06/2014 and filed as EPA document DOC16/422333 on File EF13/3101

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	Visible				5 &/or non-visible
pH	pH				6.5 - 8.5
Total suspended solids	milligrams per litre				50

Note: The oil and grease limit specified in the table above is defined as not more than 5 milligrams per litre (mg/L) and/or no visible oil and grease.

Environment Protection Licence

Licence - 11569

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L4 Blasting

L4.1 Blasting in or on the premises must only be carried out between 0900 hours and 1500 hours, Monday to Friday. Blasting in or on the premises must not take place on weekends or Public Holidays without the prior approval of the EPA.

L4.2 The airblast overpressure level from blasting operations in or on the premises must not exceed:
115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period
at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L4.3 The airblast overpressure level from blasting operations in or on the premises must not exceed:
120 dB (Lin Peak) at any time at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L4.4 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed 5 mm/second for more than 5% of the total number of blasts during each reporting period at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L4.5 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed 10 mm/second at any time at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.

L4.6 Error margins associated with any monitoring equipment used to measure airblast overpressure or peak particle velocity are not to be taken into account in determing whether or not the limit(s) has been exceeded.

L4.7 Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

1. *are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or*
2. *interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.*

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 All areas in or on the premises must be maintained in a condition that prevents or minimises the emission of dust to the air.

O3.2 Any activity carried out in or on the premises must be carried out by such practical means as to prevent dust or minimise the emission of dust to the air.

O3.3 Any plant operated in or on the premises must be operated by such practical means to prevent or minimise dust or other air pollutants.

O3.4 All trafficable areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the emmission of dust to the air, or emmission from the premises of wind-blown or traffic generated dust.

O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises in accordance with Part 5.7A of the Protection of the Environment Operations Act 1997 and Part 3A of the Protection of the Environment Operations (General) Regulation 2009.

The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

O5.1 All tanks and storage areas for drums containing material that has potential to cause environmental harm must be bunded or have an alternative spill containment system in-place.

The bunding and/or spill containment systems must be properly designed, engineered, and constructed to be suitable for the material types and quantities stored therein in accordance with all appropriate standards, including Australian Standards (AS)1940 and AS1596.

O5.2 Bunds must:
a) have walls and floors constructed of impervious materials;
b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed);
c) have floors graded to a collection sump; and
d) not have a drain valve incorporated in the bund structure,

or be constructed and operated in a manner that achieves the same environmental outcome.

O5.3 The drainage from all areas at the premises which will liberate suspended solids when stormwater runs over these areas must be diverted into adequately sized sedimentation basins.

O5.4 The sedimentation basins must be maintained to ensure that their design capacity is available for the storage of all runoff from cleared areas.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

Environment Protection Licence

Licence - 11569

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 2,3,4,5

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (total)	milligrams per litre	Daily during any discharge	Grab sample
Oil and Grease	Visible	Daily during any discharge	Visual Inspection
pH	pH	Daily during any discharge	Grab sample
Phosphorus (total)	milligrams per litre	Daily during any discharge	Grab sample
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

Environment Protection Licence

Licence - 11569

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of

receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M6 Blasting

M6.1 The licensee must monitor all blasts carried out in or on the premises at or near the nearest residence or noise sensitive location (such as a school or hospital) that is likely to be most affected by the blast and that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee relating to alternative blasting limits.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

R4.2 **Blast Monitoring Report**

The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return:
a) the date and time of the blast;
b) the location of the blast on the premises;
c) the blast monitoring results at each blast monitoring station; and
d) an explanation for any missing blast monitoring results.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 11569

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 11569

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 11569

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Ms Michelle Bruce

Environment Protection Authority

(By Delegation)

Date of this edition: 16-January-2002

Environment Protection Licence

Licence - 11569

End Notes

1	Licence varied by notice 1015394, issued on 11-Jul-2002, which came into effect on 05-Aug-2002.
2	Licence varied by notice 1048149, issued on 30-Jun-2005, which came into effect on 25-Jul-2005.
3	Licence varied by notice 1061485, issued on 14-Sep-2006, which came into effect on 14-Sep-2006.
4	Licence varied by notice 1072188, issued on 16-Apr-2007, which came into effect on 16-Apr-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1113805, issued on 04-May-2010, which came into effect on 04-May-2010.
7	Licence varied by notice 1502901 issued on 29-Dec-2011
8	Licence varied by notice 1528535 issued on 26-Aug-2016
9	Licence varied by notice 1590598 issued on 20-Jul-2020

APPENDIX 3 – Noise Monitoring Reports

Karuah Quarry

Biannual noise monitoring - S1 2022

Prepared for Hunter Quarries Pty Limited

July 2022

Karuah Quarry

Biannual noise monitoring - S1 2022

Hunter Quarries Pty Limited

E220174 RP#3

July 2022

Version	Date	Prepared by	Approved by	Comments
1	19 July 2022	Lucas Adamson	Katie Teyhan	

Approved by

Katie Teyhan
Associate
19 July 2022

Level 3 175 Scott Street
Newcastle NSW 2300

TABLE OF CONTENTS

Appendices

Tables

Figures

1 Introduction

EMM Consulting Pty Limited (EMM) was engaged to undertake noise compliance monitoring on behalf of Hunter Quarries Pty Limited (Hunter Quarries). This report presents the results and findings of attended noise monitoring (conducted on 16 June 2022) and unattended noise monitoring (conducted between 16-28 June 2022).

Noise compliance monitoring is required to be undertaken in accordance with the *Karuah Quarry Environmental Monitoring Program* (EMP) which has been prepared to meet the relevant requirements of Department of Planning and Environment (DPE), Development Consent DA 265-10-2004 (current as of 16 June 2022) and Environment Protection Authority (EPA) Environment Protection Licence (EPL) 11569 as varied on 20 July 2020 (current as of 16 June 2022).

The Noise Policy for Industry (NPfI) (EPA 2017) has also been referenced as part of this assessment.

Several technical terms are discussed in this report. These are explained in the Glossary.

2 Noise limits and monitoring requirements

2.1 Noise limits

Karuah Quarry noise limits are provided in Table 2, Condition 1 of Schedule 3 of DA 265-10-2004. An extract of the relevant section of DA 265-10-2004 pertaining to noise is provided in Appendix A. The approved EMP adopts two attended noise monitoring locations and one unattended noise monitoring location that are representative of residences outlined in the DA 265-10-2004. The relevant noise criteria from the DA 265-10-2004 and EMP are summarised in Table 2.1.

Table 2.1 Noise limits

Monitoring location	Day $L_{Aeq,15\ minute}$, dB	Evening $L_{Aeq,15\ minute}$, dB	All other times $L_{Aeq,15\ minute}$, dB
Any residence or noise sensitive receptor on privately owned land	48	47	46

The table notes for Table 2, Condition 1 of Schedule 3 of DA 265-10-2004 state that the noise measurement equipment must be located:

- approximately 1 metre from the dwelling façade for a maximum noise level event assessment (night-time only);
- approximately on the residential boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises.

2.2 Meteorological conditions

The table notes for Table 2, Condition 1 of Schedule 3 of DA 265-10-2004 also state that noise generated by the project is to be measured in accordance with the following meteorological conditions:

> The noise emission limits identified in this condition apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions.

2.3 Modifying factors

The table notes for Table 2, Condition 1 of Schedule 3 of DA 265-10-2004 state the following with regard to the application of modifying factors for annoying characteristics:

> For the purpose of the noise criteria for this condition, 5 dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character.

Although the above condition does not include a reference to low frequency noise, the application of modification factor corrections with reference to Fact Sheet C of the NPfI (EPA 2017) will be expected by regulators. The modification factor corrections outlined in Sections 2.3.1 and 2.3.2 should be applied to the measured quarry noise levels where applicable.

2.3.1 Low frequency noise criteria

Fact sheet C of the NPfI provides guidelines for applying modifying factor corrections to account for low frequency noise (LFN) emissions. The NPfI specifies that a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels identifies the potential for an unbalanced spectrum and potential increased annoyance.

Where a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels is identified, the one-third octave noise levels recorded should be compared to the values (ie threshold levels) in Table C2 of the NPfI, which has been reproduced in Table 2.2.

Table 2.2 One-third octave LFN threshold levels

	One-third octave $L_{Zeq,15\ minute}$ threshold levels												
Frequency (Hz)	**10**	**12.5**	**16**	**20**	**25**	**31.5**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
dB (Z)	92	89	86	77	69	61	54	50	50	48	48	46	44

The following modifying factor correction is to be applied where the site 'C-weighted' and site 'A-weighted' noise emission level is 15 dB or more, and:

- where any of the one-third octave noise levels in Table 3.2 are exceeded by up to and including 5 dB and cannot be mitigated, a 2 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period; or
- where any of the one-third octave noise levels in Table 3.2 are exceeded by more than 5 dB and cannot be mitigated, a 2 dB positive adjustment to measured/predicted A-weighted levels applies for the daytime period and a 5 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period.

Hence, where possible throughout each survey the operator has estimated the difference between site 'C-weighted' and site 'A-weighted' noise emission levels by matching audible sounds with the response of the sound analyser (L_{Ceq}-L_{Aeq}). Where this was deemed to be 15 dB or greater, the measured one-third octave centre frequency levels have been compared to the values in Table 2.2 to identify the relevant modifying factor correction (if applicable). This method has been applied to this assessment as presented in Section 5.

2.3.2 Tonal noise

Tonal noise is defined in the NPfI as noise containing a prominent frequency and characterised by a definite pitch. Examples of tonal noise sources include ventilation fans, reversing beepers or alarms. It is of note that Karuah Quarry uses broadband reversing alarms instead of beeping alarms. Fact sheet C of the NPfI provides guidelines for applying modifying factor corrections to account for tonal noise emissions.

The NPfI specifies that a 5 dB positive adjustment to measured/predicted A-weighted levels applies if the level of one-third octave band centre frequency (measured using unweighted or Z-weighted weighting) exceeds the level of the adjacent band on both sides by:

- 5 dB or more if the centre frequency of the band containing the tone is in the range 500-10,000 Hz; or
- 8 dB or more if the centre frequency of the band containing the tone is in the range 160-400 Hz; or
- 15 dB or more if the centre frequency of the band containing the tone is in the range 25-125 Hz.

Quarry noise experienced at the nearest residences is relatively continuous (e.g. quarry hum). Field observations during the noise compliance monitoring, and the measured one-third octave noise levels from 25 Hz to 12 kHz, confirm that site noise is not tonal in nature at any of the monitoring locations. Hence, adjustments to measured levels were not required for tonality.

2.4 Noise monitoring methodology requirements

An extract of the requirements for noise monitoring as outlined in Section 5.4.1 of the EMP is provided here.

> In order to measure the possible impact of noise resulting from quarry operations, the following monitoring will be undertaken at the two (2) nearest residences downwind and/or in line-of sight from the quarry and not owned or under agreement with HQPL:
>
> a) An unattended (continuous 24hr) noise monitor will be placed in the field to measure noise for at least four (4) full days of monitoring each six months;
>
> b) An attended survey (15-minutes meeting EPA standards) will be undertaken at the two nearest residences on a six monthly basis. This survey will be undertaken in conjunction with the unattended survey described above;
>
> c) A suitably qualified noise consultant will be engaged to undertake 15-minute attended noise surveys to investigate any complaints received by HQPL; and
>
> d) Onsite logged climatic data (particularly winds) will be utilised to assist with a timely management response to any noise issue that may arise. This is further discussed in Section 5.5.

3 Assessment methodology

3.1 Noise monitoring locations

To quantify noise emissions from Karuah Quarry, long-term unattended noise monitoring and 15-minute attended noise monitoring surveys were completed at the two nearest residences downwind from the Quarry. Noise monitoring was conducted as guided by the procedures described in Australian Standard AS 1055-2018, *Acoustics - Description and Measurement of Environmental Noise* and the NPfI (EPA, 2017). The noise monitoring locations as per the site's approved EMP, and their coordinates are listed in Table 3.1 and are shown in Figure 3.1.

Table 3.1 Noise monitoring locations

Monitoring location	Location description	Coordinates (MGA56)	
		Easting	Northing
NM1	5772 Pacific Highway, Karuah	406508	6388888
NM2	5760 Pacific Highway, Karuah	406273	6388842

3.2 Instrumentation

3.2.1 Attended noise monitoring

A Brüel & Kjær (B&K) 2250 Type 1 sound analyser (s/n 3029363) was used to conduct 15-minute attended measurements and record 1/3 octave centre frequency and statistical noise indices. The sound analyser was calibrated before and on completion of the survey using a Svantek SV36 calibrator (s/n 79952). The instruments were within their NATA laboratory calibration period during the time of these readings and certificates are provided in Appendix B.

Where possible throughout each survey, the operator quantified the contribution of each significant noise source. This was done by matching audible sounds with the response of the sound analyser (where applicable) and/or via post-analysis of recorded noise data.

3.2.2 Unattended noise monitoring

The logging was carried out using two Acoustic Research Labs (ARL) Ngara environmental noise loggers that were in place from Thursday 16 July to Tuesday 28 June 2022.

Calibration of instrumentation was checked prior to and following measurements. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates (refer Appendix B).

Data affected by adverse meteorological conditions and by spurious and uncharacteristic events has been excluded from the results in accordance with methodologies provided in the NPfI.

3.3 Weather and operating conditions

The meteorological data was obtained from the Karuah Quarry on-site weather station. Communications with the site operator and observations made during the attended measurements confirmed that typical site operations were occurring during the noise surveys.

KEY

- Site boundary
- A Noise monitoring location
- Major road
- Minor road
- Vehicular track
- Watercourse/drainage line
- Cadastral boundary
- Waterbody
- NPWS reserve
- State forest

Source: EMM (2021); ADW Johnson (2020); DFSI (2017); ICSM (2012); GA (2011); ASGC (2006)

0 0.5 1 km

GDA 1994 MGA Zone 56

N

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Noise monitoring locations

Karuah Quarry
Bi-annual noise monitoring
Figure 3.1

EMM creating opportunities

4 Review of data and discussion

4.1 Attended noise monitoring

The results of EMM's attended noise measurements are summarised in Table 4.1. Karuah Quarry's noise contribution was determined using in-field observations and post-analysis of recorded data as required. Attended noise monitoring was completed on 16 June 2022. It is of note that Karuah Quarry does not currently operate during the evening or night-time periods and therefore, noise monitoring was conducted during the daytime period only.

The meteorological data for the monitoring period was sourced from the Karuah Quarry on-site weather station to determine applicability of noise criteria. In accordance with DA 265-10-2004, noise limits were applicable during both measurements.

Given that Karuah Quarry was not audible during either of the two measurements, in accordance with the NPfI, LFN modifying factors were not applied to estimated site noise levels at either of the monitoring locations. Graphs of the total linear noise levels measured in one-third octave frequency bands are presented in Appendix C.

Karuah Quarry noise contributions and cumulative quarry noise contributions were below (i.e. complied with) the relevant noise limits at both monitoring locations.

Table 4.1 Attended noise monitoring results – S1 2022

Location	Date	Start time (Period)	Total noise levels, dB							Site contribution, dB		EPL / PA Limits, dB	Meteorological conditions[2] EPL limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. Factor [1]	L_{Aeq}	L_{Aeq}			
NM1	16/6	08:16	47	51	54	56	58	69	67	Nil	IA	48	0.3 m/s @ 297° A stability class Y	Nil	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, consistently audible. Bird noise and a dog barking occasionally audible.
NM2	16/6	08:38	52	59	63	66	69	71	71	Nil	IA	48	0.3 m/s @ 307° A stability class Y	Nil	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, consistently audible. Bird noise and resident noise occasionally audible.

Notes: *1. Modifying factor correction for LFN in accordance with Fact sheet C of the NPfI.*
2. Meteorological data were taken as an average over 15 minutes from the Karuah Quarry on-site weather station (Refer to Section 5.1).
3. IA = inaudible.
4. N/A = not applicable.

4.2 Unattended noise monitoring

As per section 5.4.1 of the EMP, unattended noise monitoring was conducted at two locations to the south of the site, NM1 and NM2. The locations of the unattended noise monitors are shown in Figure 3.1. The unattended noise monitoring results have been summarised in Table 4.2.

Table 4.2 Unattended noise monitoring data – S1 2022

Location	Period	Measured noise levels, dB	
		L_{A90}	$L_{Aeq,period}$
NM1 16-28 June 2022	Day	51	69
	Evening	49	55
	Night	-	-
NM2 16-28 June 2022	Day	Results were not available due to vandalism of the unattended noise monitor located at NM2	
	Evening		
	Night		

Observations during the operator attended measurements indicate that the dominant source of noise at both unattended noise monitoring locations is road traffic noise from the Pacific Highway (particularly during peak traffic periods), with bird noise, dogs barking and resident noise also noted to be audible.

It is of note that due to device failure and vandalism, the data captured by both unattended noise monitors at locations NM1 and NM2 did not meet the minimum requirements of at least four full days of monitoring data, as per the Karuah Quarry EMP.

In lieu of this, a review of the historical unattended noise monitoring data, supplied by Hunter Quarries, has been completed. These unattended noise monitoring results for NM1 and NM2 have been summarised in Tables 4.3 and 4.4, respectively.

Table 4.3 Historical unattended noise monitoring data – NM1

Semester	Period	Measured noise levels, dB			
		L_{A90}	L_{Aeq}	L_{A10}	L_{A1}
S1 2020 April 2020	Day	54	61	64	67
	Evening	50	60	63	67
	Night	45	58	63	66
S2 2020 November 2020	Day	51	57	60	64
	Evening	49	59	62	66
	Night	47	58	63	66

Table 4.3 Historical unattended noise monitoring data – NM1

Semester	Period	Measured noise levels, dB			
		L_{A90}	L_{Aeq}	L_{A10}	L_{A1}
S1 2021 May 2021	Day	56	63	69	73
	Evening	59	63	68	72
	Night	60	61	70	73
S2 2021 November/ December 2021	Day	44	50	58	64
	Evening	45	53	57	63
	Night	39	50	55	60

Table 4.4 Historical unattended noise monitoring data – NM2

Semester	Period	Measured noise levels, dB			
		L_{A90}	L_{Aeq}	L_{A10}	L_{A1}
S1 2020 April 2020	Day	60	65	68	72
	Evening	53	63	67	70
	Night	48	60	65	69
S2 2020 November 2020	Day	54	63	67	70
	Evening	52	63	66	71
	Night	47	62	66	71
S1 2021 May 2021	Day	53	65	67	72
	Evening	59	64	69	74
	Night	59	64	70	74
S2 2021 November/ December 2021	Day	55	63	67	72
	Evening	50	62	66	70
	Night	41	60	65	72

Observations during the historical operator attended measurements suggest that the main sources of noise at the unattended noise monitoring locations are road traffic noise from the Pacific Highway (particularly during peak traffic periods), with bird noise also noted to be audible.

A review of the historical unattended noise monitoring data has found no evident trends associated with Karuah Quarry operations. Without an operator present to discern the noise sources contributing to the measured noise levels, it is difficult to establish any meaningful conclusions or trends from the historical unattended noise monitoring data.

5 Conclusion

EMM has completed a review of operational noise from Karuah Quarry within the surrounding community based on attended measurements conducted on 16 June 2022 and longer-term unattended noise monitoring from Thursday 16 June to Tuesday 28 June 2022.

The meteorological data for the monitoring period was sourced from the Karuah Quarry on-site weather station to determine applicability of noise criteria. In accordance with DA 265-10-2004, noise limits were applicable during both attended measurements.

The assessment of noise contributions from site included consideration of modifying factors for noise characteristics where relevant and in accordance with the NPfI.

Karuah Quarry noise contributions were below (satisfied) the noise limits at all monitoring locations for this round of monitoring.

A review of historical unattended noise monitoring data found that no meaningful conclusions, events or trends could be associated with Karuah Quarry operations.

Glossary

Several technical terms are discussed in this report. These are explained in Table G.1.

Table G.1 Glossary of acoustic terms

Term	Description
dB	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
L_{A1}	The 'A-weighted' noise level which is exceeded 1% of the time.
$L_{A1,1minute}$	The 'A-weighted' noise level exceeded for 1% of the specified time period of 1 minute.
L_{A10}	The 'A-weighted' noise level which is exceeded 10% of the time. It is approximately equivalent to the average of maximum noise level.
L_{A90}	Commonly referred to as the background noise level. The 'A-weighted' noise level exceeded 90% of the time.
L_{Aeq}	The energy average noise from a source. This is the equivalent continuous 'A-weighted' sound pressure level over a given period. The $L_{Aeq,15\ minute}$ descriptor refers to an L_{Aeq} noise level measured over a 15 minute period.
L_{Amin}	The minimum 'A-weighted' noise level received during a measuring interval.
L_{Amax}	The maximum root mean squared 'A-weighted' sound pressure level (or maximum noise level) received during a measuring interval.
L_{Ceq}	The equivalent continuous 'C-weighted' sound pressure level over a given period. The $L_{Ceq,15\ minute}$ descriptor refers to an L_{Ceq} noise level measured over a 15 minute period. C-weighting can be used to measure low frequency noise.
Day period	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
Evening period	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Night period	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.
Temperature Inversion	A meteorological condition where the atmospheric temperature increases with altitude.

It is useful to have an appreciation of the decibel (dB), the unit of noise measurement. Table G.2 gives an indication as to what an average person perceives about changes in noise levels. Examples of common noise levels are provided in Figure G.1.

Table G.2 Perceived change in noise level

Change in sound pressure level (dB)	Perceived change in noise
up to 2	not perceptible
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times (or quarter) as loud

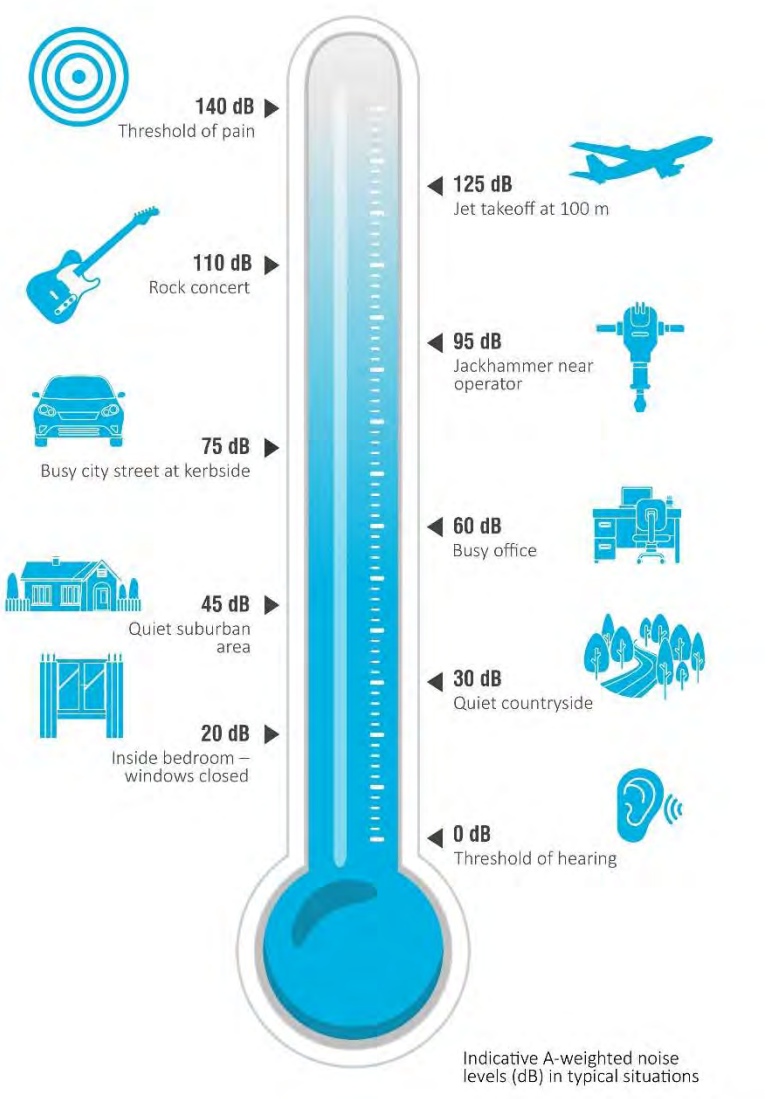

Figure G.1 Common noise levels

References

Department of Planning and Environment (DPE), Development Consent DA 265-10-2004, 2005.

Environment Protection Authority, Environment Protection Licence 11569, 2020.

Environment Protection Authority, Industrial Noise Policy Application notes, 2013.

Environment Protection Authority, Industrial Noise Policy, 2000.

Environment Protection Authority, Noise Policy for Industry, 2017.

SLR Consulting, Karuah Quarry Environmental Monitoring Program, 2014.

Appendix A
Project approval extract

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SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

[1]NOISE

Noise Impact Assessment Criteria

1. The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 2 at any residence or noise sensitive receptor on privately owned land.

Time Period	Noise Limits dB(A)
	$L_{Aeq\ (15minute)}$
Day (7am to 6pm) Monday to Friday and 7am to 1pm Saturday	48
Evening (6pm to 10pm) Monday to Friday	47
At all other times	46

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

- *Noise from the site is to be measured within thirty meters of any residence or other noise sensitive areas to determine compliance with the noise criteria set out in Table 2.*
- *$LA_{eq(15\ minute)}$ is the equivalent continuous noise level - the level of noise equivalent to the energy average of noise levels occurring over a measurement period.*
- *For the purpose of noise measures required for this condition, the LA_{eq} noise level must be measured or computed at the point defined in this condition over a period of 15 minutes using "FAST" response on the sound level meter.*
- *For the purpose of the noise criteria for this condition, 5dBA must be added to the measured level if the noise is substantially tonal or impulsive in character. The location or point of impact can be different for each development, for example, at the closest residential receiver or at the closest boundary of the development. Measurement locations can be:*
  - *a) 1 meter from the facade of the residence for night time assessment;*
  - *b) at the residential boundary;*
  - *c) 30 meters from the residence (rural situations) where boundary is more than 30 meters from residence.*
- *The noise emission limits identified in this condition apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:*
  - *a) documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions;*
  - *b) where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.*

Operating Hours

2. The Applicant shall comply with the operating hours in Table 1:

Activity	Days of the Week	Time
• Construction	Monday – Friday	7am to 6pm
• Extraction and processing	Saturday	7am to 1pm
• Internal and off-site transportation of product	Sunday and public holidays	No work at any time
Minor maintenance works on plant and machinery	7 days a week and public holidays	7am to 6pm

Table 1: Operating Hours for the Development

Note: Delivery of material outside of the hours of operation permitted by condition 2 is only allowed, where that delivery is required by the police or other authorities for safety reasons; and/or where the operation or personnel or equipment are endangered. In such circumstances, prior notification should be provided to the DEC and affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise Monitoring

3. Within 6 months of the date of this consent, the Applicant shall prepare and implement a Noise Monitoring Program for the development to evaluate compliance with the noise impact assessment criteria in this consent, in consultation with the DEC, and to the satisfaction of the Director-General.

[1] Incorporates DEC GTAs

Appendix B
Calibration Certificates

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CERTIFICATE OF CALIBRATION

CERTIFICATE NO: C30591

EQUIPMENT TESTED : Sound Level Calibrator

Manufacturer: Svantek
Type No: SV-36 **Serial No:** 79952
Owner: EMM Consulting Pty Ltd
L3, 175 Scott Street
Newcastle, NSW 2300
Tests Performed: Measured Output Pressure level, Frequency & Distortion
Comments: See Details overleaf. All Test Passed.

Parameter	Pre-Adj	Adj Y/N	Output: (dB re 20 µPa)	Frequency (Hz)	THD&N (%)
Level1:	NA	N	94.12 dB	999.99 Hz	1.58 %
Level2:	NA	N	114.05 dB	999.99 Hz	1.12 %
Uncertainty			±0.11 dB	±0.05%	±0.20 %
Uncertainty (at 95% c.l.) k=2					

CONDITION OF TEST:

Ambient Pressure 1007 hPa ±1 hPa
Temperature 21 °C ±1° C
Relative Humidity 43 % ±5%

Date of Receipt : 16/09/2021
Date of Calibration : 16/09/2021
Date of Issue : 16/09/2021

Acu-Vib Test Procedure: AVP02 (Calibrators)
Test Method: AS IEC 60942 - 2017

CHECKED BY: .....

AUTHORISED SIGNATURE: .....
Hein Soe

Accredited for compliance with ISO/IEC 17025 - Calibration
Results of the tests, calibration and/or measurements included in this document are traceable to SI units through reference equipment that has been calibrated by the Australian National Measurement Institute or other NATA accredited laboratories demonstrating traceability.

This report applies only to the item identified in the report and may not be reproduced in part.

The uncertainties quoted are calculated in accordance with the methods of the ISO Guide to the Uncertainty of Measurement and quoted at a coverage factor of 2 with a confidence interval of approximately 95%.

NATA
WORLD RECOGNISED ACCREDITATION
Accredited Lab No. 9262
Acoustic and Vibration Measurements

Acu-Vib Electronics
CALIBRATIONS SALES RENTALS REPAIRS
Head Office & Calibration Laboratory
Unit 14, 22 Hudson Ave, Castle Hill NSW 2154
(02) 9680 8133
www.acu-vib.com.au

HBK HOTTINGER BRÜEL & KJÆR
The Calibration Laboratory
Skodsborgvej 307, DK-2850 Nærum, Denmark

ilac-MRA DANAK
CAL Reg.No. 307
Member of EA MLA

CERTIFICATE OF CALIBRATION

No: CDK2007931

CALIBRATION OF

Sound Level Meter:	Brüel & Kjær Type 2250	No: 3029363	Id: -
Microphone:	Brüel & Kjær Type 4189	No: 3260501	
PreAmplifier:	Brüel & Kjær Type ZC-0032	No: 30109	
Supplied Calibrator:	None		
Software version:	BZ7222 Version 4.7.6	Pattern Approval:	-
Instruction manual:	BE1712-22		

CUSTOMER

EMM Consulting
Ground Floor, Suite 1
20 Chandos Street
2065 St Leonards
New South Wales, Australia

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C

Environment conditions: *See actual values in sections.*

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC 61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used to perform the periodic tests. The accreditation assures the traceability to the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 8.2 - DB: 8.20) by using procedure B&K proc 2250, 4189 (IEC 61672:2013).

RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2020-11-26

Date of issue: 2020-11-26

Lene Petersen
Calibration Technician

Erik Bruus
Approved Signatory

Acoustic Research Labs Pty Ltd
Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C21718

Client Details EMM Consulting
Ground Floor, Suite 01, 20 Chandos Street
St Leonards NSW 2065

Equipment Tested/ Model Number : ARL Ngara
Instrument Serial Number : 878123
Microphone Serial Number : 20271
Pre-amplifier Serial Number : 28217

Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature :	23.6°C	**Ambient Temperature :**	24°C
Relative Humidity :	43.1%	**Relative Humidity :**	49%
Barometric Pressure :	100.08kPa	**Barometric Pressure :**	100kPa

Calibration Technician : Lucky Jaiswal **Secondary Check:** Harrison Kim
Calibration Date : 28 Oct 2021 **Report Issue Date :** 29 Oct 2021

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*N/A*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13dB*	*Temperature*	*±0.2°C*
1kHz	*±0.13dB*	*Relative Humidity*	*±2.4%*
8kHz	*±0.14dB*	*Barometric Pressure*	*±0.015kPa*
Electrical Tests	*±0.10dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C21292

Client Details	EMM 87 Wickham Terrace Brisbane QLD 4000
Equipment Tested/ Model Number :	ARL Ngara
Instrument Serial Number :	878113
Microphone Serial Number :	322081
Pre-amplifier Serial Number :	28145

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	21.2°C	**Ambient Temperature :**	21.6°C
Relative Humidity :	52.8%	**Relative Humidity :**	52%
Barometric Pressure :	101.94kPa	**Barometric Pressure :**	101.87kPa

Calibration Technician : Jeff Yu
Calibration Date : 24 May 2021
Secondary Check: Rhys Gravelle
Report Issue Date : 24 May 2021
Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*N/A*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.12dB*	*Temperature*	*±0.2°C*
1kHz	*±0.11dB*	*Relative Humidity*	*±2.4%*
8kHz	*±0.13dB*	*Barometric Pressure*	*±0.015kPa*
Electrical Tests	*±0.10dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

Appendix C

Low Frequency Noise analysis

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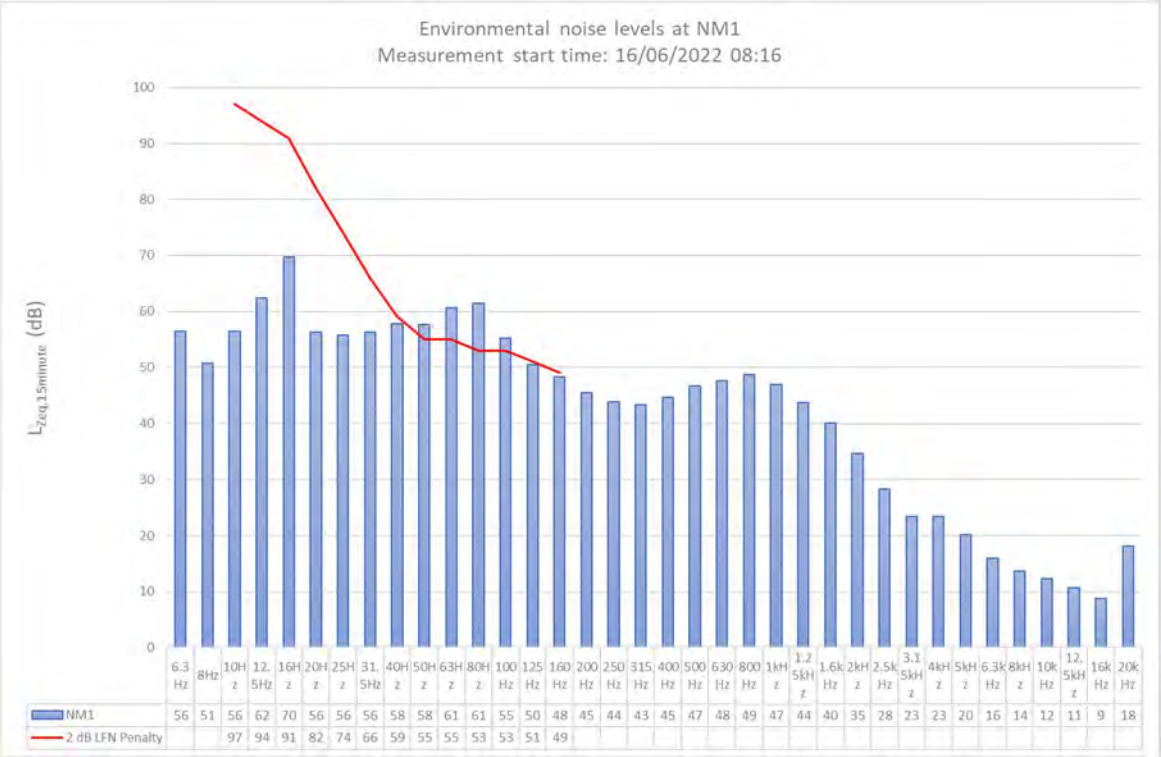

Figure C.1 **Location NM1 - Total measured one-third octave band frequencies**

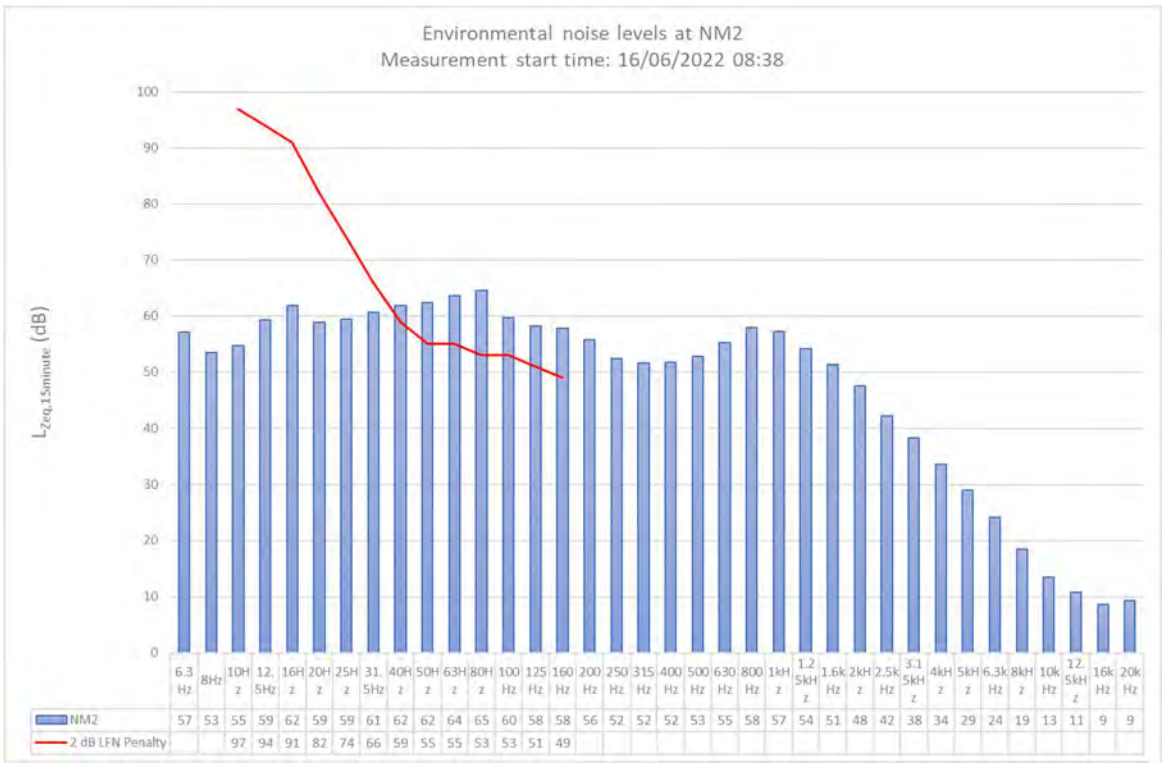

Figure C.2 **Location NM2 - Total measured one-third octave band frequencies**

Australia

SYDNEY
Ground floor 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA
Level 2 Suite 2.04
15 London Circuit
Canberra City ACT 2601

ADELAIDE
Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
Suite 8.03 Level 8 454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH
Suite 9.02 Level 9 109 St Georges Terrace
Perth WA 6000

Canada

TORONTO
2345 Younge Street Suite 300
Toronto ON M4P 2E5

VANCOUVER
60 W 6th Ave Suite 200
Vancouver BC V5Y 1K1

linkedin.com/company/emm-consulting-pty-limited

emmconsulting.com.au

Karuah Quarry

Biannual noise monitoring - S2 2022

Prepared for Hunter Quarries Pty Limited

December 2022

Karuah Quarry

Biannual noise monitoring - S2 2022

Hunter Quarries Pty Limited

E220174 RP#6

December 2022

Version	Date	Prepared by	Approved by	Comments
1	16 December 2022	Lucas Adamson	Tony Welbourne	

Approved by

Tony Welbourne
Associate Director
16 December 2022

Level 3 175 Scott Street
Newcastle NSW 2300

TABLE OF CONTENTS

Appendices

Tables

Figures

1 Introduction

EMM Consulting Pty Limited (EMM) was engaged to undertake noise compliance monitoring on behalf of Hunter Quarries Pty Limited (Hunter Quarries). This report presents the results and findings of attended noise monitoring (done on 23 November 2022) and unattended noise monitoring (conducted between 23 November and 1 December 2022).

Noise compliance monitoring is required to be undertaken in accordance with the *Karuah Quarry Environmental Monitoring Program* (EMP) which has been prepared to meet the relevant requirements of Department of Planning and Environment (DPE), Development Consent DA 265-10-2004 (current as of 1 December 2022) and Environment Protection Authority (EPA) Environment Protection Licence (EPL) 11569 as varied on 20 July 2020 (current as of 1 December 2022).

The Noise Policy for Industry (NPfI) (EPA 2017) has also been referenced as part of this assessment.

Several technical terms are used in this report. These are explained in the Glossary.

2 Noise limits and monitoring requirements

2.1 Noise limits

Karuah Quarry noise limits are provided in Table 2, Condition 1 of Schedule 3 of DA 265-10-2004. An extract of the relevant section of DA 265-10-2004 pertaining to noise is provided in Appendix A. The approved EMP adopts two attended noise monitoring locations and one unattended noise monitoring location that are representative of residences outlined in the DA 265-10-2004. The relevant noise criteria from DA 265-10-2004 and the EMP are summarised in Table 2.1.

Table 2.1 Noise limits

Monitoring location	Day $L_{Aeq,15\ minute}$, dB	Evening $L_{Aeq,15\ minute}$, dB	All other times $L_{Aeq,15\ minute}$, dB
Any residence or noise sensitive receptor on privately owned land	48	47	46

The table notes for Table 2, Condition 1 of Schedule 3 of DA 265-10-2004 state that the noise measurement equipment must be located:

- approximately 1 metre from the dwelling façade for a maximum noise level event assessment (night-time only);
- approximately on the residential boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises.

2.2 Meteorological conditions

The table notes for Table 2, Condition 1 of Schedule 3 of DA 265-10-2004 also state that noise generated by the project is to be measured in accordance with the following meteorological conditions:

> The noise emission limits identified in this condition apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions.

2.3 Modifying factors

Assessment and reporting of modifying factors has been undertaken in accordance with Fact Sheet C of the NPfI.

2.4 Noise monitoring methodology requirements

An extract of the requirements for noise monitoring as outlined in Section 5.4.1 of the EMP is provided here.

> In order to measure the possible impact of noise resulting from quarry operations, the following monitoring will be undertaken at the two (2) nearest residences downwind and/or in line-of sight from the quarry and not owned or under agreement with HQPL:
>
> a) An unattended (continuous 24hr) noise monitor will be placed in the field to measure noise for at least four (4) full days of monitoring each six months;

b) An attended survey (15-minutes meeting EPA standards) will be undertaken at the two nearest residences on a six monthly basis. This survey will be undertaken in conjunction with the unattended survey described above;

c) A suitably qualified noise consultant will be engaged to undertake 15-minute attended noise surveys to investigate any complaints received by HQPL; and

d) Onsite logged climatic data (particularly winds) will be utilised to assist with a timely management response to any noise issue that may arise. This is further discussed in Section 5.5.

3 Assessment methodology

3.1 Noise monitoring locations

To quantify noise emissions from Karuah Quarry, long-term unattended noise monitoring and 15-minute attended noise monitoring surveys were completed at the two nearest residences downwind from the Quarry. Noise monitoring was conducted as guided by the procedures described in Australian Standard AS 1055-2018, *Acoustics - Description and Measurement of Environmental Noise* and the NPfI (EPA, 2017). The noise monitoring locations are as per the site's approved EMP, and their coordinates are listed in Table 3.1 and shown in Figure 3.1.

Table 3.1 Noise monitoring locations

Monitoring location	Location description	Coordinates (MGA56)	
		Easting	Northing
NM1	5772 Pacific Highway, Karuah	406508	6388888
NM2	5760 Pacific Highway, Karuah	406273	6388842

3.2 Instrumentation

3.2.1 Attended noise monitoring

A Brüel & Kjær (B&K) 2250 Type 1 sound analyser (s/n 3029363) was used to conduct 15-minute attended measurements and record 1/3 octave centre frequency and statistical noise indices. The sound analyser was calibrated before and on completion of the survey using a Svantek SV36 calibrator (s/n 79952). The instruments were within their NATA laboratory calibration period during the time of these readings and certificates are provided in Appendix B.

Where possible throughout each survey, the operator quantified the contribution of each significant noise source. This was done by matching audible sounds with the response of the sound analyser (where applicable) and/or via post-analysis of recorded noise data.

3.2.2 Unattended noise monitoring

The logging was carried out using Acoustic Research Labs (ARL) Ngara and EL316 environmental noise loggers that were in place from Wednesday 23 November to Thursday 1 December 2022.

Calibration of instrumentation was checked prior to and following measurements. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates (refer Appendix B).

Data affected by adverse meteorological conditions and by spurious or uncharacteristic events has been excluded from the results in accordance with methodologies provided in the NPfI.

3.3 Weather and operating conditions

The meteorological data was obtained from the Karuah Quarry on-site weather station. Communications with the site operator and observations made during the attended measurements confirmed that typical site operations were occurring during attended noise measurements.

KEY

- Site boundary
- A Noise monitoring location
- Major road
- Minor road
- Vehicular track
- Watercourse/drainage line
- Cadastral boundary
- Waterbody
- NPWS reserve
- State forest

Source: EMM (2021); ADW Johnson (2020); DFSI (2017); ICSM (2012); GA (2011); ASGC (2006)

0 0.5 1 km

GDA 1994 MGA Zone 56

N

\\emmsvr1\EMM3\2021\E210782 - KEO Noise monitoring\8 GIS\02 Maps\N001 NoiseMonitoringLocations 20211206 01.mxd 6/12/2021

Noise monitoring locations

Karuah Quarry
Bi-annual noise monitoring
Figure 3.1

EMM creating opportunities

4 Review of data and discussion

4.1 Attended noise monitoring

The results of EMM's attended noise measurements are summarised in Table 4.1. Karuah Quarry's noise levels were determined using in-field observations and post-analysis of recorded data as required. Attended noise monitoring was completed on 23 November 2022. It is of note that Karuah Quarry does not currently operate during the evening or night periods and therefore, noise monitoring was done during the day period only.

Meteorological data for the monitoring period was sourced from the Karuah Quarry on-site weather station to determine applicability of noise criteria. In accordance with DA 265-10-2004, noise limits were applicable during both measurements.

Karuah Quarry was inaudible at both monitoring locations and so the site complied with all relevant noise limits.

Table 4.1 Attended noise monitoring results – S2 2022

Location	Date	Start time (Period)	Total noise levels, dB							Site noise level, dB		EPL/PA Limits, dB	Meteorological conditions[2] EPL limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. Factor[1]	L_{Aeq}	L_{Aeq}			
A	23/11	07:07	43	50	54	57	59	62	65	Nil	IA	48	0.9 m/s @ 301° A stability class Y	N/A	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, insects and birds consistently audible. A dog barking occasionally audible.
B	23/11	07:50	50	57	64	67	72	78	73	Nil	IA	48	1.9 m/s @ 284° A stability class Y	N/A	**Karuah Quarry inaudible.** Traffic on the Pacific Highway, insects and birds consistently audible.

Notes: *1. Modifying factor correction for LFN in accordance with Fact sheet C of the NPfI.*
2. Meteorological data were taken as an average over 15 minutes from the Karuah Quarry on-site weather station (Refer to Section 5.1).
3. IA = inaudible.
4. N/A = not applicable.

4.2 Unattended noise monitoring

As per section 5.4.1 of the EMP, unattended noise monitoring was conducted at two locations to the south of the site, NM1 and NM2. The locations of the unattended noise monitors are shown in Figure 3.1. The unattended noise monitoring data has been summarised in Table 4.2.

Table 4.2 Unattended noise monitoring data – S2 2022

Location	Period	Measured noise levels, dB	
		L_{A90}	$L_{Aeq,period}$
NM1 23 November- 1 December 2022	Day	45	52
	Evening	46	55
	Night	43	51
NM2 23 November- 1 December 2022	Day	56	64
	Evening	49	63
	Night	39	62

Observations during the operator attended measurements indicate that the dominant source of noise at both unattended noise monitoring locations is road traffic noise from the Pacific Highway (particularly during peak traffic periods), with insects, birds and dogs barking also noted to be audible.

Notwithstanding, a review of the unattended noise monitoring data has found no correlation between recorded noise levels and events associated with Karuah Quarry operations. Without an operator present to discern the noise sources contributing to the measured noise levels, it is difficult to establish any meaningful conclusions or trends from the unattended noise monitoring data.

Conclusion

EMM has completed a review of operational noise from Karuah Quarry within the surrounding community based on attended measurements conducted on 23 November 2022. Longer-term unattended noise monitoring was also conducted between Wednesday 23 November 2022 and Thursday 1 December 2022.

Meteorological data for the monitoring period was sourced from the Karuah Quarry on-site weather station to determine applicability of noise criteria. In accordance with DA 265-10-2004, noise limits were applicable during both attended measurements.

Karuah Quarry noise contributions were below (satisfied) the noise limits at all monitoring locations for this round of monitoring.

A review of the unattended noise monitoring data found that no meaningful conclusions, events or trends could be associated with Karuah Quarry operations.

Glossary

Several technical terms are discussed in this report. These are explained in Table G.1.

Table G.1 Glossary of acoustic terms

Term	Description
dB	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
L_{A1}	The 'A-weighted' noise level which is exceeded 1% of the time.
$L_{A1,1minute}$	The 'A-weighted' noise level exceeded for 1% of the specified time period of 1 minute.
L_{A10}	The 'A-weighted' noise level which is exceeded 10% of the time. It is approximately equivalent to the average of maximum noise level.
L_{A90}	Commonly referred to as the background noise level. The 'A-weighted' noise level exceeded 90% of the time.
L_{Aeq}	The energy average noise from a source. This is the equivalent continuous 'A-weighted' sound pressure level over a given period. The $L_{Aeq,15\ minute}$ descriptor refers to an L_{Aeq} noise level measured over a 15 minute period.
L_{Amin}	The minimum 'A-weighted' noise level received during a measuring interval.
L_{Amax}	The maximum root mean squared 'A-weighted' sound pressure level (or maximum noise level) received during a measuring interval.
L_{Ceq}	The equivalent continuous 'C-weighted' sound pressure level over a given period. The $L_{Ceq,15\ minute}$ descriptor refers to an L_{Ceq} noise level measured over a 15 minute period. C-weighting can be used to measure low frequency noise.
Day period	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
Evening period	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Night period	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.
Temperature Inversion	A meteorological condition where the atmospheric temperature increases with altitude.

It is useful to have an appreciation of the decibel (dB), the unit of noise measurement. Table G.2 gives an indication as to how the average person perceives changes in noise level. Examples of common noise levels are provided in Figure G.1.

Table G.2 Perceived change in noise level

Change in sound pressure level (dB)	Perceived change in noise
up to 2	not perceptible
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times (or quarter) as loud

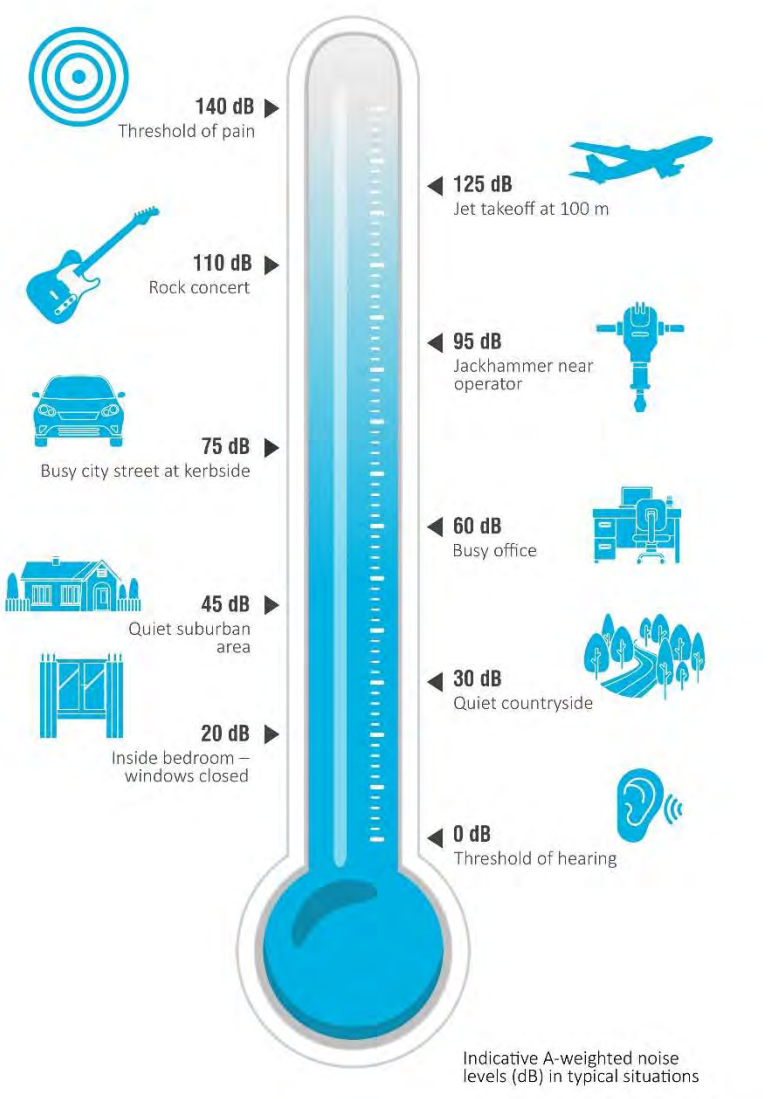

Figure G.1 Common noise levels

References

Department of Planning and Environment (DPE), Development Consent DA 265-10-2004, 2005.

Environment Protection Authority, Environment Protection Licence 11569, 2020.

Environment Protection Authority, Noise Policy for Industry, 2017.

SLR Consulting, Karuah Quarry Environmental Monitoring Program, 2014.

Appendix A
Project approval extract

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SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

[1]NOISE

Noise Impact Assessment Criteria

1. The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 2 at any residence or noise sensitive receptor on privately owned land.

Time Period	Noise Limits dB(A)
	$L_{Aeq\ (15minute)}$
Day (7am to 6pm) Monday to Friday and 7am to 1pm Saturday	48
Evening (6pm to 10pm) Monday to Friday	47
At all other times	46

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

- *Noise from the site is to be measured within thirty meters of any residence or other noise sensitive areas to determine compliance with the noise criteria set out in Table 2.*
- *$LA_{eq(15\ minute)}$ is the equivalent continuous noise level - the level of noise equivalent to the energy average of noise levels occurring over a measurement period.*
- *For the purpose of noise measures required for this condition, the LA_{eq} noise level must be measured or computed at the point defined in this condition over a period of 15 minutes using "FAST" response on the sound level meter.*
- *For the purpose of the noise criteria for this condition, 5dBA must be added to the measured level if the noise is substantially tonal or impulsive in character. The location or point of impact can be different for each development, for example, at the closest residential receiver or at the closest boundary of the development. Measurement locations can be:*
  - *a) 1 meter from the facade of the residence for night time assessment;*
  - *b) at the residential boundary;*
  - *c) 30 meters from the residence (rural situations) where boundary is more than 30 meters from residence.*
- *The noise emission limits identified in this condition apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:*
  - *a) documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions;*
  - *b) where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.*

Operating Hours

2. The Applicant shall comply with the operating hours in Table 1:

Activity	Days of the Week	Time
• Construction	Monday – Friday	7am to 6pm
• Extraction and processing	Saturday	7am to 1pm
• Internal and off-site transportation of product	Sunday and public holidays	No work at any time
Minor maintenance works on plant and machinery	7 days a week and public holidays	7am to 6pm

Table 1: Operating Hours for the Development

Note: Delivery of material outside of the hours of operation permitted by condition 2 is only allowed, where that delivery is required by the police or other authorities for safety reasons; and/or where the operation or personnel or equipment are endangered. In such circumstances, prior notification should be provided to the DEC and affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise Monitoring

3. Within 6 months of the date of this consent, the Applicant shall prepare and implement a Noise Monitoring Program for the development to evaluate compliance with the noise impact assessment criteria in this consent, in consultation with the DEC, and to the satisfaction of the Director-General.

[1] Incorporates DEC GTAs

Appendix B
Calibration Certificates

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CERTIFICATE OF CALIBRATION

CERTIFICATE NO: C33872

EQUIPMENT TESTED : Sound Level Calibrator

Manufacturer: Svantek
Type No: SV-36 **Serial No:** 79952
Owner: EMM Consulting Pty Ltd
L3, 175 Scott Street
Newcastle, NSW 2300
Tests Performed: Measured Output Pressure level, Frequency & Distortion
Comments: See Details overleaf. All Test Passed.

Parameter	Pre-Adj	Adj Y/N	Output: (dB re 20 µPa)	Frequency (Hz)	THD&N (%)
Level1:	NA	N	94.09 dB	1000.00 Hz	1.12 %
Level2:	NA	N	114.06 dB	1000.00 Hz	0.71 %
Uncertainty			±0.11 dB	±0.05%	±0.20 %
Uncertainty (at 95% c.l.) k=2					

CONDITION OF TEST:

Ambient Pressure 1004 hPa ±1 hPa
Temperature 23 °C ±1° C
Relative Humidity 55 % ±5%

Date of Receipt : 26/09/2022
Date of Calibration : 29/09/2022
Date of Issue : 29/09/2022

Acu-Vib Test Procedure: AVP02 (Calibrators)
Test Method: AS IEC 60942 - 2017

CHECKED BY: .....

AUTHORISED SIGNATURE: .....
Hein Soe

Accredited for compliance with ISO/IEC 17025 - Calibration
Results of the tests, calibration and/or measurements included in this document are traceable to SI units through reference equipment that has been calibrated by the Australian National Measurement Institute or other NATA accredited laboratories demonstrating traceability.

This report applies only to the item identified in the report and may not be reproduced in part.

The uncertainties quoted are calculated in accordance with the methods of the ISO Guide to the Uncertainty of Measurement and quoted at a coverage factor of 2 with a confidence interval of approximately 95%.

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Acoustic and Vibration Measurements

Acu-Vib Electronics
CALIBRATIONS SALES RENTALS REPAIRS

Head Office & Calibration Laboratory
Unit 14, 22 Hudson Ave. Castle Hill NSW 2154
(02) 9680 8133
www.acu-vib.com.au

CERTIFICATE OF CALIBRATION

CERTIFICATE NO: SLM34169

EQUIPMENT TESTED: Sound Level Meter

Manufacturer:	B & K		
Type No:	2250	**Serial No:**	3029363
Mic. Type:	4189	**Serial No:**	3260501
Pre-Amp. Type:	ZC0032	**Serial No:**	30109
Filter Type:	1/3 Octave	**Test No:**	F034175

Owner: EMM Consulting
Suite 01, 20 Chandos St
St Leonards NSW 2065

Tests Performed: IEC 61672-3:2013 & IEC 61260-3:2016

Comments: All Test passed for Class 1. (See overleaf for details)

CONDITIONS OF TEST:

Ambient Pressure	1002	hPa ±1 hPa	**Date of Receipt :**	02/11/2022
Temperature	24	°C ±1° C	**Date of Calibration :**	03/11/2022
Relative Humidity	35	% ±5%	**Date of Issue :**	04/11/2022

Acu-Vib Test Procedure: AVP10 (SLM) & AVP06 (Filters)

CHECKED BY: ..... **AUTHORISED SIGNATURE:** .....

Jack Kielt

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Results of the tests, calibration and/or measurements included in this document are traceable to SI units through reference equipment that has been calibrated by the Australian National Measurement Institute or other NATA accredited laboratories demonstrating traceability.

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North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate

Calibration Number C22051

Client Details EMM Consulting
Ground Floor, Suite 01, 20 Chandos Street
St Leonards NSW 2065

Equipment Tested/ Model Number : ARL Ngara
Instrument Serial Number : 878127
Microphone Serial Number : 322707
Pre-amplifier Serial Number : 28565

Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature :	23.5°C	**Ambient Temperature :**	24°C
Relative Humidity :	49.3%	**Relative Humidity :**	48.3%
Barometric Pressure :	99.5kPa	**Barometric Pressure :**	99.51kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 2 Feb 2022
Secondary Check: Max Moore
Report Issue Date : 2 Feb 2022

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*N/A*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13dB*	*Temperature*	*±0.1°C*
1kHz	*±0.13dB*	*Relative Humidity*	*±1.9%*
8kHz	*±0.14dB*	*Barometric Pressure*	*±0.014kPa*
Electrical Tests	*±0.10dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - Calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Sound Level Meter
AS 1259.1:1990 - AS 1259.2:1990
Calibration Certificate

Calibration Number C21144

Client Details EMM Consulting
Level 3/175 Scott Street
Newcastle NSW 2300

Equipment Tested/ Model Number : ARL EL-316
Instrument Serial Number : 16-207-005
Microphone Serial Number : 322776
Pre-amplifier Serial Number : 28435

Atmospheric Conditions
Ambient Temperature : 22.3°C
Relative Humidity : 53.1%
Barometric Pressure : 101.06kPa

Calibration Technician : Jeff Yu
Calibration Date : 10 Mar 2021
Secondary Check: Max Moore
Report Issue Date : 11 Mar 2021

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
10.2.2: Absolute sensitivity	*Pass*	10.3.4: Inherent system noise level	*Pass*
10.2.3: Frequency weighting	*Pass*	10.4.2: Time weighting characteristic F and S	*Pass*
10.3.2: Overload indications	*Pass*	10.4.3: Time weighting characteristic I	*Pass*
10.3.3: Accuracy of level range control	*Pass*	10.4.5: R.M.S performance	*Pass*
8.9: Detector-indicator linearity	*Pass*	9.3.2: Time averaging	*Pass*
8.10: Differential level linearity	*Pass*	9.3.5: Overload indication	*Pass*

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.13dB*	*Temperature*	*±0.2°C*
12.5kHz	*±0.19dB*	*Relative Humidity*	*±2.4%*
16kHz	*±0.31dB*	*Barometric Pressure*	*±0.015kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.1dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

The sound level meter under test has been shown to conform to the type 1 requirements for periodic testing as described in AS 1259.1:1990 and AS 1259.2:1990 for the tests stated above.

NATA
WORLD RECOGNISED ACCREDITATION

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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APPENDIX 4 – Audit Action Plan

Hunter Quarries – Karuah Quarry

Independent Environmental Audit – Response to Audit Recommendations

Approval ID	Requirement	Evidence Collected	Independent Audit Findings / Recommendations	Compliance Status	Hunter Quarries Commitment	Timing / Effective By	2022 Annual Review Comments
Blast Hours	6. Blasting at the site may only take place: a) between 9am and 3pm Monday to Friday inclusive; b) once per week; and c) at such other times as may be approved by the DEC.	AEMRs; EMP (2014); Biannual Noise Monitoring Reports (2014-to current)	As reported in the 2018 AEMR, a blasting event occurred on 8 October 2018 at 3:05pm. As outlined in this condition, blasting is to occur between 9am and 3pm (Monday to Friday) inclusive. No evidence was provided during the audit to suggest that approval had been received by EPA or DPE to allow blasting to be undertaken outside of standard hours. Based on the above Hunter Quarries are deemed non-compliant with this condition. It is reported in AEMRs that two blasting events occurred on the same day, up to 10 minutes apart on: – 30/1/2018. – 3/2/2017 – 8/4/2016 – 8/7/2016 – 14/11/2014 and – 1/12/2014 Sub-condition b) of this condition outlines blasting events may only take once per week. Hunter Quarries should seek advice from DPE as to whether these events are considered to be the same blasting 'event' due to the small amount of time between blasts.	Non-Compliant	HQ agrees with EMMs recommendation for this non-compliance. HQ will consult with the DPE to determine what constitutes a blast event and then review the Blast Management Plan and make any necessary updates.	29 May 2020	Action closed out in 2020. Consultation between HQ and the Department concluded that the blasts were compliant with conditions of the Consent, excluding the blast on 8 October 2018 at 3:05 PM. The latter mention blast was outside approved hours and therefore the Department recorded the breach (reference correspondence). Revision of the BMP was not deemed necessary at this time.
Air Quality Impact Assessment Criteria	13. The Applicant shall ensure that the dust emissions generated by the development do not cause additional exceedances of the ambient air quality impact assessment criteria listed in Tables 6, 7, and8 at any residence on, or on more than 25 percent of, any privately owned land. Pollutant Averaging period Criterion Total suspended particulate (TSP) matter Annual 90 µg/m3Particulate matter < 10 µm (PM10) Annual 30 µg/m3	AEMRs; and EMP (2014)	The last audit (MCW 2014) outlines a letter from DECC dated 17 July 2008 describing that the Department no longer requires Heggies (the company monitoring at the time) to undertake regular PM10 monitoring. Therefore, the requirement for ongoing monitoring using the High Volume Air Sampler (HVAS) did not appear to be required. This condition requires the monitoring of PM10 and TSP in order to show compliance. It is recommended that Hunter Quarries enter formal discussions regarding the requirement for PM10 / TSP monitoring with DPE following this audit, and following agreement with DPE, amend the EMP to include HVAS, PM10 and TSP monitoring for Karuah and report data in future AEMRs, in accordance with development consent.	Non-Compliant	HQ undertakes regular TSP and PM10 monitoring for Karuah East Quarry operation using HVAS located at the closest resident to operation. In line with EMMS recommendation, HQ will update the EMP to include reporting of TSP and PM10 monitoring in future environmental monitoring reports.	30 June 2020	Post the IEA, HQ are reporting on the HVAS monitoring in Karuah Quarry environmental monitoring reports including 2020, 2021 and 2022 AEMRs. EMP revision is ongoing.

Approval ID	Requirement	Evidence Collected	Independent Audit Findings / Recommendations	Compliance Status	Hunter Quarries Commitment	Timing / Effective By	2022 Annual Review Comments
Air Quality Impact Assessment Criteria	Pollutant Averaging Period Criterion Particulate matter < 10 µm (PM10) 24 hour 50 µg/m3	AEMRs; and EMP (2014)	The last audit (MCW 2014) outlines a letter from DECC dated 17 July 2008 describing that the Department no longer requires Heggies (the company monitoring at the time) to undertake regular PM10 monitoring. Therefore, the requirement for ongoing monitoring using the High Volume Air Sampler (HVAS) did not appear to be required. This condition requires the monitoring of PM10 and TSP in order to show compliance. It is recommended that Hunter Quarries enter formal discussions regarding the requirement for PM10 / TSP monitoring with DPE following this audit, and following agreement with DPE, amend the EMP to include HVAS, PM10 and TSP monitoring for Karuah and report data in future AEMRs, in accordance with development consent.	Non-Compliant	HQ undertakes regular TSP and PM10 monitoring for Karuah East Quarry operation using HVAS located at the closest resident to operation. In line with EMMS recommendation, HQ will update the EMP to include reporting of TSP and PM10 monitoring in future environmental monitoring reports.	30 June 2020	As above.
Conservation Offset Area	18. Within 3 years of this consent, the Applicant shall implement suitable arrangements to provide long term security for the conservation offset area, to the satisfaction of the Director-General. Note: The long-term security of the offset can be achieved through a combination of the following: Deed of Agreement with the Minister, rezoning the land under the Great Lakes Local Environment Plan 1996, caveats on the title under the Conveyancing Act 191, etc….	No conservation deed supplied	The last audit (MCW 2014) outlined that the Lot 12 (offset area) is not currently secured in 'perpetuity' at the time and classed the condition as 'non-compliant'. During the previous audit, Hunter Quarries were reported as stating that 'they were hoping to put a restriction (caveat) on the title, which would be registered with land titles office'. This would mean the area would only be used for conservation. MCW 2014 recommended that Hunter Quarries seek Lot 12 security in perpetuity through a formal land title change through NSW Land and Property in consultation with the DPE. As outlined in the 2016 AEMR, on the 23 June 206, Hunter Quarries provided a submission seeking long term security for the conservation area through the implementation of a caveat on the title of Lot 12. It is stated in AEMR 2018 and AEMR 2017 that the caveat would be progressed further with the DPE during 2019. No formalised evidence or correspondence was observed during the audit period (e.g. no deed or conservation bond for offset security). It is recommended Hunter Quarries follow up with DPE and OEH in regards to arrangement (e.g. deed or agreement) which details long term security for the conservation offset area.	Non-Compliant	HQ will consult with the DPE and OEH in regards to the conservation offset area. HQ will be guided by DPE and/or OEH in meeting compliance with this condition.	30 October 2020	Closed out in 2021. Consultation with HQ and relevant Government Departments was undertaken to finalise the Conservation Offset Agreement in 2021. Refer to Appendix 5 of the 2021 AEMR for relevant documents.
Conservation Offset Area	19. Before carrying out any clearing associated with Stage 2 of the development, the Applicant shall prepare, and subsequently implement, a Flora and Fauna Management Plan for the development to the satisfaction of the Director-General. This plan must include: a) a Vegetation Clearing Protocol; b) a Remnant Vegetation Conservation Plan; and c) a Conservation Offset Management Plan.	AEMRs; EMP (2014); EMS (2016); and Flora and Fauna Management Plan (2014)	The Flora and Fauna Management Plan (2014) was sighted as part of the audit. No evidence of correspondence with DPE for the approval of the 2014 version of the management plan was able to be provided. It is recommended that Hunter Quarries reviews and updates Flora and Fauna Management Plan (including sub-plans).	Non-Compliant	HQ agrees with EMMs recommendation for this non-compliance. HQ will revise the Flora and Fauna Management Plan and seek approval from DPE.	30 June 2020	Action closed out in 2020. revised and approved by DPE. Monitoring has begun, with the first round completed in the Spring/Summer period of 2020. Report is still being finalised.

Approval ID	Requirement	Evidence Collected	Independent Audit Findings / Recommendations	Compliance Status	Hunter Quarries Commitment	Timing / Effective By	2022 Annual Review Comments
Conservation Offset Area	21. The Remnant Vegetation Conservation Plan shall: a) describe what measures would be implemented to conserve, maintain and enhance the vegetation on the site which will not be cleared as part of the development (in particular sub-populations of *Tetratheca juncea* (Black-eyed Susan)); and b) describe how the performance of these measures would be monitored over time.	AEMRs; EMP (2014); EMS (2016); and Flora and Fauna Management Plan (2014)	Hunter Quarries has prepared and implemented a Remnant Vegetation Conservation Plan which adequately addressed measures for conservation, maintenance and enhancement of the vegetation on site and includes performance measures over time. It is noted that monitoring efforts for remnant vegetation areas ceased in 2011. The last audit (MCW 2014) recommended that Environmental Monitoring be conducted biannually to ensure all ecological values are monitored to determine any changes within communities.	Non-Compliant	HQ will review the EMP and in consultation with DPE, look to address this non-compliance.	30 June 2020	As above.
Site Water Management Plan	26. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Site Water Management Plan for the development, in consultation with the DEC, and to the satisfaction of the Director-General. The plan shall detail how site water management on site will be integrated with existing surface water management and erosion and sediment control systems and address surface water management and erosion and sediment control at both the construction and operation phases of the development. This plan must include: a) an Erosion and Sediment Control Plan; b) a Surface Water Monitoring Program; and c) a site water balance.	AEMRs; Site Water Management Plans (2014, 2015, 2016); and EPL 11569	Site Water Management Plan 2016 approved by DPE in letter dated 1 April 2016, sighted and meets conditions of consent. Audit actions from the previous audit, while addressed in Table 1 of the current Site Water Management Plan (2016), do not appear to be fully implemented at the site, as evidenced by the discharge scenario identified during the site inspection (refer to Condition 24 above). It was unclear during the site inspection if a water level sensor was installed on Dam 2 or if an alarm was set for high water levels in the dam. The WMP states that these items have been installed and implemented. EMM recommends that Hunter Quarries update the Site Water Management Plan to formalise adequate management procedures of discharge point.	Non-Compliant	HQ will revise the Site Water Management Plan, including review of the discharge procedure, and seek approval from the DPE. NOTE: LDP001 is fitted with a metered discharge valve and capacity indicator. HQ would not look to install a lock on the valve lever as this could result in future issues with the leave and whole valve.	30 June 2020	Revision of the SWMP is ongoing.
Surface Water Monitoring	28. The Applicant shall: a) measure: • the volume of water discharged from the site via licensed discharge points; • water use on the site; • water transfers across the site; and • dam and water structure storage levels. b) regularly monitor the quality of the surface water discharged from the licensed discharge points on the site; to the satisfaction of the DEC and the Director- General.	Site Water Management Plans (2014 and 2015) (Erosion and Sediment Control Plan, Surface Water Monitoring Program and site water balance) Water Usage Information	The last audit (MCW 2014) considered part a) of this condition 'non-compliant' and part b) 'compliant'. The following recommendations were made in light of this, including: - Revise and update SWMP to formalise adequate management procedures for discharge point, including the review of the monitoring and notification of high-water levels at Sediment dam 2; and - Formalise roles and responsibilities in relation to water discharge events. The WMP (2016) states that the water level in Sediment Dam 2 is monitored via an electronic height sensor, however the sensor did not appear to be operating during the site inspection. The SWMP describes that the flow of water can be estimated based on the flow through the discharge pipeline. The 2018 AEMR outlines that the site has the ability to pump water back up into the pit area (unused section) to increase capacity. Based on the site inspection it is	Non-Compliant	HQ will revise the Site Water Management Plan, including review of the discharge procedure, and seek approval from the DPE. NOTE: LDP001 is fitted with a metered discharge valve and capacity indicator. HQ would not look to install a lock on the valve lever as this could result in future issues with the leave and whole valve.	30 June 2020	As above.

Approval ID	Requirement	Evidence Collected	Independent Audit Findings / Recommendations	Compliance Status	Hunter Quarries Commitment	Timing / Effective By	2022 Annual Review Comments
			not evident that any of the audit actions from the previous audit had been addressed, as discharge was occurring during the inspection after a 10 mm rainfall event, when no discharges had previously occurred at the site according to documentation reviewed for the audit. Recommendations as per response to Condition 26				
Bushfire Management	36. The Applicant shall: a) ensure that the development is suitably equipped to respond to any fires on-site; and b) assist the Rural Fire Service and Emergency Services as much as possible if there is a fire on-site.; and within 6 months of the date of this consent, the Applicant shall prepare a conservation sensitive Bushfire Management Plan for the development, to the satisfaction of Council and the Rural Fire Service.	Bushfire Management Plan 2014; AEMRs;	The Bushfire Management Plan (BMP-GSSE dated August 2006) was updated and finalised in December 2014. No evidence of approval of the plan from council or RFS was available for observation. A copy of the plan was sighted during the audit. Plant and equipment available onsite for firefighting purposes includes: - water storage dam (Sediment Dam 2) with a permanent fill point for tankers, and a 50,000 L clean water tank; - water tanker and earth tanking equipment; fire extinguishers; warning alarm siren; and - portable radios. Hunter Quarries also employee site induction training specific to emergency response. Site Induction Training was observed and noted. It is recommended that Hunter Quarries follow-up with Council and RFS regarding the approval of this plan so that it is approved in accordance with the condition requirement.	Non-Compliant	HQ agrees with EMMs recommendation for this non-compliance. HQ will revise the Bushfire Management Plan with consultation from MidCoast Council and the RFS, and then seek approval from the DPE.	30 June 2020	Approval of the BfMP is ongoing.
Environmental Monitoring Program	4. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 below), the Applicant shall review, and if necessary revise, the Environmental Monitoring Program to the satisfaction of the Director-General.	EMP (2014)	The EMP does not appear to have been updated following the previous IEA. No formalised correspondence from DPE regarding Environmental Monitoring Plan (2014) was sighted. Hunter Quarries is to review and update EMP within specified timeframe of the completion of the IEA (2019).	Non-Compliant	HQ agrees with EMMs recommendation for this non-compliance. HQ will revise the EMP and seek approval from DPE.	31 January 2020	Revision ongoing.
Community Consultative Committee	10. If the Applicant does not receive at least two expressions of interest to serve on the CCC the Applicant shall instead develop a communications strategy for consulting with Council and residents within 2 km of the development, to the satisfaction of the Director-General. This strategy should outline how the Applicant will advise Council and nearby residents on its environmental management plans, monitoring results, audit reports or complaints. This communication should occur twice a year. Notes: If during the course of the development, a Community Consultative Committee that has been established is found to be no longer effective, the Director-General may agree to its disbandment.	EMS 2016	No evidence supplied of submission of reports in accordance with the communications strategy detailed in the EMS. EMM recommend that these reports are prepared as discussed in the EMS and as required by this condition of consent. Alternatively, a CCC for Karuah Quarry should be implemented.	Non-Compliant	HQ agrees with EMMs recommendation for this non-compliance. HQ will review the Community Communication Strategy and revise accordingly with consultation from the DPE.	30 April 2020	Action closed out in 2020.

APPENDIX 5 – Long Term Security of Lot 12 DP 1024564

Planning, Industry & Environment

Karuah Hard Rock Quarry – Long Term Security of Biodiversity Offsets

Purpose: To request that the Deputy Secretary, Assessment and System Performance sign and have witnessed Restrictive and Positive Covenants and Deposited Plan Administration Sheet for the Karuah Hard Rock Quarry.

Analysis: Development consent DA 265-10-2004 (approved 3 June 2005) for the Karuah Hard Rock Quarry requires the Applicant (Hunter Quarries Pty Limited) to provide a Biodiversity Offset Strategy to offset the removal of vegetation due to the quarry extension.

The Applicant has prepared covenants in consultation with the Department to address the requirements of the Biodiversity Offset Strategy.

Recommendation

1. **Sign** and have witnessed the Restrictive and Positive Covenants (**Attachment B** – sign page 10 and initial each page) and Deposited Plan Administration Sheet (**Attachment C** – sign page 3) documents.

Departmental approval

~~Approved~~/Not Approved

David Gainsford

Deputy Secretary, Assessment and System Performance

Date: 17/11/21

Key reasons

Summary

The development consent (DA 265-10-2004) for the Karuah Hard Rock Quarry requires that the Applicant (Hunter Quarries Pty Limited) provide a Biodiversity Offset Strategy (BOS) to offset the removal of vegetation due to the quarry extension.

The conditions of this development consent:

- define the Conservation Offset Area,
- require that they be surveyed;
- require that they be managed in accordance with an approved Flora and Fauna Management Plan (F&FMP); and
- require that these areas be subject to restrictive and positive covenants under the *Conveyancing Act 1919* to provide long-term security for the BOS areas.

The covenants have been drafted in consultation with the Department and signed by the Applicant. They have been lodged with the Department for signature, by an authorised officer.

Analysis

Background

On 3 June 2005, Craig Knowles, Minister for Infrastructure, Planning and Natural Resources, approved the Karuah Hard Rock Quarry project (DA265-10-2004). The quarry is located off the Pacific Highway at Karuah, in the Mid-Coast local government area.

On 29 September 2006, the development consent was modified to amend a minor administrative condition relating to road contributions.

The modified development consent requires the Applicant to establish, conserve and maintain a Conservation Offset Area (COA), within the existing project site (see Appendix 2 of the Development Consent (**Attachment A**) for the location of the COA.

Conditions 17 and 18 of Schedule 3 of the development consent require the following:

FLORA AND FAUNA

Conservation Offset Area

17. The Applicant shall establish, conserve, and maintain the area of vegetation in Lot 12 DP 1024564 marked on the map in Appendix 2, to the satisfaction of the Director- General.

18. Within 3 years of this consent, the Applicant shall implement suitable arrangements to provide long term security for the conservation offset area, to the satisfaction of the Director-General.

    Note: The long term security of the offset can be achieved through a combination of the following: Deed of Agreement with the Minister, rezoning the land under the Great Lakes Local Environment Plan 1996, caveats on the title under the Conveyancing Act 191, etc....

The Applicant is seeking to fulfil and finalise the requirements of conditions 17 and 18 of Schedule 3 of DA265-10-2004, and has:

- surveyed and marked the boundaries of the COA;
- submitted and obtained approval of the Flora and Fauna Management Plan that sets out how the COA would be managed for biodiversity conservation purposes;
- drafted and signed restrictive and positive covenants under the *Conveyancing Act 1919* to be placed on the land titles of the COA (**Attachment B**); and

- submitted these covenants (contained in one document) and a Deposited Plan Administration Sheet with a surveyed plan of the COA (**Attachment C**) to the Department for signature.

Following signature by an authorised officer of the Department, the covenants and plan will be lodged with Land Registry Services so that these covenants can be placed on the titles of the land.

Legal Consultation

The Department's Legal Services Division has been consulted on the wording of the Restrictive and Positive Covenants and is satisfied with the wording contained in **Attachment B**.

Legal Services has also confirmed that the delegations in place from the Minister for Planning and Public Spaces as signatory extends to the Deputy Secretary, Assessment and System Performance, Planning and Assessment (The Deputy Secretary Planning and Assessment would have previously signed this, as the Minister's Delegate).

Attachments (delete if no attachments)

Attachment	Title
A	Consolidated Development Consent DA 265-10-2004
B	Restrictive and Positive Covenants (2 x duplicate originals for signature)
C	Deposited Plan Administrations Sheet with a surveyed plan of the COA (2 x duplicated originals for signature)

Departmental approval and contact

Approver	Position	Date approved
Matthew Sprott	Director, Resource Assessments	15/06/2021
Clay Preshaw	Executive Director Energy, Resources and Industry	Click or tap to enter a date.
Contact Name	**Position**	**Phone number**
Melissa Anderson	Senior Environmental Assessment Officer	02 8275 1392

11th March 2021

PCU080495

Attn: Melissa Anderson
Resource Assessments
Department of Planning, Industry & Environment
Mailroom Level 17
4 Parramatta Square, 12 Darcy Street
Parramatta NSW 2150

Dear Ms Anderson,

Karuah Hard Rock Quarry (DA 265-10-2004)
Public Positive Covenant and Restriction in Use of Land Covenant

Per the letter received on 15th December 2020 from Colin Phillips regarding the execution of documents in relation to the above matter, please find enclosed executed originals, returned as requested to yourself.

For any further queries on the matter, please contact our Quarry Manager, Greg Dressler per previous correspondence.

Kind Regards,

Chryse Levick
Administration & Accounts

Planning, Industry & Environment

Mr Greg Dressler
Quarry Manager
Karuah Hard Rock Quarry
PO Box 23
Karuah, NSW, 2324

15/12/2020

Dear Mr Dressler

Karuah Hard Rock Quarry (DA 265-10-2004)
Public Positive Covenant and Restriction in Use of Land Covenant

I refer to the draft Covenants for the Karuah Hard Rock Quarry Conservation Offset Area which were submitted in accordance with Condition 18 of Schedule 3 of the consent for the Karuah Hard Rock Quarry (DA 265-10-2004).

The Department has carefully reviewed the document and is satisfied that it is a form to allow for this process to proceed to the signing stage and allow these covenants to come into effect to protect the Quarry's Conservation Offset Area required by condition 17 of Schedule 3 of the Quarry's consent.

The next stage of the process will need to occur outside of the Department's Major Project's Planning Portal, as the documents will need to be physically provided to the Department, once the relevant signatures have been applied to the Covenants.

I would be grateful if you would arrange for the signed Covenants to forwarded to the Mailroom Level 17, attention of Melissa Anderson, Senior Planner, Resource Assessments at the Department's Parramatta address. I suggest that you use either Registered or Express Post to enable the documents to be tracked. Please inform Melissa of when the documents are despatched, so that these documents can be retrieved for signature by the Department's representative. Melissa can be contacted on 8275 1392 or at melissa.anderson@planning.nsw.gov.au.

Yours sincerely

Colin Phillips.

Colin Phillips
Team Leader
Resource Assessments (Coal & Quarries)

Lift and peel
Sender to keep
606 30648276 097

PLAN FORM 6 (2020)	**DEPOSITED PLAN ADMINISTRATION SHEET**	SHEET 1 OF 2 SHEET(S)

Office Use Only

Registered:

Title System:

Office Use Only

PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564

LGA: MID COAST
Locality: KARUAH
Parish: CARRINGTON
County: GLOUCESTER

Survey Certificate

I, MURRAY PAUL EDWARDS

of ADW JOHNSON PTY LIMITED
7/335 HILLSBOROUGH ROAD, WARNERS BAY, NSW 2282

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, is accurate and the survey was completed on 15TH JANUARY 2021, ~~or~~

~~*(b) The part of the land shown in the plan (*being/*excluding ** .....) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, the part surveyed is accurate and the survey was completed on....., the part not surveyed was compiled in accordance with that Regulation, or~~

~~*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2017*.~~

Datum Line: 'A' - 'B'

Type: ~~*Urban~~/*Rural

The terrain is ~~*Level-Undulating / *Steep-Mountainous.~~

Signature: M. Edwards Dated: 4/02/2021.

Surveyor Identification No: 84

Surveyor registered under the *Surveying and Spatial Information Act 2002*

*Strike out inappropriate words.
**Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Crown Lands NSW/Western Lands Office Approval

I, ... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I, ...

*Authorised Person/*General Manager/*Accredited Certifier, certify that the provisions of s.6.15 of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Registration number: .....

Consent Authority: .....

Date of endorsement: .....

Subdivision Certificate number: .....

File number: .....

*Strike through if inapplicable.

Plans used in the preparation of survey / ~~compilation.~~

DP838128
DP1024341
DP1024564
DP1184691

Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.

If space insufficient continue on PLAN FORM 6A

Surveyor's Reference: 11683-DP-001-D

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

PLAN FORM 6A (2019) **DEPOSITED PLAN ADMINISTRATION SHEET** SHEET 2 OF 2 SHEET(S)

Registered: Office Use Only	Office Use Only
PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	This sheet is for the provision of the following information as required: • A schedule of lots and addresses - See 60(c) *SSI Regulation 2017* • Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919* • Signatures and seals- see 195D *Conveyancing Act 1919* • Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.
Subdivision Certificate Number: ..... Date of Endorsement:	

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO:

(A) CREATE:-

1. RESTRICTION ON THE USE OF LAND
2. PUBLIC POSITIVE COVENANT

Executed by **BRANCH LAND PTY LIMITED**
ACN 126 281 703 in accordance with Section 127
of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Crugeon
Name of Director

.....
Signature of Director/Secretary

Grahame Anthony Chevalley
Name of Director/Secretary

Executed by
COMMONWEALTH BANK OF AUSTRALIA

1900 by ...
instrument pursuant to the power of attorney ...

Signature of Attorney: .....
Attorney's name: PETER WARNE
Attorney's position: RELATIONSHIP EXECUTIVE
Signing on behalf of: COMMONWEALTH BANK OF AUSTRALIA ACN 48 123 123 124
Power of attorney - Book: 4548 - No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of Witness: .....
Name of witness: ELIZABETH SMIT
Address of witness: LVL 2, 251 WHARF RD NEWCASTLE

If space insufficient use additional annexure sheet

Surveyor's Reference: 11683-DP-001-C

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 1 of 8 Sheets)**

Plan: **DP**

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Full Name and Address of the Owner of the land:

Branch Land Pty Limited
ACN 126 281 703
1 Hartley Drive
THORNTON NSW 2322

Full Name and Address of the Mortgagee of the land:

Commonwealth Bank of Australia
ACN 123 123 124
Level 2, 251 Wharf Road
NEWCASTLE NSW 2300

PART 1 (Creation)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s):	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	Restriction on the use of Land	Part 12/1024564 being the area designated (A) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales
2	Public Positive Covenant	Part 12/1024564 being the area designated (B) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales

PART 2 (Terms)

A. Land burdened by the Restriction on the Use of Land and Public Positive Covenant

The land burdened by this Instrument is the part of Lot 12 DP1024564 being the area designated (A) and (B) in the Plan attached.

B. Interpretation

1. In this Instrument, unless the context clearly indicates otherwise, the following terms have the following meanings:

"**Consent**" means Development Consent DA 265-10-2004;

"**Conservation Offset Management Plan**" means the Conservation Offset Management Plan contained within the Karuah Hard Rock Quarry Flora and Fauna Management Plan

dated September 2020 and approved by the Secretary on 13 October 2020, having registered dealing number AQ624334 or any subsequent updated version approved by the Secretary;

"**Department**" means the NSW Department of Planning, Industry & Environment;

"**Development**" has the same meaning as it has in the *Environmental Planning and Assessment Act 1979* (NSW);

"**EECs**" means endangered ecological communities as defined in the *Biodiversity Conservation Act 2016* (NSW);

"**Instrument**" means this section 88B Instrument;

"**Land**" means the land burdened by this Instrument;

"**Minister**" means the Minister administering the *Environmental Planning and Assessment Act 1979* (NSW);

"**Registered Proprietor**" means the registered proprietor of the Land from time to time; and

"**Secretary**" means the Secretary of the Department or other agency responsible to the Minister.

2. Unless the context clearly indicates otherwise, a reference in this Instrument to:

   (a) the singular includes the plural and vice versa;

   (b) any thing includes the whole and each part of that thing;

   (c) legislation or a legislative provision includes regulations and other instruments made under the legislation, and any statutory amendment, consolidation, re-enactment or replacement of the same;

   (d) a person includes a natural person, corporation, statutory corporation, partnership, the Crown or any other body, organisation or legal entity; and

   (e) a requirement not to do something includes a requirement to prevent that thing from occurring.

3. Headings are for convenience only and do not affect the interpretation of this Instrument.

C. General terms of the Restriction on Use of the Land and Public Positive Covenant

1. This Instrument incorporates the provisions of the Conservation Offset Management Plan and any requirements of the Secretary as advised from time to time under the Consent, as applicable in respect of the Land.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 3 of 8 Sheets)**

Plan: DP

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

2. The Registered Proprietor must provide a copy of this Instrument and any requirement of the Secretary issued under the Consent from time to time relating to the Land, to any transferee, lessee, licensee, mortgagee, or other successor in title.

3. The Registered Proprietor must permit access to the Land by the Secretary or any person authorised by the Secretary and relevant public authorities at all times for the purposes of monitoring compliance with this Instrument.

4. The Registered Proprietor must, at its own cost, comply with the terms of this Instrument.

5. By written notice to the Registered Proprietor, the Secretary may, at any time, require the Registered Proprietor at its cost to attend to any matter and to carry out any such work pursuant to this Instrument within such time as the Secretary may specify. The Registered Proprietor must comply with such notice at its cost and within the time specified.

6. If the Registered Proprietor fails to comply with the terms of any written notice given under clause 5 of this Instrument, any person authorised by officers of the Department and authorised agents of the Department may enter the Land at any time with all necessary equipment and carry out any work which, in its discretion, is required to ensure compliance with the notice or otherwise remedy any failure by the Registered Proprietor to observe its obligations under this Instrument. The Department may recover from the Registered Proprietor the cost associated with carrying out any such work, and may recover all expense incurred by the Department in doing so.

7. The Registered Proprietor must indemnify and keep indemnified the State of New South Wales from all claims and demands of every kind and from all liabilities which may arise in connection with the Registered Proprietor's failure to observe or comply with the terms of this Instrument.

8. If any provision or part of any provision of this Instrument is or becomes void, invalid, or unenforceable for any reason, that provision or part may be severed from this Instrument and all other provisions or parts which are self-sustaining and capable of separate enforcement without regard to the void, invalid, or unenforceable provision will be and continue to be valid and enforceable in accordance with their terms.

9. Nothing in this Instrument is to be construed as:

   (a) excusing or preventing the carrying out of work required for the operation, maintenance, or repair of infrastructure and easements existing as at the date this Instrument takes effect; or

   (b) excusing or derogating from any requirement to obtain any consent, approval, permit or licence under any applicable instrument or legislation or to comply with any applicable legislation.

10. This instrument is to remain in force for the Land in perpetuity.

11. This Instrument may only be varied in accordance with section 88E(7) of the *Conveyancing Act 1919* (NSW).

D. Terms of the Restriction on the Use of Land numbered 1 in the Plan

1. Subject to **clause D.2** of this Instrument, the Registered Proprietor is restricted in its use of the Land in accordance with the terms set out in the Conservation Offset Management Plan, and in addition to the requirements contained therein, must not:

   (a) carry out any Development on the Land;

   (b) destroy, damage, remove, or harm any native flora or fauna in or on the Land;

   (c) occupy, or allow any person to occupy the Land;

   (d) allow livestock grazing on the Land;

   (e) clear or cultivate the Land;

   (f) interfere with any substance on the Land whether or not in or forming part of the Land;

   (g) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of native flora or fauna on the Land;

   (h) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the implementation of measures under the Conservation Offset Management Plan for the Land; or

   (i) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of any EECs on the Land.

2. To the extent that the carrying out of Development or action on the Land is necessary for the purpose of:

   (a) implementing provisions of the Conservation Offset Management Plan;

   (b) complying with the Consent; or

   (c) otherwise protecting and conserving native vegetation and native fauna on the Land and facilitating natural regeneration of the native species on the Land,

   the obligations in **clause D.1** of this Instrument do NOT prevent or restrict a Registered Proprietor or its authorised agents, contractors, employees, licensees, lessees, and invitees from lawfully carrying out the following Development or other action on the Land:

(d) assisting and facilitating restoration of any relevant vegetation offset areas;

(e) revegetation and regeneration works including establishment of canopy, understorey and ground strategy and collecting propagating seed for the purposes of revegetation;

(f) introducing, installing or replacing hollow bearing habitat features and habitat resources;

(g) removing immediate threats to any ecosystem and monitoring the particular ecosystem;

(h) controlling weeds and feral pests;

(i) permanently marking the boundaries of any vegetation offset areas;

(j) managing or preventing soil erosion;

(k) carrying out bushfire management works under a management plan approved by NSW Rural Fire Service or as directed by NSW Rural Fire Service;

(l) destruction or removal of vegetation within 4 metres of the boundaries of the area of Land to which this restriction applies, for the purpose of erecting or maintaining a fence along such boundaries;

(m) destruction or removal of vegetation where necessary for the purposes of maintaining an existing vehicular access track or creating a new vehicular access track but only up to 2 metres either side of the centre line of the track;

(n) any other thing required to be done under the Conservation Offset Management Plan for the Land, including but not limited to, conducting surveys and undertaking monitoring, auditing, and reporting activities;

(o) re-establishing viable native vegetation communities and EECs;

(p) ripping, spreading soil, and reshaping the Land;

(q) supplementary planting of trees and shrubs;

(r) monitoring and maintaining regeneration work; and

(s) control, slashing, ripping, spraying and removal of exotic species and regenerating weeds.

E. Terms of Public Positive Covenant numbered 2 in the Plan

1. To the extent necessary to protect and conserve native vegetation and native fauna on the Land and to facilitate regeneration of native species, the Registered Proprietor must do all

acts required to give effect to the positive obligations in the Conservation Offset Management Plan, and:

(a) permanently mark the boundaries of the offset area set out in the Conservation Offset Management Plan so that such boundaries are clearly identifiable;

(b) establish, conserve and maintain the area of vegetation on the Land, marked on the map in Appendix 2 of the Consent, to the satisfaction of the Secretary;

(c) manage the Land in accordance with the Conservation Offset Management Plan in perpetuity;

(d) permit access to the Land by officers of the Department, authorised agents of the Department and relevant public authorities at all times for the purposes of monitoring compliance with this covenant and the Conservation Offset Management Plan;

(e) control weeds and feral pests on the Land, including undertaking measures to suppress and eradicate "pests" within the meaning of that term under the *Biosecurity Act 2015* (NSW);

(f) control vehicular access to the Land to minimise the potential for vehicle strike of native fauna; and

2. In the event that the flora is destroyed by bush fire or any other disaster, the Registered Proprietor shall reinstate the native vegetation as quickly as possible, and if required by the Secretary shall prepare a new Conservation Offset Management Plan for the Secretary's approval.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 7 of 8 Sheets)**

Plan: DP

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Certified correct for the purposes of the Real property Act, 1900 and executed for and on behalf of the Minister for Planning and Public Spaces by his authorised delegate:

Signature of authorised officer

Name of authorised officer

Dep Secretary Assessments and Systems Performance
Authority of officer

Signature of witness

NESTOR TSAMBOS
Name of witness

Department of Planning, Industry & Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 8 of 8 Sheets)**

Plan: DP

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Executed by **BRANCH LAND PTY LIMITED ACN 126 281 703** in accordance with Section 127 of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Grugeon
Name of Director

.....
Signature of Director/Secretary

Grahame Anthony Chevalley
Name of Director/Secretary

COMMONWEALTH BANK OF AUSTRALIA

Certified correct for the purposes of the Real Property Act 1900 by the person(s) named below who signed this instrument pursuant to the power of attorney specified

Signature of Attorney: .....

Attorney's name: PETER WARNE

Attorney's position: RELATIONSHIP EXECUTIVE

Signing on behalf of: **COMMONWEALTH BANK OF AUSTRALIA** ABN 48 123 123 124

Power of attorney - Book: 4548
- No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of Witness: .....

Name of witness: ELIZABETH SMIT

Address of witness: LVL 2, 251 WHARF RD NEWCASTLE

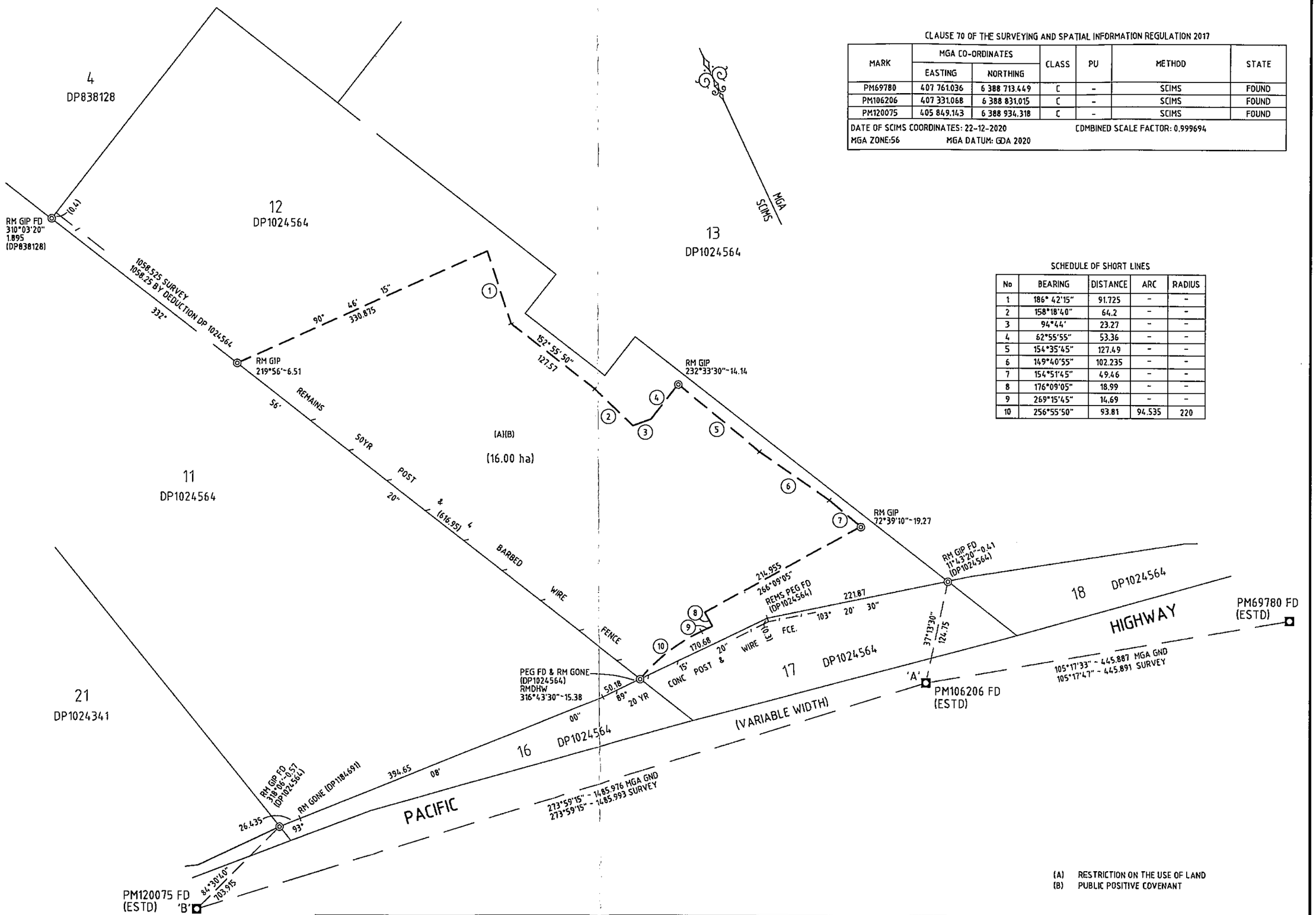
CLAUSE 70 OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2017

MARK	MGA CO-ORDINATES		CLASS	PU	METHOD	STATE
	EASTING	NORTHING				
PM69780	407 761.036	6 388 713.449	C	-	SCIMS	FOUND
PM106206	407 331.068	6 388 831.015	C	-	SCIMS	FOUND
PM120075	405 849.143	6 388 934.318	C	-	SCIMS	FOUND

DATE OF SCIMS COORDINATES: 22-12-2020 COMBINED SCALE FACTOR: 0.999694
MGA ZONE:56 MGA DATUM: GDA 2020

SCHEDULE OF SHORT LINES

No	BEARING	DISTANCE	ARC	RADIUS
1	186° 42'15"	91.725	-	-
2	158°18'40"	64.2	-	-
3	94°44'	23.27	-	-
4	62°55'55"	53.36	-	-
5	154°35'45"	127.49	-	-
6	149°40'55"	102.235	-	-
7	154°51'45"	49.46	-	-
8	176°09'05"	18.99	-	-
9	269°15'45"	14.69	-	-
10	256°55'50"	93.81	94.535	220

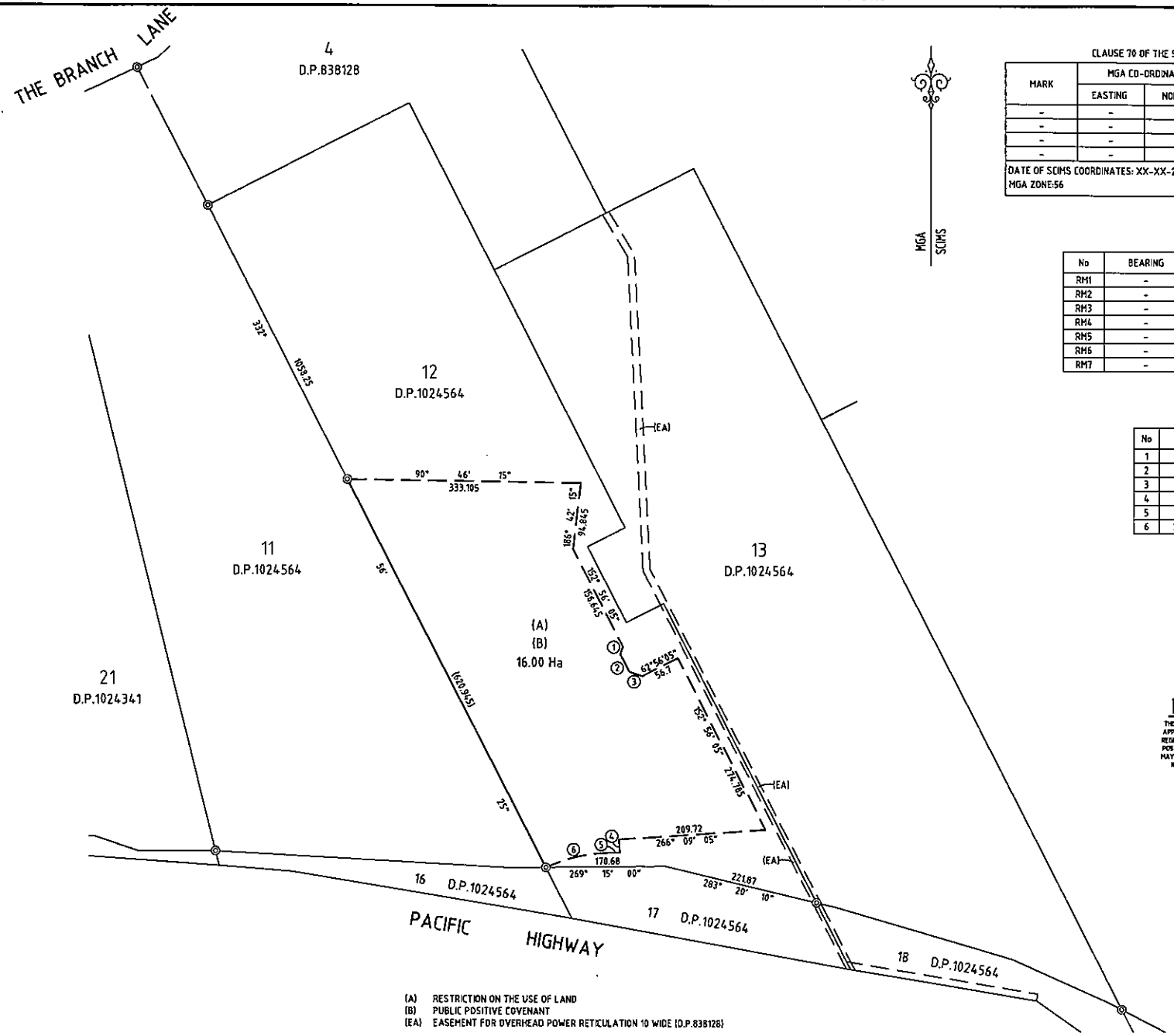


(A) RESTRICTION ON THE USE OF LAND
(B) PUBLIC POSITIVE COVENANT

SURVEYOR	PLAN HEADING	L.G.A.: MID COAST	REGISTERED	
Name: MURRAY PAUL EDWARDS	PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	Locality: KARUAH		
Date: 15th JANUARY 2021		Reduction Ratio 1: 3000		
Reference: 11683-DP-001-D		Lengths are in metres		

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



(A) RESTRICTION ON THE USE OF LAND
(B) PUBLIC POSITIVE COVENANT
(EA) EASEMENT FOR OVERHEAD POWER RETICULATION 10 WIDE (D.P.838128)

CLAUSE 70 OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2017

MARK	MGA CO-ORDINATES		CLASS	ORDER	METHOD	STATE
	EASTING	NORTHING				
-	-	-	-	-		
-	-	-	-	-		
-	-	-	-	-		
-	-	-	-	-		

DATE OF SCIMS COORDINATES: XX-XX-20XX COMBINED SCALE FACTOR: 0.999???
MGA ZONE:56

SCHEDULE OF REFERENCE MARKS

No	BEARING	DISTANCE	DESCRIPTION	ORIGIN
RM1	-	-	-	-
RM2	-	-	-	-
RM3	-	-	-	-
RM4	-	-	-	-
RM5	-	-	-	-
RM6	-	-	-	-
RM7	-	-	-	-

SCHEDULE OF SHORT LINES

No	BEARING	DISTANCE	ARC	RADIUS
1	197° 56' 05"	11.315	-	-
2	152° 56' 05"	27.785	-	-
3	107° 56' 05"	19.515	-	-
4	176° 09' 05"	18.99	-	-
5	269° 15' 45"	14.69	-	-
6	256° 55' 50"	93.81	94.535	220

PRELIMINARY ONLY

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT NSW LAND REGISTRY SERVICES. EASEMENTS, POSITIVE COVENANTS AND RESTRICTIONS ON THE USE OF LAND MAY BE CREATED UPON REGISTRATION OF THE PLAN WHICH ARE NOT SHOWN IN THIS PRELIMINARY VERSION OF THE PLAN.

SURVEYOR	PLAN HEADING	L.G.A.: MID COAST	REGISTERED	
Name: MURRAY PAUL EDWARDS	PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	Locality: KARUAH		
Date:		Reduction Ratio 1: 4000		
Reference: 11683-DP-001-C		Lengths are in metres		

PLAN FORM 6 (2020)	**DEPOSITED PLAN ADMINISTRATION SHEET**	SHEET 1 OF 2 SHEET(S)

Office Use Only

Registered:

Title System:

Office Use Only

PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564

LGA: MID COAST
Locality: KARUAH
Parish: CARRINGTON
County: GLOUCESTER

Survey Certificate

I, MURRAY PAUL EDWARDS

of ADW JOHNSON PTY LIMITED
7/335 HILLSBOROUGH ROAD, WARNERS BAY, NSW 2282

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, is accurate and the survey was completed on 15TH JANUARY 2021, ~~or~~

~~*(b) The part of the land shown in the plan (*being/*excluding ** .....) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, the part surveyed is accurate and the survey was completed on....., the part not surveyed was compiled in accordance with that Regulation, or~~

~~*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2017*.~~

Datum Line: 'A' - 'B'

Type: ~~*Urban~~/*Rural

The terrain is ~~*Level-Undulating / *Steep-Mountainous.~~

Signature: M. Edwards Dated: 4/02/2021.

Surveyor Identification No: 84

Surveyor registered under the *Surveying and Spatial Information Act 2002*

*Strike out inappropriate words.
**Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Crown Lands NSW/Western Lands Office Approval

I, ... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I, ...

*Authorised Person/*General Manager/*Accredited Certifier, certify that the provisions of s.6.15 of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Registration number: .....

Consent Authority: .....

Date of endorsement: .....

Subdivision Certificate number: .....

File number: .....

*Strike through if inapplicable.

Plans used in the preparation of survey / ~~compilation.~~

DP838128
DP1024341
DP1024564
DP1184691

Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.

If space insufficient continue on PLAN FORM 6A

Surveyor's Reference: 11683-DP-001-D

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

PLAN FORM 6A (2019) **DEPOSITED PLAN ADMINISTRATION SHEET** SHEET 2 OF 2 SHEET(S)

Registered: Office Use Only

Office Use Only

PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564

Subdivision Certificate Number: .....

Date of Endorsement: .....

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO:

(A) CREATE:-

1. RESTRICTION ON THE USE OF LAND
2. PUBLIC POSITIVE COVENANT

Executed by **BRANCH LAND PTY LIMITED** **ACN 126 281 703** in accordance with Section 127 of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Grugeon
Name of Director

.....
Signature of Director/Secretary

Grahame Anthony Chevalley
Name of Director/Secretary

Executed by
COMMONWEALTH BANK OF AUSTRALIA

Certified
1900 by the person(s) named
instrument pursuant to the power of attorney specified

Signature of Attorney: .....

Attorney's name: PETER WARNE

Attorney's position: RELATIONSHIP EXECUTIVE

Signing on behalf of: COMMONWEALTH BANK OF AUSTRALIA ABN 48 123 123 124

Power of attorney - Book: 4573
- No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence

Signature of Witness: .....

Name of witness: ELIZABETH SMIT

Address of witness: LVL 2, 251 WHARF RD NEWCASTLE

If space insufficient use additional annexure sheet

Surveyor's Reference: 11683-DP-001-C

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 1 of 8 Sheets)**

Plan: **DP**

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Full Name and Address of the Owner of the land:

Branch Land Pty Limited
ACN 126 281 703
1 Hartley Drive
THORNTON NSW 2322

Full Name and Address of the Mortgagee of the land:

Commonwealth Bank of Australia
ACN 123 123 124
Level 2, 251 Wharf Road
NEWCASTLE NSW 2300

PART 1 (Creation)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s):	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	Restriction on the use of Land	Part 12/1024564 being the area designated (A) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales
2	Public Positive Covenant	Part 12/1024564 being the area designated (B) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales

PART 2 (Terms)

A. Land burdened by the Restriction on the Use of Land and Public Positive Covenant

The land burdened by this Instrument is the part of Lot 12 DP1024564 being the area designated (A) and (B) in the Plan attached.

B. Interpretation

1. In this Instrument, unless the context clearly indicates otherwise, the following terms have the following meanings:

"**Consent**" means Development Consent DA 265-10-2004;

"**Conservation Offset Management Plan**" means the Conservation Offset Management Plan contained within the Karuah Hard Rock Quarry Flora and Fauna Management Plan

dated September 2020 and approved by the Secretary on 13 October 2020, having registered dealing number AQ624334 or any subsequent updated version approved by the Secretary;

"**Department**" means the NSW Department of Planning, Industry & Environment;

"**Development**" has the same meaning as it has in the *Environmental Planning and Assessment Act 1979* (NSW);

"**EECs**" means endangered ecological communities as defined in the *Biodiversity Conservation Act 2016* (NSW);

"**Instrument**" means this section 88B Instrument;

"**Land**" means the land burdened by this Instrument;

"**Minister**" means the Minister administering the *Environmental Planning and Assessment Act 1979* (NSW);

"**Registered Proprietor**" means the registered proprietor of the Land from time to time; and

"**Secretary**" means the Secretary of the Department or other agency responsible to the Minister.

2. Unless the context clearly indicates otherwise, a reference in this Instrument to:

   (a) the singular includes the plural and vice versa;

   (b) any thing includes the whole and each part of that thing;

   (c) legislation or a legislative provision includes regulations and other instruments made under the legislation, and any statutory amendment, consolidation, re-enactment or replacement of the same;

   (d) a person includes a natural person, corporation, statutory corporation, partnership, the Crown or any other body, organisation or legal entity; and

   (e) a requirement not to do something includes a requirement to prevent that thing from occurring.

3. Headings are for convenience only and do not affect the interpretation of this Instrument.

C. General terms of the Restriction on Use of the Land and Public Positive Covenant

1. This Instrument incorporates the provisions of the Conservation Offset Management Plan and any requirements of the Secretary as advised from time to time under the Consent, as applicable in respect of the Land.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 3 of 8 Sheets)**

Plan: **DP**

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

2. The Registered Proprietor must provide a copy of this Instrument and any requirement of the Secretary issued under the Consent from time to time relating to the Land, to any transferee, lessee, licensee, mortgagee, or other successor in title.

3. The Registered Proprietor must permit access to the Land by the Secretary or any person authorised by the Secretary and relevant public authorities at all times for the purposes of monitoring compliance with this Instrument.

4. The Registered Proprietor must, at its own cost, comply with the terms of this Instrument.

5. By written notice to the Registered Proprietor, the Secretary may, at any time, require the Registered Proprietor at its cost to attend to any matter and to carry out any such work pursuant to this Instrument within such time as the Secretary may specify. The Registered Proprietor must comply with such notice at its cost and within the time specified.

6. If the Registered Proprietor fails to comply with the terms of any written notice given under clause 5 of this Instrument, any person authorised by officers of the Department and authorised agents of the Department may enter the Land at any time with all necessary equipment and carry out any work which, in its discretion, is required to ensure compliance with the notice or otherwise remedy any failure by the Registered Proprietor to observe its obligations under this Instrument. The Department may recover from the Registered Proprietor the cost associated with carrying out any such work, and may recover all expense incurred by the Department in doing so.

7. The Registered Proprietor must indemnify and keep indemnified the State of New South Wales from all claims and demands of every kind and from all liabilities which may arise in connection with the Registered Proprietor's failure to observe or comply with the terms of this Instrument.

8. If any provision or part of any provision of this Instrument is or becomes void, invalid, or unenforceable for any reason, that provision or part may be severed from this Instrument and all other provisions or parts which are self-sustaining and capable of separate enforcement without regard to the void, invalid, or unenforceable provision will be and continue to be valid and enforceable in accordance with their terms.

9. Nothing in this Instrument is to be construed as:

   (a) excusing or preventing the carrying out of work required for the operation, maintenance, or repair of infrastructure and easements existing as at the date this Instrument takes effect; or

   (b) excusing or derogating from any requirement to obtain any consent, approval, permit or licence under any applicable instrument or legislation or to comply with any applicable legislation.

10. This instrument is to remain in force for the Land in perpetuity.

11. This Instrument may only be varied in accordance with section 88E(7) of the *Conveyancing Act 1919* (NSW).

D. Terms of the Restriction on the Use of Land numbered 1 in the Plan

1. Subject to **clause D.2** of this Instrument, the Registered Proprietor is restricted in its use of the Land in accordance with the terms set out in the Conservation Offset Management Plan, and in addition to the requirements contained therein, must not:

   (a) carry out any Development on the Land;

   (b) destroy, damage, remove, or harm any native flora or fauna in or on the Land;

   (c) occupy, or allow any person to occupy the Land;

   (d) allow livestock grazing on the Land;

   (e) clear or cultivate the Land;

   (f) interfere with any substance on the Land whether or not in or forming part of the Land;

   (g) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of native flora or fauna on the Land;

   (h) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the implementation of measures under the Conservation Offset Management Plan for the Land; or

   (i) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of any EECs on the Land.

2. To the extent that the carrying out of Development or action on the Land is necessary for the purpose of:

   (a) implementing provisions of the Conservation Offset Management Plan;

   (b) complying with the Consent; or

   (c) otherwise protecting and conserving native vegetation and native fauna on the Land and facilitating natural regeneration of the native species on the Land,

   the obligations in **clause D.1** of this Instrument do NOT prevent or restrict a Registered Proprietor or its authorised agents, contractors, employees, licensees, lessees, and invitees from lawfully carrying out the following Development or other action on the Land:

(d) assisting and facilitating restoration of any relevant vegetation offset areas;

(e) revegetation and regeneration works including establishment of canopy, understorey and ground strategy and collecting propagating seed for the purposes of revegetation;

(f) introducing, installing or replacing hollow bearing habitat features and habitat resources;

(g) removing immediate threats to any ecosystem and monitoring the particular ecosystem;

(h) controlling weeds and feral pests;

(i) permanently marking the boundaries of any vegetation offset areas;

(j) managing or preventing soil erosion;

(k) carrying out bushfire management works under a management plan approved by NSW Rural Fire Service or as directed by NSW Rural Fire Service;

(l) destruction or removal of vegetation within 4 metres of the boundaries of the area of Land to which this restriction applies, for the purpose of erecting or maintaining a fence along such boundaries;

(m) destruction or removal of vegetation where necessary for the purposes of maintaining an existing vehicular access track or creating a new vehicular access track but only up to 2 metres either side of the centre line of the track;

(n) any other thing required to be done under the Conservation Offset Management Plan for the Land, including but not limited to, conducting surveys and undertaking monitoring, auditing, and reporting activities;

(o) re-establishing viable native vegetation communities and EECs;

(p) ripping, spreading soil, and reshaping the Land;

(q) supplementary planting of trees and shrubs;

(r) monitoring and maintaining regeneration work; and

(s) control, slashing, ripping, spraying and removal of exotic species and regenerating weeds.

E. Terms of Public Positive Covenant numbered 2 in the Plan

1. To the extent necessary to protect and conserve native vegetation and native fauna on the Land and to facilitate regeneration of native species, the Registered Proprietor must do all

acts required to give effect to the positive obligations in the Conservation Offset Management Plan, and:

(a) permanently mark the boundaries of the offset area set out in the Conservation Offset Management Plan so that such boundaries are clearly identifiable;

(b) establish, conserve and maintain the area of vegetation on the Land, marked on the map in Appendix 2 of the Consent, to the satisfaction of the Secretary;

(c) manage the Land in accordance with the Conservation Offset Management Plan in perpetuity;

(d) permit access to the Land by officers of the Department, authorised agents of the Department and relevant public authorities at all times for the purposes of monitoring compliance with this covenant and the Conservation Offset Management Plan;

(e) control weeds and feral pests on the Land, including undertaking measures to suppress and eradicate "pests" within the meaning of that term under the *Biosecurity Act 2015* (NSW);

(f) control vehicular access to the Land to minimise the potential for vehicle strike of native fauna; and

2. In the event that the flora is destroyed by bush fire or any other disaster, the Registered Proprietor shall reinstate the native vegetation as quickly as possible, and if required by the Secretary shall prepare a new Conservation Offset Management Plan for the Secretary's approval.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 7 of 8 Sheets)**

Plan: DP

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Certified correct for the purposes of the Real property Act, 1900 and executed for and on behalf of the Minister for Planning and Public Spaces by his authorised delegate:

David Crawford
Signature of authorised officer

David Crawford
Name of authorised officer

Dep Secretary Assessments and Systems Performance
Authority of officer

Signature of witness

NESTOR TSAMBOS
Name of witness

Department of Planning, Industry & Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 8 of 8 Sheets)**

Plan: DP

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Executed by **BRANCH LAND PTY LIMITED** **ACN 126 281 703** in accordance with Section 127 of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Grugeon
Name of Director

.....
Signature of Director/Secretary

Grahame Anthony Chevalley.
Name of Director/Secretary

COMMONWEALTH BANK OF AUSTRALIA

Certified correct for the purposes of the Real Property Act 1900 by the person(s) named below who signed this instrument pursuant to the power of attorney specified

Signature of Attorney: .....

Attorney's name: PETER WARNE

Attorney's position: RELATIONSHIP EXECUTIVE

Signing on behalf of: **COMMONWEALTH BANK OF AUSTRALIA** ABN 48 123 123 124

Power of attorney
- Book: 4548
- No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of Witness: .....

Name of witness: ELIZABETH SMITH

Address of witness: LVL 2, 251 WHARF RD NEWCASTLE.

CLAUSE 70 OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2017

MARK	MGA CO-ORDINATES		CLASS	PU	METHOD	STATE
	EASTING	NORTHING				
PM69780	407 761.036	6 388 713.449	C	-	SCIMS	FOUND
PM106206	407 331.068	6 388 831.015	C	-	SCIMS	FOUND
PM120075	405 849.143	6 388 934.318	C	-	SCIMS	FOUND

DATE OF SCIMS COORDINATES: 22-12-2020 COMBINED SCALE FACTOR: 0.999694
MGA ZONE:56 MGA DATUM: GDA 2020

SCHEDULE OF SHORT LINES

No	BEARING	DISTANCE	ARC	RADIUS
1	186° 42'15"	91.725	-	-
2	158°18'40"	64.2	-	-
3	94°44'	23.27	-	-
4	62°55'55"	53.36	-	-
5	154°35'45"	127.49	-	-
6	149°40'55"	102.235	-	-
7	154°51'45"	49.46	-	-
8	176°09'05"	18.99	-	-
9	269°15'45"	14.69	-	-
10	256°55'50"	93.81	94.535	220

4
DP838128

12
DP1024564

13
DP1024564

11
DP1024564

21
DP1024341

16 DP1024564

17 DP1024564

18 DP1024564

RM GIP FD
310°03'20"
1.895
(DP838128)

(0.4)

1058.525 SURVEY
1058.25 BY DEDUCTION DP 1024564

332°

RM GIP
219°56'~6.51

90° 46' 15"
330.875

REMAINS 56' 50YR POST & 20" & (1616.95) 4 BARBED WIRE FENCE

(A)(B)

(16.00 ha)

MGA SCIMS

RM GIP
232°33'30"~14.14

152° 55' 50"
121.51

RM GIP
72°39'10"~19.27

214.955
266°09'05"

REMS PEG FD
(DP1024564)

RM GIP FD
11°43'20"~0.41
(DP1024564)

221.87
103° 20' 30"

(10.3) FCE.

170.68

15' CONC POST & 20" WIRE

37°13'30"
124.75

HIGHWAY

PM69780 FD
(ESTD)

105°17'33" ~ 445.887 MGA GND
105°17'47" ~ 445.891 SURVEY

PEG FD & RM GONE
(DP1024564)
RMDHW
316°43'30"~15.38

50.18
89° 00" 20 YR

(VARIABLE WIDTH)

'A'

PM106206 FD
(ESTD)

RM GIP FD
318°06'~0.57
(DP1024564)

394.65
08'

RM GONE (DP1184691)

26.435

93°

PACIFIC

273°59'15" ~ 1485.976 MGA GND
273°59'15" ~ 1485.993 SURVEY

84°30'40"
703.915

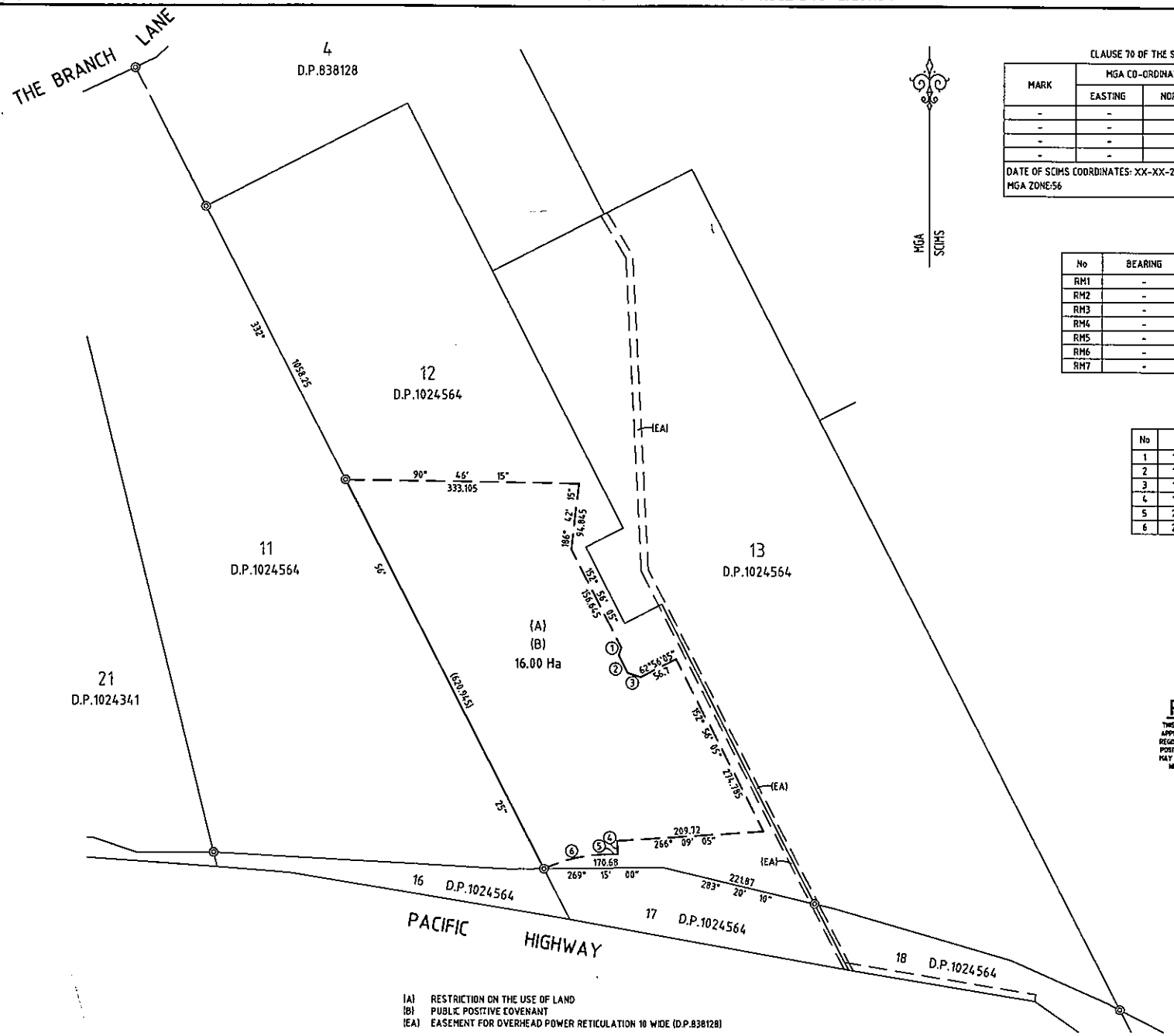
PM120075 FD
(ESTD) 'B'

(A) RESTRICTION ON THE USE OF LAND
(B) PUBLIC POSITIVE COVENANT

SURVEYOR	PLAN HEADING	L.G.A.: MID COAST	REGISTERED	
Name: MURRAY PAUL EDWARDS Date: 15th JANUARY 2021 Reference: 11683-DP-001-D	PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	Locality: KARUAH Reduction Ratio 1: 3000 Lengths are in metres		

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



CLAUSE 70 OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2017

MARK	MGA CO-ORDINATES		CLASS	ORDER	METHOD	STATE
	EASTING	NORTHING				
-	-	-	-	-		
-	-	-	-	-		
-	-	-	-	-		
-	-	-	-	-		

DATE OF SCIMS COORDINATES: XX-XX-20XX COMBINED SCALE FACTOR: 0.999???
MGA ZONE:56

SCHEDULE OF REFERENCE MARKS

No	BEARING	DISTANCE	DESCRIPTION	ORIGIN
RM1	-	-	-	-
RM2	-	-	-	-
RM3	-	-	-	-
RM4	-	-	-	-
RM5	-	-	-	-
RM6	-	-	-	-
RM7	-	-	-	-

SCHEDULE OF SHORT LINES

No	BEARING	DISTANCE	ARC	RADIUS
1	197° 56' 05"	11.315	-	-
2	152° 56' 05"	27.785	-	-
3	107° 56' 05"	19.515	-	-
4	176° 09' 05"	18.99	-	-
5	269° 15' 45"	14.69	-	-
6	256° 55' 50"	93.81	94.535	220

PRELIMINARY ONLY

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT NSW LAND REGISTRY SERVICES. EASEMENTS, POSITIVE COVENANTS AND RESTRICTIONS ON THE USE OF LAND MAY BE CREATED UPON REGISTRATION OF THE PLAN WHICH ARE NOT SHOWN IN THIS PRELIMINARY VERSION OF THE PLAN.

(A) RESTRICTION ON THE USE OF LAND
(B) PUBLIC POSITIVE COVENANT
(EA) EASEMENT FOR OVERHEAD POWER RETICULATION 10 WIDE (D.P.838128)

SURVEYOR	PLAN HEADING	L.G.A.: MID COAST	REGISTERED	
Name: MURRAY PAUL EDWARDS	PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	Locality: KARUAH		
Date:		Reduction Ratio 1: 4000		
Reference: 11683-DP-001-C		Lengths are in metres		

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 12/1024564

SEARCH DATE	TIME	EDITION NO	DATE
13/1/2022	8:31 AM	8	12/1/2022

LAND

LOT 12 IN DEPOSITED PLAN 1024564
AT KARUAH
LOCAL GOVERNMENT AREA MID-COAST
PARISH OF CARRINGTON COUNTY OF GLOUCESTER
TITLE DIAGRAM DP1024564

FIRST SCHEDULE

BRANCH LAND PTY LTD (T AK246463)

SECOND SCHEDULE (9 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 BK 1106 NO 716 LAND EXCLUDES MINERALS
3 DP838128 RIGHT OF CARRIAGEWAY 10 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
4 DP838128 EASEMENT FOR OVERHEAD RETICULATION 10 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP838128 RESTRICTION(S) ON THE USE OF LAND
6 8687034 RESTRICTION(S) ON THE USE OF LAND
7 AK246464 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
8 DP1280667 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 DP1280667 POSITIVE COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 1 of 8 Sheets)**

Plan: DP1280667

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Full Name and Address of the Owner of the land:

Branch Land Pty Limited
ACN 126 281 703
1 Hartley Drive
THORNTON NSW 2322

Full Name and Address of the Mortgagee of the land:

Commonwealth Bank of Australia
ACN 123 123 124
Level 2, 251 Wharf Road
NEWCASTLE NSW 2300

PART 1 (Creation)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s):	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	Restriction on the use of Land	Part 12/1024564 being the area designated (A) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales
2	Public Positive Covenant	Part 12/1024564 being the area designated (B) in the Plan attached	Minister administering the *Environmental Planning & Assessment Act 1979* for and on behalf of the Crown in right of New South Wales

PART 2 (Terms)

A. Land burdened by the Restriction on the Use of Land and Public Positive Covenant

The land burdened by this Instrument is the part of Lot 12 DP1024564 being the area designated (A) and (B) in the Plan attached.

B. Interpretation

1. In this Instrument, unless the context clearly indicates otherwise, the following terms have the following meanings:

"**Consent**" means Development Consent DA 265-10-2004;

"**Conservation Offset Management Plan**" means the Conservation Offset Management Plan contained within the Karuah Hard Rock Quarry Flora and Fauna Management Plan

dated September 2020 and approved by the Secretary on 13 October 2020, having registered dealing number AQ624334 or any subsequent updated version approved by the Secretary;

"**Department**" means the NSW Department of Planning, Industry & Environment;

"**Development**" has the same meaning as it has in the *Environmental Planning and Assessment Act 1979* (NSW);

"**EECs**" means endangered ecological communities as defined in the *Biodiversity Conservation Act 2016* (NSW);

"**Instrument**" means this section 88B Instrument;

"**Land**" means the land burdened by this Instrument;

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"**Registered Proprietor**" means the registered proprietor of the Land from time to time; and

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2. Unless the context clearly indicates otherwise, a reference in this Instrument to:

   (a) the singular includes the plural and vice versa;

   (b) any thing includes the whole and each part of that thing;

   (c) legislation or a legislative provision includes regulations and other instruments made under the legislation, and any statutory amendment, consolidation, re-enactment or replacement of the same;

   (d) a person includes a natural person, corporation, statutory corporation, partnership, the Crown or any other body, organisation or legal entity; and

   (e) a requirement not to do something includes a requirement to prevent that thing from occurring.

3. Headings are for convenience only and do not affect the interpretation of this Instrument.

C. General terms of the Restriction on Use of the Land and Public Positive Covenant

1. This Instrument incorporates the provisions of the Conservation Offset Management Plan and any requirements of the Secretary as advised from time to time under the Consent, as applicable in respect of the Land.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 3 of 8 Sheets)**

Plan: DP1280667

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

2. The Registered Proprietor must provide a copy of this Instrument and any requirement of the Secretary issued under the Consent from time to time relating to the Land, to any transferee, lessee, licensee, mortgagee, or other successor in title.

3. The Registered Proprietor must permit access to the Land by the Secretary or any person authorised by the Secretary and relevant public authorities at all times for the purposes of monitoring compliance with this Instrument.

4. The Registered Proprietor must, at its own cost, comply with the terms of this Instrument.

5. By written notice to the Registered Proprietor, the Secretary may, at any time, require the Registered Proprietor at its cost to attend to any matter and to carry out any such work pursuant to this Instrument within such time as the Secretary may specify. The Registered Proprietor must comply with such notice at its cost and within the time specified.

6. If the Registered Proprietor fails to comply with the terms of any written notice given under clause 5 of this Instrument, any person authorised by officers of the Department and authorised agents of the Department may enter the Land at any time with all necessary equipment and carry out any work which, in its discretion, is required to ensure compliance with the notice or otherwise remedy any failure by the Registered Proprietor to observe its obligations under this Instrument. The Department may recover from the Registered Proprietor the cost associated with carrying out any such work, and may recover all expense incurred by the Department in doing so.

7. The Registered Proprietor must indemnify and keep indemnified the State of New South Wales from all claims and demands of every kind and from all liabilities which may arise in connection with the Registered Proprietor's failure to observe or comply with the terms of this Instrument.

8. If any provision or part of any provision of this Instrument is or becomes void, invalid, or unenforceable for any reason, that provision or part may be severed from this Instrument and all other provisions or parts which are self-sustaining and capable of separate enforcement without regard to the void, invalid, or unenforceable provision will be and continue to be valid and enforceable in accordance with their terms.

9. Nothing in this Instrument is to be construed as:

   (a) excusing or preventing the carrying out of work required for the operation, maintenance, or repair of infrastructure and easements existing as at the date this Instrument takes effect; or

   (b) excusing or derogating from any requirement to obtain any consent, approval, permit or licence under any applicable instrument or legislation or to comply with any applicable legislation.

10. This instrument is to remain in force for the Land in perpetuity.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 4 of 8 Sheets)**

Plan: DP1280667

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

11. This Instrument may only be varied in accordance with section 88E(7) of the *Conveyancing Act 1919* (NSW).

D. Terms of the Restriction on the Use of Land numbered 1 in the Plan

1. Subject to **clause D.2** of this Instrument, the Registered Proprietor is restricted in its use of the Land in accordance with the terms set out in the Conservation Offset Management Plan, and in addition to the requirements contained therein, must not:

   (a) carry out any Development on the Land;

   (b) destroy, damage, remove, or harm any native flora or fauna in or on the Land;

   (c) occupy, or allow any person to occupy the Land;

   (d) allow livestock grazing on the Land;

   (e) clear or cultivate the Land;

   (f) interfere with any substance on the Land whether or not in or forming part of the Land;

   (g) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of native flora or fauna on the Land;

   (h) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the implementation of measures under the Conservation Offset Management Plan for the Land; or

   (i) carry out any Development or other action in or on the Land that threatens or might threaten, or may cause or be likely to result in threat to, the viability of any EECs on the Land.

2. To the extent that the carrying out of Development or action on the Land is necessary for the purpose of:

   (a) implementing provisions of the Conservation Offset Management Plan;

   (b) complying with the Consent; or

   (c) otherwise protecting and conserving native vegetation and native fauna on the Land and facilitating natural regeneration of the native species on the Land,

   the obligations in **clause D.1** of this Instrument do NOT prevent or restrict a Registered Proprietor or its authorised agents, contractors, employees, licensees, lessees, and invitees from lawfully carrying out the following Development or other action on the Land:

(d) assisting and facilitating restoration of any relevant vegetation offset areas;

(e) revegetation and regeneration works including establishment of canopy, understorey and ground strategy and collecting propagating seed for the purposes of revegetation;

(f) introducing, installing or replacing hollow bearing habitat features and habitat resources;

(g) removing immediate threats to any ecosystem and monitoring the particular ecosystem;

(h) controlling weeds and feral pests;

(i) permanently marking the boundaries of any vegetation offset areas;

(j) managing or preventing soil erosion;

(k) carrying out bushfire management works under a management plan approved by NSW Rural Fire Service or as directed by NSW Rural Fire Service;

(l) destruction or removal of vegetation within 4 metres of the boundaries of the area of Land to which this restriction applies, for the purpose of erecting or maintaining a fence along such boundaries;

(m) destruction or removal of vegetation where necessary for the purposes of maintaining an existing vehicular access track or creating a new vehicular access track but only up to 2 metres either side of the centre line of the track;

(n) any other thing required to be done under the Conservation Offset Management Plan for the Land, including but not limited to, conducting surveys and undertaking monitoring, auditing, and reporting activities;

(o) re-establishing viable native vegetation communities and EECs;

(p) ripping, spreading soil, and reshaping the Land;

(q) supplementary planting of trees and shrubs;

(r) monitoring and maintaining regeneration work; and

(s) control, slashing, ripping, spraying and removal of exotic species and regenerating weeds.

E. Terms of Public Positive Covenant numbered 2 in the Plan

1. To the extent necessary to protect and conserve native vegetation and native fauna on the Land and to facilitate regeneration of native species, the Registered Proprietor must do all

acts required to give effect to the positive obligations in the Conservation Offset Management Plan, and:

(a) permanently mark the boundaries of the offset area set out in the Conservation Offset Management Plan so that such boundaries are clearly identifiable;

(b) establish, conserve and maintain the area of vegetation on the Land, marked on the map in Appendix 2 of the Consent, to the satisfaction of the Secretary;

(c) manage the Land in accordance with the Conservation Offset Management Plan in perpetuity;

(d) permit access to the Land by officers of the Department, authorised agents of the Department and relevant public authorities at all times for the purposes of monitoring compliance with this covenant and the Conservation Offset Management Plan;

(e) control weeds and feral pests on the Land, including undertaking measures to suppress and eradicate "pests" within the meaning of that term under the *Biosecurity Act 2015* (NSW);

(f) control vehicular access to the Land to minimise the potential for vehicle strike of native fauna; and

2. In the event that the flora is destroyed by bush fire or any other disaster, the Registered Proprietor shall reinstate the native vegetation as quickly as possible, and if required by the Secretary shall prepare a new Conservation Offset Management Plan for the Secretary's approval.

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 7 of 8 Sheets)**

Plan: DP1280667

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Certified correct for the purposes of the Real property Act, 1900 and executed for and on behalf of the Minister for Planning and Public Spaces by his authorised delegate:

Signature of authorised officer

David Crawford

Name of authorised officer

Dep Secretary Assessments and Systems Performance

Authority of officer

Signature of witness

NESTOR TSAMBOS

Name of witness

Department of Planning, Industry & Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919.

Lengths are in metres **(Sheet 8 of 8 Sheets)**

Plan: DP1280667

Plan of Restriction on the Use of Land and Public Positive Covenant within Lot 12 DP1024564.

Executed by **BRANCH LAND PTY LIMITED** **ACN 126 281 703** in accordance with Section 127 of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Grugeon
Name of Director

.....
Signature of Director/~~Secretary~~

Grahame Anthony Chevalley
Name of Director/~~Secretary~~

COMMONWEALTH BANK OF AUSTRALIA

Certified correct for the purposes of the Real Property Act 1900 by the person(s) named below who signed this instrument pursuant to the power of attorney specified

Signature of Attorney: .....

Attorney's name: PETER WARNE

Attorney's position: RELATIONSHIP EXECUTIVE

Signing on behalf of: **COMMONWEALTH BANK OF AUSTRALIA** ABN 48 123 123 124

Power of attorney - Book: 4548 - No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of Witness: .....

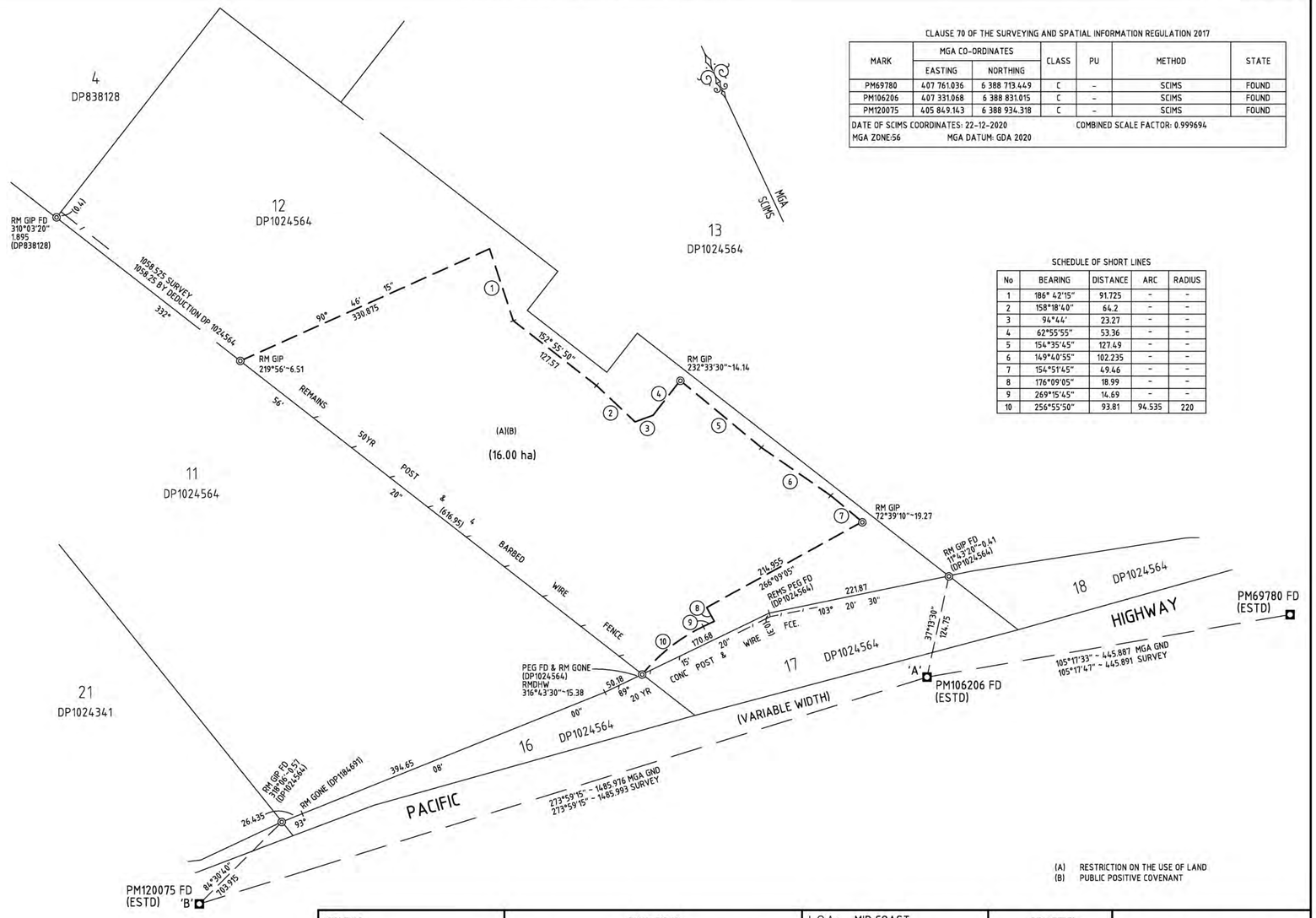
Name of witness: ELIZABETH SMIT

Address of witness: LVL 2, 251 WHARF RD NEWCASTLE.

REGISTERED: 12/01/2022

N:\11683\Worddocs\s88b\11683-88B-001-C.doc

PLAN FORM 2 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 1 of 1 sheets



CLAUSE 70 OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2017

MARK	MGA CO-ORDINATES		CLASS	PU	METHOD	STATE
	EASTING	NORTHING				
PM69780	407 761.036	6 388 713.449	C	-	SCIMS	FOUND
PM106206	407 331.068	6 388 831.015	C	-	SCIMS	FOUND
PM120075	405 849.143	6 388 934.318	C	-	SCIMS	FOUND

DATE OF SCIMS COORDINATES: 22-12-2020 COMBINED SCALE FACTOR: 0.999694
MGA ZONE:56 MGA DATUM: GDA 2020

SCHEDULE OF SHORT LINES

No	BEARING	DISTANCE	ARC	RADIUS
1	186° 42'15"	91.725	-	-
2	158°18'40"	64.2	-	-
3	94°44'	23.27	-	-
4	62°55'55"	53.36	-	-
5	154°35'45"	127.49	-	-
6	149°40'55"	102.235	-	-
7	154°51'45"	49.46	-	-
8	176°09'05"	18.99	-	-
9	269°15'45"	14.69	-	-
10	256°55'50"	93.81	94.535	220

(A) RESTRICTION ON THE USE OF LAND
(B) PUBLIC POSITIVE COVENANT

SURVEYOR	PLAN HEADING	L.G.A.: MID COAST	REGISTERED	
Name: MURRAY PAUL EDWARDS	PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564	Locality: KARUAH	12/01/2022	DP1280667
Date: 15th JANUARY 2021		Reduction Ratio 1: 3000		
Reference: 11683-DP-001-D		Lengths are in metres		

PLAN FORM 6 (2020)	DEPOSITED PLAN ADMINISTRATION SHEET	SHEET 1 OF 2 SHEET(S)

Office Use Only

Registered: 12/01/2022

Title System: TORRENS

Office Use Only

DP1280667

PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564

LGA: MID COAST
Locality: KARUAH
Parish: CARRINGTON
County: GLOUCESTER

Survey Certificate

I, MURRAY PAUL EDWARDS

of ADW JOHNSON PTY LIMITED
7/335 HILLSBOROUGH ROAD, WARNERS BAY, NSW 2282

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, is accurate and the survey was completed on 15TH JANUARY 2021, or

~~*(b) The part of the land shown in the plan (*being/*excluding **~~
~~.....)~~

~~was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, the part surveyed is accurate and the survey was completed on....., the part not surveyed was compiled in accordance with that Regulation, or~~

~~*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2017*.~~

Datum Line: 'A' - 'B'

Type: ~~*Urban~~/*Rural

The terrain is ~~*Level-Undulating / *Steep-Mountainous.~~

Signature: M. Edwards Dated: 4/02/2021.

Surveyor Identification No: 84

Surveyor registered under the *Surveying and Spatial Information Act 2002*

*Strike out inappropriate words.
**Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Crown Lands NSW/Western Lands Office Approval

I, ... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I, ...

*Authorised Person/*General Manager/*Accredited Certifier, certify that the provisions of s.6.15 of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Registration number: .....

Consent Authority: .....

Date of endorsement: .....

Subdivision Certificate number: .....

File number: .....

*Strike through if inapplicable.

Plans used in the preparation of survey / ~~compilation.~~

DP838128
DP1024341
DP1024564
DP1184691

Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.

If space insufficient continue on PLAN FORM 6A

Surveyor's Reference: 11683-DP-001-D

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

PLAN FORM 6A (2019) **DEPOSITED PLAN ADMINISTRATION SHEET** SHEET 2 OF 2 SHEET(S)

Registered: 12/01/2022 Office Use Only

Office Use Only

DP1280667

PLAN OF RESTRICTION ON THE USE OF LAND AND PUBLIC POSITIVE COVENANT WITHIN LOT 12 DP1024564

Subdivision Certificate Number: .....

Date of Endorsement: .....

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO:

(A) CREATE:-

1. RESTRICTION ON THE USE OF LAND
2. PUBLIC POSITIVE COVENANT

Executed by **BRANCH LAND PTY LIMITED ACN 126 281 703** in accordance with Section 127 of the Corporations Act 2001 in the presence of:

.....
Signature of Director

Hilton Ross Grugeon
Name of Director

.....
Signature of Director/~~Secretary~~

Grahame Anthony Chevalley
Name of Director/~~Secretary~~

Executed by
COMMONWEALTH BANK OF AUSTRALIA

Signed by ...
instrument pursuant to the power of attorney ...

Signature of Attorney: .....

Attorney's name: PETER HARNE

Attorney's position: RELATIONSHIP EXECUTIVE

Signing on behalf of: COMMONWEALTH BANK OF AUSTRALIA ACN 48 123 123 124

Power of attorney - Book: 4648 - No: 494

I certify that the person(s) signing opposite, with whom I am personally aquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of Witness: .....

Name of witness: ELIZABETH SMIT

Address of witness: LVL 2, 251 WHARF RD NEWCASTLE

If space insufficient use additional annexure sheet

Surveyor's Reference: 11683-DP-001-C