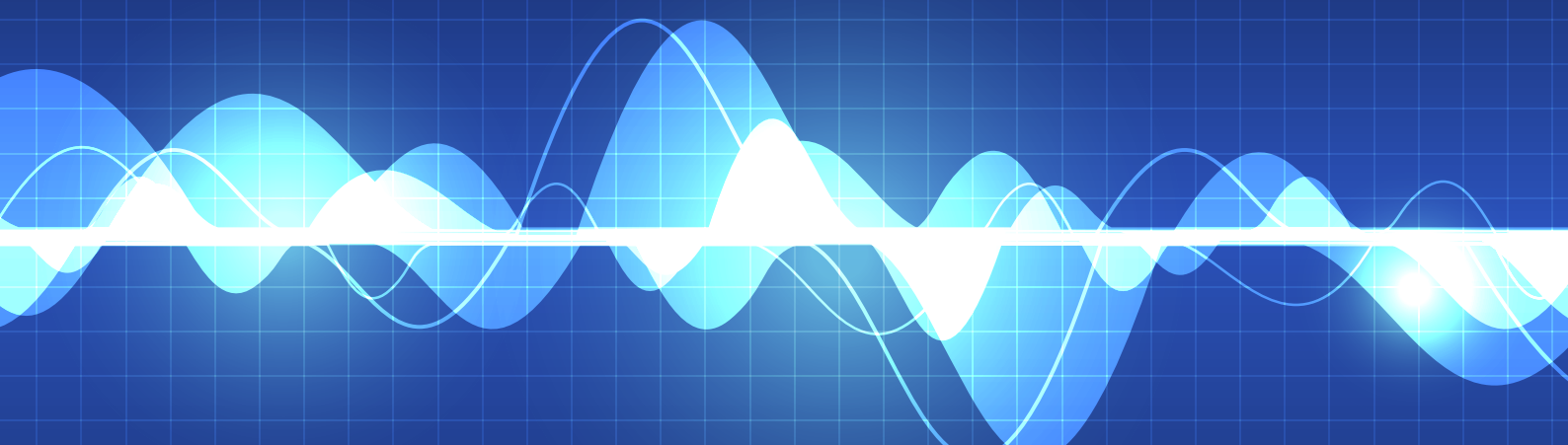


Karuah East Quarry

Noise Management Plan

Prepared for Karuah East Quarry Pty Limited
2022





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Noise Management Plan

Prepared for Karuah East Quarry Pty Limited
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Karuah East Quarry

Noise Management Plan

Report Number

H200866 RP3_NMP

Client

Karuah East Quarry Pty Limited

Date

14 April 2022

Version

v2-0 Final

Prepared by



Lucas Adamson

Senior Consultant

14 April 2022

Approved by



Katie Teyhan

Associate

14 April 2022

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

1.1 Overview

Karuah East Quarry Pty Limited (Karuah East) operates the Karuah East Quarry (KEQ) located near Karuah, approximately 40 kilometres north east of Newcastle in the MidCoast Council Local Government Area. Karuah East operates under Project Approval (PA) 09_0175.

PA 09_0175 enables hard rock quarrying at KEQ at up to 1.5 million tonnes per annum (Mtpa) through to 31 December 2034. Further detailed description of approved operations associated with PA 09_0175 is provided in the *S4.55(1A) Modification Report Proposed Modification to Extend Hours of Operation Project Approval 09_0175* (ADW Johnson, April 2021) along with other supporting material, as defined and listed in PA 09_0175.

On 2 December 2021, Modification 9 of PA 09_0175 for KEQ was granted under Section 4.55(1A) of the Environmental Planning and Assessment Act 1979 (EP&A Act). Modification 9 approved extended hours of operation for the KEQ. The Modification 9 application was supported by a Noise Impact Assessment (NIA) (EMM Consulting 2021).

The Modification 9 approval (Notice of Modification dated 2/12/21), NIA findings and noise mitigation measures relevant to the preparation of this Noise Management Plan (NMP) have been incorporated into this document.

1.2 Purpose and Scope

This NMP has been prepared to address Condition 7 of Schedule 3 of PA 09_0175 and is required to be prepared to the satisfaction of the Planning Secretary.

In accordance with Condition 7(a) of Schedule 3 of PA 09_0175, this NMP has been prepared by Katie Teyhan, Associate acoustical consultant, of EMM Consulting Pty Limited (EMM), who has been endorsed by the Planning Secretary as a suitably qualified and experienced person (refer Appendix A).

As required by Condition 7(b) of Schedule 3 of PA 09_0175, the currently approved KEQ NMP was prepared in consultation with the EPA. It is noted that response from the EPA is that the EPA does not approve management plans (refer Appendix B).

This NMP applies to all activities undertaken at KEQ by Karuah East employees and contractors.

This NMP has been prepared to:

- comply with the relevant conditions of PA 09_0175 (refer Appendix C) regarding noise including the management and monitoring of noise emissions from site operations (including off-site road traffic as well as all operations occurring on site and construction activity);
- provide Karuah East employees and contractors with a description of their responsibilities, regarding noise management at KEQ; and
- comply with relevant sections of KEQ's Environment Protection Licence (EPL) 20611.

A number of technical terms are required for the discussion of noise. Relevant definitions and information are provided in the glossary of acoustic terms.

2 Regulatory requirements

2.1 Project Approval

The NMP forms part of the Environmental Management Strategy (EMS) for the site and is consistent with the requirements of Condition 6 of Schedule 3 of PA 09_0175. These requirements are summarised in Table 2.1 together with where these have been addressed in this document.

Table 2.1 PA 09_0175 – Operating Conditions

Condition	Condition Details	NMP Section
Condition 6, Schedule 3	The Applicant must:	-
	a) take all reasonable steps to minimise noise from construction and operational activities, including low frequency noise and other audible characteristics, associated with the development;	Section 4
	b) implement reasonable and feasible noise attenuation measures on all plant and equipment that will operate in noise sensitive areas;	Section 4
	c) operate a comprehensive noise management system commensurate with the risk of impact;	This Plan
	d) take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions when the noise criteria in this consent do not apply (see NPfl);	Section 4
	e) carry out quarterly attended noise monitoring (unless otherwise agreed by the Planning Secretary) to determine whether the development is complying with the relevant conditions of this consent; and	Section 6.2
	f) regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	Section 6

Condition 7, Schedule 3 and Condition 3, Schedule 5 of PA 09_0175 provides the requirements related to the development of the NMP. The requirements are summarised in Table 2.2 together with where these have been addressed in this document.

Additional requirements of PA 09_0175 that relate to this NMP are provided in Appendix C.

Table 2.2 PA 09_0175 – Noise Management Plan Requirements

Condition	Condition Details	NMP Section
Condition 7, Schedule 3	The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	This Plan
	(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;	Section 1.2 and Appendix A
	(b) be prepared in consultation with the EPA;	Section 1.2 and Appendix B

Table 2.2 PA 09_0175 – Noise Management Plan Requirements

Condition	Condition Details	NMP Section
	<ul style="list-style-type: none"> (c) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> (i) compliance with the noise criteria and operating conditions of this consent; (ii) best practice management is being employed; and (iii) noise impacts of the development are minimised during noise-enhancing meteorological conditions when the noise criteria in this consent do not apply (see NPfI); 	Section 4
	(d) describe the noise management system in detail; and	This Plan
	<ul style="list-style-type: none"> (e) include a monitoring program that: <ul style="list-style-type: none"> (i) is capable of evaluating the performance of the development; (ii) monitors noise at the nearest and/or most affected residences; (iii) adequately supports the noise management system; (iv) includes protocol for distinguishing noise emissions of the development from any neighbouring developments; and (v) includes a protocol for identifying any noise-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of any such event. 	Section 6
Condition 3, Schedule 5	The Applicant must ensure that the Management Plans required under this consent are prepared in accordance with any relevant guidelines, and include:	This Plan
	a) detailed baseline data;	Section 3.3
	<ul style="list-style-type: none"> b) a description of: <ul style="list-style-type: none"> i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); ii) any relevant commitments or recommendations identified in the documents listed in condition 2(d) of Schedule 2; iii) any relevant limits or performance measures/criteria; and iv) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; 	Section 2 and Section 5.1
	c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 2.2
	<ul style="list-style-type: none"> d) a program to monitor and report on the: <ul style="list-style-type: none"> v) impacts and environmental performance of the development; and vi) effectiveness of any management measures (see (c) above); 	Section 6
	e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 6.7
	f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 4.2
	<ul style="list-style-type: none"> g) a protocol for managing and reporting any: <ul style="list-style-type: none"> vii) incidents; viii) complaints; ix) non-compliances with statutory requirements; and x) exceedances of the impact assessment criteria and/or performance criteria; and 	Sections 6.7 and 9
	h) a protocol for periodic review of the plan.	Section 8.3

2.2 Modification 9 - Statement of Commitments

The KEQ Modification 9 Report (*S4.55(1A) Modification Report Proposed Modification to Extend Hours of Operation Project Approval 09_0175* (ADW Johnson, 2021)) considered the outcomes of the NIA (EMM 2021). The commitments from these documents are contained in Statement of Commitment 5.0 of MP09_0175 and are presented in Table 2.3 including reference to where each commitment has been addressed within this NMP.

Table 2.3 Modification 9 NIA - Environmental management and monitoring measures

Commitments relating to noise	NMP Section
Karuah East Quarry will review and update the existing Noise Management Plan and then implement the updated plan. The Noise Management Plan will detail the monitoring and management controls to be implemented to manage noise impacts associated with Modification 9.	This Plan

Table 2.3 Modification 9 NIA - Environmental management and monitoring measures

Commitments relating to noise	NMP Section
<p>The following will be undertaken:</p> <ul style="list-style-type: none"> • Enclosure of the Jaw Crusher with 100 mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28; • Enclosure of the Cone Crushers on the northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond; • Purchase and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems; • Noise compliance monitoring will be undertaken in accordance with conditions of consent and Noise Management Plan by a suitably qualified acoustic expert. The monitoring will consider the performance of the quarry in relation to the development specific noise (as established in the EMM Revised Noise Impact Assessment August 2021) and vibration and blast criteria established in the SLR Noise and Blasting Impact Assessment (dated 2 November 2012); • The Applicant will not fire blasts at the existing quarry and the proposed Karuah East quarry at the same time; • The Applicant will implement a blasting program where nearby receivers are notified in advance of a blast; • The following control measures for vibration will be undertaken: <ul style="list-style-type: none"> – Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading; – Changing the burden and spacing by altering the drill pattern and/or delay layout or altering the hole inclination; – Use the minimum practicable sub drilling which gives satisfactory toe conditions; and – Investigate alternative rock breaking techniques. • The following control measures for air blasting will be undertaken: <ul style="list-style-type: none"> – Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading; – Ensure stemming depth and type is adequate; – Eliminate exposed detonating cord and secondary blasting; – Restrict blasting events to favourable weather conditions; – Orient quarry faces away from potentially sensitive receivers; – Use a hole spacing and burden which will ensure that the explosive force is just sufficient to break the ore to the required size; and – The Applicant will take particular care where the face is already broken and consider deck loading where appropriate to avoid broken ground or cavities in the face. • Splitting or hammering of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock will not be undertaken after 6:00 pm; • The Applicant will implement training to ensure staff are aware of the sensitivity of noise emissions; • Product will be loaded into trucks from as low a height as possible. • Loading of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock for dispatch during the following hours will be undertaken via excavator ‘grabs’ using the hydraulic excavator rock grab attachment rather than a bucket attachment: <ul style="list-style-type: none"> – 5:00 am to 7:00 am, Monday to Friday; – 6:00 pm to 9:00 pm, Monday to Friday; – 9:00 pm to 10:00 pm, Monday to Friday on up to 50 calendar days per year; and – 6:00 am to 7:00 am, Saturdays. 	Section 4.1

2.3 Environment Protection Licence (EPL)

KEQ operates in accordance with EPL 20611. As a result of the MOD 9 approval, KEQ will request a variation to EPL 20611 from the EPA to account for approved operations under PA 09_0175 including a revision to the noise monitoring program as described in this NMP.

2.4 Federal approval

Federal Approval (EPBC 2014/7282) was granted for the site under the Environment Protection and Biodiversity Conservation Act (EPBC Act 1999) on 20 March 2015 and was last varied on 4 October 2018. A new EPBC Referral has been lodged for the MOD 10 application (Department Agriculture, Water and Environment, reference 2022/9164).

The Federal Approval contains no conditions with regard to noise emissions or noise management.

3 Project description

3.1 Overview of approved operations

In accordance with PA 09_0175, operations permitted to be undertaken at KEQ generally comprise:

- Staged extraction of approximately 29 million tonnes of “andesite” over a 20 year timeframe;
- Extraction of up to 1.5 million tonnes of andesite material per year;
- Removal and stockpiling of an estimated 380,000 m3 of overburden (approximately 750,000 tonnes) from the quarry extraction area. Removal of overburden is not included in the proposed extraction rate of 1.5 million tonnes of andesite annually;
- Haulage of up to 1.5 million tonnes of andesite per year (up to 216 truckloads per day at maximum production) from the site to market by 25 to 30 tonne haul trucks via the Pacific Highway;
- Staged clearing;
- Drilling and blasting activities;
- Loading and hauling of extracted material;
- Crushing and screening of extracted material; and
- Stockpiling of material on-site.

3.2 Operating Hours

In accordance with Condition 7 of Schedule 2 of PA 09_0175, the Project is approved to operate during the hours presented in Table 3.1. Application to vary Condition L6 of the EPL (to achieve consistency with the below consented hours) will be separately made.

Table 3.1 **Operating hours**

Activity	Operating hours
Quarrying Operations	7:00 am to 9:00 pm, Monday to Friday 7:00 am to 10:00 pm Monday to Friday on 50 calendar days per year; and 7:00 am to 6:00 pm, Saturday. No drilling 6:00 pm to 10:00 pm Monday to Friday or 1:00 pm to 6:00 pm Saturday No quarrying operations on Sundays or Public Holidays.
Product loading and dispatch	5:00 am to 9:00 pm Monday to Friday 5:00 am to 10:00 pm Monday to Friday on 50 calendar days per year 6:00 am to 6:00 pm Saturday No product loading and dispatch on Sundays or Public Holidays
Construction activities	7.00 am to 6.00 pm, Monday to Friday; and 8.00 am to 1.00 pm, Saturdays, unless noise from these activities does not exceed 40 dB $L_{Aeq}(15 \text{ minute})$ at any privately-owned residence.

Table 3.1 **Operating hours**

Activity	Operating hours
Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence

Note: This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons regarding works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.

3.3 Baseline data

There are a few features of note regarding the ambient acoustic environment of the KEQ locality. These are the Pacific Highway running east-west to the south of the site, and a relatively variable terrain that affects noise propagation from quarrying operations.

Based on observations whilst on-site and from historic compliance noise monitoring reports, the main contributors to overall ambient noise levels in the site locality are road traffic on the Pacific Highway and natural sounds (e.g. birds and insects). Road traffic noise from the Pacific Highway is a feature to the south and west of the site and is particularly dominant during the morning shoulder (5:00 am to 7:00 am) and evening periods (6:00 pm to 10:00 pm).

Background noise levels of between 38-54 dB are present to the south and west of the site (in the vicinity of the Pacific Highway) while background noise levels between 34 dB and 41 dB are typical to the east of the site (further from the Pacific Highway).

A more detailed description of the ambient noise environment is provided in the NIA (EMM Consulting August, 2021).

3.4 Noise Sensitive Receivers

A number of noise sensitive receivers are located in the area surrounding KEQ. These receivers are presented in Table 3.2 and shown in Figure 3.1.

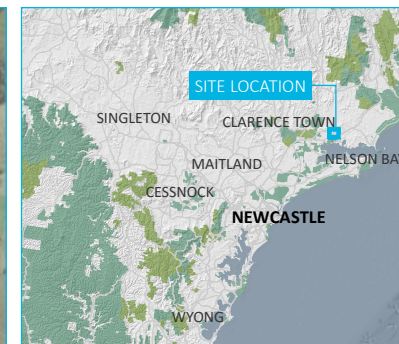
Table 3.2 **Noise Sensitive Receivers**

Receiver ID	Details
Existing Approved Dwellings	
A	Lot 100 DP 1028885
B	Lot 3 DP 785172
C	Lot 2 DP 785172
D	Lot 22 DP 1024341
E	Lot 250 DP 1092111
F	Lot 50 DP 1036893
G	Lot 1 DP 1032636
H	Lot 10 DP 1032636
I	Lot 11 DP 1032636

Table 3.2 **Noise Sensitive Receivers**

Receiver ID	Details
J	Lot 13 DP 1032636

\\lemmsvr1\EMM3\2020\H200866 - Karuah East Quarry Mod 9\8.GIS\02 Maps\ NMP\N001 MonitoringandAssessment 20220131_01.mxd 14/04/2022



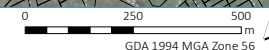
- KEY**
- Site boundary
 - Noise monitoring location
 - Noise assessment location
 - Major road
 - Minor road
 - Vehicular track
 - Cadastral boundary
 - NPWS reserve
- INSET KEY**
- Major road
 - State forest

Noise monitoring and
assessment locations

Karuah East Quarry
Noise Management Plan
Figure 3.1



Source: EMM (2022); ADWJ (2021); ESRI (2022); DFSI (2017); ICSM (2012); GA (2011); ASGC (2006)



4 Noise mitigation and management measures

4.1 Design and operational controls

Karuah East is committed to implementing and maintaining the following controls to minimise and manage noise generation from KEQ:

- Enclosure of the Jaw Crusher with 100 mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28;
- Enclosure of the Cone Crushers on the northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond;
- Purchase and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems;
- Noise compliance monitoring will be undertaken in accordance with conditions of consent and Noise Management Plan by a suitably qualified acoustic expert. The monitoring will consider the performance of the quarry in relation to the development specific noise (as established in the EMM Revised Noise Impact Assessment August 2021) and vibration and blast criteria established in the SLR Noise and Blasting Impact Assessment (dated 2 November 2012);
- The Applicant will not fire blasts at the existing quarry and the proposed Karuah East quarry at the same time;
- The Applicant will implement a blasting program where nearby receivers are notified in advance of a blast;
- The following control measures for vibration will be undertaken:
 - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
 - Changing the burden and spacing by altering the drill pattern and/or delay layout or altering the hole inclination;
 - Use the minimum practicable sub drilling which gives satisfactory toe conditions; and
 - Investigate alternative rock breaking techniques.
- The following control measures for air blasting will be undertaken:
 - Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading;
 - Ensure stemming depth and type is adequate;
 - Eliminate exposed detonating cord and secondary blasting;

- Restrict blasting events to favourable weather conditions;
 - Orient quarry faces away from potentially sensitive receivers;
 - Use a hole spacing and burden which will ensure that the explosive force is just sufficient to break the ore to the required size; and
 - The Applicant will take particular care where the face is already broken and consider deck loading where appropriate to avoid broken ground or cavities in the face.
- Splitting or hammering of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock will not be undertaken after 6:00 pm;
 - The Applicant will implement training to ensure staff are aware of the sensitivity of noise emissions;
 - Product will be loaded into trucks from as low a height as possible.
 - Loading of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock for dispatch during the following hours will be undertaken via excavator ‘grabs’ using the hydraulic excavator rock grab attachment rather than a bucket attachment:
 - 5:00 am to 7:00 am, Monday to Friday;
 - 6:00 pm to 9:00 pm, Monday to Friday;
 - 9:00 pm to 10:00 pm, Monday to Friday on up to 50 calendar days per year; and
 - 6:00 am to 7:00 am, Saturdays.

The following is also undertaken:

- Noise impacts are, and have been, considered during the quarry planning process;
- A review of mobile plant (loaders, excavators and trucks) used on the site was undertaken. The review included testing the acoustic performance of a sample of the machines to enable comparison to other similar machines available on the market. The KEQPL loaders and excavators were found to be examples of the best available noise levels for the class of machine.
- Haul trucks were found to perform below the best available in the market however, with engines already enclosed, it was determined that further engineered noise attenuation would not be effective. Hence, investigations were completed with the aim of minimising off-site noise emissions from haul trucks through site design. The following measures have been implemented and have been found to improve off-site noise emissions from haul trucks:
 - Inclusion of the dump hopper into the jaw crusher building has resulted in reduction of the intermittent and audible noise generated by engines at high idle as the material slides against the steel body of the truck as it is being unloaded.
 - Incorporation of windrows along the internal quarry haul roads. The barrier has the demonstrated effect of reducing noise from gearboxes or transmissions.

- Training of operators to use higher gears and lower engine acceleration where practical. Investigations identified that this measure resulted in reductions of up to 1-3dB.
- Other site design considerations implemented include:
 - Installation of the generators on the western side of the fuel tanks (which are adjacent to the cone crusher enclosure). This has increased acoustical shielding of these sources to the residences east of the site.
 - Openings for the crusher buildings (including the jaw crusher and cone crushers) are located on the western side of the buildings.
 - Arrangements for stockpiles encourage loading from the western side of the stockpile.
 - Road access away from the quarry pit and plant is downhill. Speed limits have been implemented to reduce the impact of exhaust noise generated by trucks leaving the site when under load.
 - Long term review of the quarry pit design to provide natural barriers to receivers to the east of the quarry earlier in the Quarry life.

4.2 Continual improvement and best practice management

Karuah East will maintain awareness of new technologies for noise mitigation through participation in relevant industry groups. Karuah East will implement noise mitigation measures in line with industry best practice mine noise management where feasible and reasonable.

4.3 Training

In accordance with Section 5.0 of Appendix 6 of PA 09_0175, training is provided to relevant Karuah East employees and contractors in relation to the management of noise and obligations relevant to the activities they carry out in respect to the development. To ensure the effective implementation of this NMP, relevant supervisors and staff will be provided training to respond adequately to complaints and other noise related management as required.

Toolbox talks will be conducted to reinforce the importance of noise management and mitigation on an as needs basis. Training also includes site inductions for all relevant employees and contractors working at KEQ

Training records are maintained as per Karuah East's internal procedures and management systems.

4.4 Additional at-residence noise mitigation measures

Requests for additional noise mitigation measures will be handled as per the process described in Condition 5 of Schedule 4 of PA 09_0175.

If requested, KEQ will consider reasonable and feasible receiver mitigation measures consistent with the *Voluntary Land Acquisition and Mitigation Policy (DPIE 2018)*.

Where additional noise mitigation is required, additional noise mitigation measures consistent with the measures outlined in the *Voluntary Land Acquisition and Mitigation Policy (DPIE 2018)* will be implemented. The measures must be reasonable and feasible, proportionate to the level of impact and directed towards reducing the noise impacts of the development.

If within 3 months of receiving this request from the landowner, Karuah East and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.

As per Condition 5 of Schedule 4 of PA 09_0175, Karuah East will contribute to reasonable maintenance and recurrent operating costs associated with the noise mitigation measures installed at privately-owned residences.

5 Noise limits

5.1 Operational noise

Condition 3 of Schedule 3 of PA 09_0175 provides the operational noise limits for KEQ. These are reproduced in Table 5.1.

Table 5.1 Operational noise criteria (dB) from Table 2 of PA 09_0175

Noise Assessment Location ¹	Morning Shoulder L _{Aeq} (15 minute)	Morning Shoulder L _{Amax}	Day L _{Aeq} (15 minute)	Evening L _{Aeq} (15 minute)
A	35	52	42	40
B	35	52	40	40
G	35	52	43	39
H	35	52	44	46
I	35	52	40	37
All other residences	35	52	40	35

Noise assessment locations are shown in Figure 3.1.

Noise generated by the development must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NPfl (EPA 2017).

The noise limits provided in Table 5.1 apply under standard and noise-enhancing meteorological conditions (as defined in the NPfl) determined by monitoring at the relevant weather station. In accordance with Condition L4.3 of EPL 20611 and consistent with Condition 3 of Schedule 3 of PA 09_0175 the noise limits provided in Table 5.1 apply under all meteorological conditions except for the following:

- wind speeds greater than 3m/s at 10m above ground level;
- stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or
- stability category G temperature inversion conditions.

In accordance with Fact Sheet D of the NPfl, for 'very noise enhancing meteorological conditions' the applicable noise limit is set at 5dB above those provided in Table 5.1.

Noise limits do not apply if Karuah East has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and Karuah East has advised the Department in writing of the terms of this agreement.

5.2 Road traffic noise

Condition 4 of Schedule 3 of PA 09_0175 states that all reasonable and feasible measures must be taken to ensure that the traffic generated by KEQ does not cause additional exceedances of the criteria provided in Table 5.2 at any residence on privately-owned land.

Table 5.2 Road traffic noise criteria (dB) from Table 3 of PA 09_0175

Road	Criteria (Day ¹)
Pacific Highway	60 dB L _{Aeq} (15 hour)
Local Roads	55 dB L _{Aeq} (1 hour)

Notes: 1. Day is the period from 7:00 am to 10:00 pm every day in accordance with the EPA’s NSW Road Noise Policy (2011).

6 Noise Monitoring Program

6.1 Overview and general requirements

Karuah East implements a noise monitoring program which consists of attended noise monitoring designed to meet the requirements of both PA 09_0175 and EPL 20611. In consideration of the Modification 9 approval (to PA 09_0175), amendments to the noise monitoring program have been incorporated into this NMP. A variation to EPL 20611 incorporating the updated noise monitoring program will be sought separately.

Noise monitoring is undertaken in accordance with the following relevant standards and guidelines:

- Noise Policy for Industry (EPA 2017);
- Australian Standard AS 1055-2018 *Acoustics - Description and measurement of environmental noise*; and
- AS/NZS IEC 61672.1-2019 *Electroacoustics - Sound level meters, Part 1: Specifications*.

All acoustic instrumentation used for compliance monitoring at KEQ has current NATA or manufacturer calibration certificates. Calibration and associated certificates will be maintained on site and records will be kept of any adjustments made to instruments.

6.2 Attended noise monitoring methodology

The attended noise monitoring program is used to assess compliance against the noise limits described in Section 5.1.

Each operator attended noise survey shall be a minimum duration of 15 minutes during the morning shoulder, daytime and evening periods during typical operating conditions. All noise measurements shall be accompanied by both qualitative description (including cloud cover) and quantitative measurements of prevailing local weather conditions throughout the survey period. The operator shall obtain information regarding the relevant fixed plant and mobile equipment operating logs to be included in the noise monitoring report.

During each survey the maximum (L_{Amax}), the energy equivalent (L_{Aeq}) and background (L_{A90}) noise levels from ambient noise sources and KEQ operations shall be quantified and characterised. Digital audio recordings will be conducted to allow for additional post analysis of KEQ contributed noise levels and to assist in source identification.

For each 15-minute attended noise monitoring period, the following information is recorded:

- name of monitoring personnel;
- monitoring location;
- dates and times that monitoring began and ended at each location;
- height of the microphone above the ground and, if relevant, distances to building facades or property boundaries;
- quantitative meteorological data such as temperature, wind speed (including the measurement height above ground), wind direction and humidity;
- qualitative meteorological information such as cloud cover, fog and rainfall;

- instrument type and calibration details before and after the monitoring period;
- the $L_{Aeq(15 \text{ minute})}$ noise level for the 15-minute period;
- statistical noise level descriptors over the 15-minute interval: L_{Amin} , L_{A90} , L_{A10} , L_{A1} and L_{Amax} ;
- $L_{A1,(1 \text{ minute})}$ or L_{Amax} noise levels from site during the morning shoulder period only (to allow comparison with the relevant criteria);
- notes identifying the noise sources that contribute to the maximum noise levels and the overall noise environment or for periods of time when a specific noise source is audible;
- an estimate of the noise contribution from operation of KEQ and from other identifiable noise sources including, but not limited to, neighbouring quarries (this is done by the operator matching audible sounds with the response of the analyser and/or via post-analysis of noise data);
- measurement of C-weighted and A-weighted noise levels to assess the potential for low frequency noise impacts in accordance with the NPfI (EPA 2017);
- measurements in one-third octave bands from 10 Hz to 12 kHz inclusive (or a broader range of bands) for the 15-minute interval to assess if any of the noise sources exhibit tonal characteristics or low frequency noise that may require application of modifying factors;
- data suitable for assessing the relative contribution of quarry-generated noise to the overall noise being measured by using a low-pass (i.e. consideration of frequencies up to and including 630 Hz); and
- recommendations or comments where considered appropriate.

Attended noise monitoring is scheduled considering:

- the occurrence of regular operations at KEQ rather than during scheduled down-time or maintenance; and
- forecast appropriate meteorological conditions.

6.3 Noise monitoring locations and frequency

Consistent with Condition 6(e) of Schedule 3 of PA 09_0175, attended monitoring is conducted once per calendar quarter (during the morning shoulder, daytime and evening periods) to demonstrate compliance with noise limits as presented in Section 5. Quarterly attended noise monitoring locations are listed in Table 6.1 and shown on Figure 3.1.

Quarterly attended monitoring locations are representative of the nearest private receptors based on the results of the NIA (EMM Consulting, August 2021) and in accordance with Section 2.6 of the NPfI (EPA 2017). Five attended monitoring locations have been adopted to represent the potentially most-affected privately-owned residences consistent with the requirements of Condition 3 of Schedule 3 of PA 09_0175. The relevant operational noise limits at each monitoring location have been determined based on modelled quarry noise emission levels and the relevant noise limit (as per Table 2 of PA 09_0175) at the nearest residences.

Further, if compliance is determined at the monitoring locations then compliance is inferred at all other locations.

Table 6.1 Quarterly attended noise monitoring locations

Monitoring Location ID	Description	Easting (MGA)	Northing (MGA)	Applicable noise limit, dB		
				Morning Shoulder <small>L_{Aeq}(15 minute)/L_{Amax}</small>	Day <small>L_{Aeq}(15 minute)</small>	Evening <small>L_{Aeq}(15 minute)</small>
A	Mill Hill Close West	406623	6388704	35/52	42	40
B	Mill Hill Close West	406405	6388859	35/52	40	40
F	The Branch Lane West	405639	6389782	35/52	40	35
G	Halloran Road South	408154	6389523	35/52	43	39
H	Halloran Road West	407795	6389868	35/52	44	46

Meteorological data is sourced from the KEQ on-site weather station to determine which noise limits are applicable. Stability categories relevant to each noise monitoring period are determined using the sigma-theta (ST) method as per Fact Sheet D of the NPfl (EPA 2017).

6.4 Meteorological monitoring

In accordance with Condition 17 of Schedule 3 of PA 09_0175, a meteorological station has been installed and situated in compliance with Approved Methods for Sampling of Air Pollutants in New South Wales guidelines. The weather station is programmed to continuously record the meteorological parameters as shown in Table 6.2.

Table 6.2 Meteorological measurement parameters

Measured parameter	Unit	Sample interval
Mean wind speed	m/s	15 minutes
Mean wind direction	degrees	15 minutes
Aggregate rainfall	mm	15 minutes
Mean air temperature	C°	15 minutes
Sigma theta (σ_θ)	degrees	15 minutes

This data can be accessed via a website to view to the latest hour or to download previously recorded data. Previously recorded data is validated and can be downloaded in intervals of 15 minutes.

Meteorological data will be monitored to determine noise enhancing meteorological conditions and if necessary, quarrying operations will be modified to reduce potential impacts at the nearest noise sensitive receivers under noise enhancing meteorological conditions.

Karuah East will implement both proactive and reactive noise control strategies informed by real-time meteorological monitoring systems. Proactive noise management will involve the discussion and planning of

activities in advance of potentially adverse conditions. Reactive measures will involve, where necessary, modifying site activities to minimise noise impact.

6.5 Determining compliance

The contributed noise emissions from KEQ shall be evaluated and assessed against the noise levels provided in Table 6.1. In order to determine noise generated from the Quarry only the following methods would be used:

- Direct measurement of ambient noise levels;
- Operator estimated $L_{Aeq(15\text{minute})}$ contribution;
- Analysis of operator attended noise monitoring results;
- Calculation from near-field measurements;
- Post analysis of audio recordings;
- Measurement at a representative location; and/or
- A combination of the above.

Following a measured exceedance of noise limits, a review of current operations will be undertaken as soon as practicable. If the likely noise source(s) can be identified and are attributable to Karuah East, the relevant equipment and/or operations determined to be contributing to the measured noise impacts will either be modified or cease within a practicable timeframe (i.e. within 120 minutes) in order to comply with the conditions of consent.

6.6 Road traffic noise

Based on the annual production limit, the following summarises the traffic generation of the KEQ:

- A total of 432 vehicle movements per day (216 despatched loads per day); and
- A maximum hourly traffic flow of 44 vehicle movements (22 despatched loads during that hour).

KEQ related traffic does not pass directly by any residences between the site entrance and the Pacific Highway. Traffic volume data obtained from the Roads and Maritime Services (RMS) website indicate volumes in the order of 21,410 vehicles per day (approximately 1,590 being heavy vehicles) in 2018. Historical data suggests an annual growth in total traffic of approximately 3% pa. Based on this level of growth, Quarry-related traffic in 2021 would represent less than 2% of daily traffic on the Pacific Highway.

It is unlikely that road traffic noise monitoring would be beneficial or effective given the negligible level of site related traffic on the Pacific Highway. As such, road traffic noise monitoring has not been included as part of the KEQ noise monitoring program.

6.7 Corrective actions and notifications

Table 6.3 summarises the potential noise related issues that may arise and the appropriate corrective action to be considered.

Table 6.3 **Corrective Actions and Notifications**

Issue/Opportunity	Corrective Action and Notification requirements
Exceedance of noise limits provided in Condition 3 of Schedule 3 of PA 09_0175 (ie non-compliance with noise limits)	<p>In the event of a measured exceedance of the relevant noise emission criteria, the following actions will be undertaken:</p> <ul style="list-style-type: none"> • Identify the noise source that has caused the exceedance. This would be completed by conducting a noise survey to quantify the relevant noise emissions. Additional methods such as near field monitoring, unattended noise monitoring or computer noise modelling may be utilised to investigate noise emissions, or to determine compliance with the Project Approval (PA 09_0175) conditions where potential non-compliances have been measured or are difficult to quantify from operator-attended noise measurements. • Reassess the noise reduction techniques employed at the site and implement any reasonable and feasible additional noise controls. • Conduct a further investigation, following the adoption of noise controls, to evaluate the effectiveness of the mitigation strategy. • Report details of any non-compliance and the results of noise monitoring/investigations to relevant agencies within required statutory timeframes. <p>Where a significant pollution incident occurs which causes an impact on material harm, reference will also be made to the Karuah East Pollution Incident Response Management Plan (PIRMP) for procedures relating to management of pollution incidents. It is unlikely the PIRMP would be enacted for a noise incident.</p>
Community complaints.	<p>All complaints received regarding operational noise emissions from the KEQ will be responded to within 24 hours by appropriate personnel. Karuah East will maintain a record of any complaint made to the quarry or any employee or agent of the quarry in relation to noise from the KEQ site. Records will include:</p> <ul style="list-style-type: none"> • Date and time of complaint; • Method by which the complaint was made; • Personal details of the complainant (if provided); • Nature of the complaint; • Weather conditions corresponding to the time of the complaint; • Action taken by the quarry and any follow up actions; and • If no action was taken, the reason why no action was taken.
Identification of improved technologies.	<p>Karuah East will maintain awareness of new technologies for noise mitigation through participation in relevant industry groups. The feasibility of implementing any additional improved noise management technologies identified through participation in relevant industry groups will be reported within the Annual Review.</p>
Incident notification	<p>In the event of an incident, Karuah East will immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident.</p> <p>The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.</p> <p>It should be noted that it is unlikely that a noise incident would constitute material harm and that an exceedance of the noise limits is classified as a non-compliance rather than an incident.</p>

7 Community consultation

7.1 Community Consultative Committee

In accordance with Condition 6 of Schedule 5 of PA 09_0175 KEQ has established and operates a Community Consultative Committee (CCC). The CCC is operated in general accordance with the *Community Consultative Committee Guideline, State Significant Projects January 2019 (NSW DPE)*.

The CCC is an advisory committee to facilitate communication, consultation and information sharing between the KEQ and the local community. Further details of the CCC are provided in the EMS and on KEQ's website (www.hunterquarries.com.au).

8 Review

8.1 Performance monitoring

Compliance of this NMP with the PA 09_0175, EPL 20611 and any other relevant agency requirements will be measured according to the following performance indicators:

- Compliance with relevant noise criteria at monitoring locations.
- Compliance with Australian Standards as required.
- The frequency and nature of complaints reported to the quarry in relation to noise emissions.
- Contractor and employee awareness of the company's Environmental Policy and this NMP.
- Compliance with this NMP, as indicated by statutory reporting.

8.2 Continual improvement

Through the effective application of best practice principles to on-site activities including, where cost-effective and practicable, the adoption of best practice technologies and noise control measures, the KEQ will continue to improve environmental performance with progress to be monitored against the performance indicators noted in Section 5.

8.3 Periodic Review

The NMP will be subject to periodic review as per Conditions 4, 5 and 9 of Schedule 5 of PA 09_0175. The suitability of this NMP must be reviewed within three months of:

- The submission of an incident report;
- The submission of an Annual Review;
- The submission of an Independent Environmental Audit; or
- The approval of any modification of the conditions of PA 09_0175.

Review of the NMP is also required to either improve the environmental performance of the development or comply with a direction as per Condition 4 of Schedule 5 of PA 09_0175. The NMP will also be reviewed to consider operational staging, validation of or improvements to the noise model, changes in technology or other relevant factors.

In accordance with Condition 5 of Schedule 5 of PA 09_0175, the revised NMP must be submitted to the Planning Secretary for approval within four weeks of the review. A summary of the NMP review history is maintained as per Section 10.2 of this NMP.

KEQ will seek a variation to the site's existing EPL 20611 consistent with the MOD 9 approval. This NMP may be required to be updated to ensure consistency with EPL 20611.

9 Reporting and records

9.1 Reporting requirements

A summary of the statutory reporting and record-keeping requirements is provided in Table 9.1.

Table 9.1 Reporting requirements

Condition	Reporting requirements	Timeframe
M1.2 – M1.3 of EPL 20611	Record Keeping All records required to be kept by this licence must be: <ul style="list-style-type: none"> 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. The following records must be kept in respect of any samples required to be collected for the purposes of this licence: <ul style="list-style-type: none"> 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. 	Records are kept for at least 4 years after the monitoring or event to which they relate took place
R1.1 of EPL 20611	Annual Return The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: <ol style="list-style-type: none"> 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. 	Annually
R4.3 of EPL 20611	Quarterly Noise Monitoring Report A quarterly noise monitoring report must be submitted to the EPA within 30 days of completion of each round of quarterly noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: <ul style="list-style-type: none"> a) a description of the plant in operation and activities being undertaken on the premises during each noise monitoring assessment; b) an assessment of compliance with noise limits presented in this licence; and c) an outline of any management actions taken within the monitoring period to address any exceedances of the limits contained in this licence. 	Within 30 days of the completion of each round of quarterly noise monitoring

Table 9.1 Reporting requirements

Condition	Reporting requirements	Timeframe
Schedule 5, Condition 4 of PA 09_0175	<p>Annual Review</p> <p>By the end of March each year, the Applicant must review the environmental performance of the development to the satisfaction of the Planning Secretary. This review must:</p> <ul style="list-style-type: none"> (a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against: <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the documents referred to in condition 2(d) of Schedule 2 of this consent; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe the measures that would be implemented over the current calendar year to improve the environmental performance of the development. 	By the end of March each year (or other timeframe agreed by the Planning Secretary)
Schedule 5, Condition 5 of PA 09_0175	<p>Revision of Strategies, Plans and Programs</p> <p>Within 3 months of:</p> <ul style="list-style-type: none"> (a) the submission of an annual review under Condition 4 above; (b) the submission of an incident report under Condition 7 below; (c) the submission of an audit report under Condition 9 below; or (d) any modification to the conditions of this consent, (unless the conditions require otherwise), <p>the Applicant must review the strategies, plans, and programs required under this consent, to the satisfaction of the Planning Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Planning Secretary.</p> <p><i>Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.</i></p>	<p>Review within 3 months</p> <p>Document revisions within 4 weeks of the review (if necessary)</p>
Schedule 5, Condition 7 of PA 09_0175	<p>Incident Notification</p> <p>The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.</p>	Immediately upon becoming aware of an incident.

Table 9.1 Reporting requirements

Condition	Reporting requirements	Timeframe
Schedule 5, Condition 7A of PA 09_0175	<p>Reporting</p> <p>Non-compliance Notification</p> <p>Within seven days of becoming aware of a non-compliance, The Applicant must notify the Department of the non-compliance. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p> <p><i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a noncompliance.</i></p>	Within 7 days of becoming aware of the non-compliance
Schedule 5, Condition 8 of 09_0175	<p>Regular Reporting</p> <p>The Applicant must regularly report on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.</p>	Quarterly reporting of results on website (www.hunterquarries.com.au)
Schedule 5, Condition 9 of PA 09_0175	<p>Independent Environmental Audit</p> <p>Within 12 months of the commencement of development on the site, and every 3 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <ul style="list-style-type: none"> (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL and/or Water Licence (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under these approvals; and (e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals. <p><i>Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Planning Secretary.</i></p>	<p>IEA to be commissioned within one year of commencement of development and every three years after.</p> <p>IEA report to be submitted to the Planning Secretary within 3 months of commencing the IEA.</p>
Schedule 5, Condition 10 of PA 09_0175	<p>Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.</p>	IEA report to be submitted to the Planning Secretary within 3 months of commencing the IEA
Schedule 4, Condition 1 of PA 09_0175	<p>Notification of Landowners</p> <p>As soon as practicable and no longer than 7 days after obtaining monitoring results showing an:</p> <ul style="list-style-type: none"> (a) exceedance of any noise, blasting and air quality criteria in Schedule 3, the Applicant must provide the details of the exceedance to any affected landowners and/or tenants; and (b) an exceedance of the relevant air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land. 	No longer than 7 days after obtaining monitoring results

Table 9.1 Reporting requirements

Condition	Reporting requirements	Timeframe				
Schedule 4, Condition 4 of PA 09_0175	<p>Independent Review</p> <p>If the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary’s decision, the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:</p> <p> (i) consult with the landowner to determine their concerns;</p> <p> (ii) conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3 of this consent; and</p> <p> (iii) if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria;</p> <p>(b) give the Planning Secretary and landowner a copy of the independent review; and</p> <p>(c) comply with any written requests made by the Planning Secretary to implement any findings of the review.</p>	Within 3 months, or as otherwise agreed by the Planning Secretary and the landowner				
Schedule 4, Condition 5 of PA 09_0175	<p>Mitigation upon request</p> <p>Upon receiving a written request for mitigation from the owner of any residence on privately-owned land listed in Table 12, the Applicant must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner. These measures must be consistent with the measures outlined in the <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development</i> (NSW Government, 2014). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise impacts of the development. The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of quarrying operations.</p> <p><i>Table 12: Land subject to additional mitigation upon request</i></p> <table><tr><th>Mitigation Basis</th><th>Land^a</th></tr><tr><td>Noise</td><td>H</td></tr></table> <p><small>a The location of the land referred to in Table 12 is shown in Appendix 2</small></p>	Mitigation Basis	Land ^a	Noise	H	Upon receiving a written request for mitigation from the owner of any residence on privately-owned land listed in Table 12
Mitigation Basis	Land ^a					
Noise	H					

9.2 Independent review

In accordance with Condition 2 of Schedule 4 of PA 09_0175, if a landowner considers that KEQ is exceeding any relevant noise limits they may ask the Planning Secretary in writing for an independent review of the impacts on their residence or land.

If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for it, within 21 days of the request for a review.

If the Planning Secretary is satisfied that an independent review is warranted, within 3 months of the Planning Secretary's decision, or other timeframe agreed by the Planning Secretary, Karuah East must:

- commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:
 - consult with the landowner to determine their concerns;

- conduct monitoring to determine whether the development is complying with the relevant noise limits; and
- if the development is not complying with the relevant noise limits, identify measures that could be implemented to ensure compliance with the relevant noise limits; and
- give the Planning Secretary and landowner a copy of the independent review; and
- comply with any written requests made by the Planning Secretary to implement any findings of the review.

9.3 Access to information

As required by Condition 8 of Schedule 5 of PA 09_0175, the following documents and information will be made publicly available via the Karuah East website (www.hunterquarries.com.au):

- the approved noise management plan;
- minutes of the CCC meetings;
- regular reporting on the noise performance of the development as required by PA 09_0175;
- a summary of noise monitoring results required by PA 09_0175;
- contact details to enquire about the development or to make a complaint;
- complaints register; and
- Annual Reviews and audit reports (including responses to the recommendations in any audit report).

Karuah East will maintain a centralised location to record details of relevant external stakeholder communications.

A summary of attended noise monitoring results will also be presented at the KEQ Community Consultative Committee (CCC) meetings. Performance monitoring, which includes an assessment of the effectiveness of controls and compliance with the relevant PA 09_0175 conditions, will be discussed at CCC meetings where noise related complaints occur.

10 Document information

Relevant legislation, standards and other reference information must be regularly reviewed and monitored for updates and should be included in the site management system. Related documents and reference information in this section provides the linkage and source to develop and maintain site compliance information.

10.1 Related Documents

Related documents, listed in Table 10.1, are internal documents directly related to or referenced from this document.

Table 10.1 **Related Documents**

Document number	Title
630.11235	Karuah East Pollution Incident Response Management Plan (PIRMP)
630.11235-R1	Karuah East Environmental Management Strategy (EMS)

10.2 Document review history

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in Table 10.2.

Table 10.2 **NMP document history**

Version	Date	Prepared by	Amendment
V1	27 October 2015	Hunter Quarries/SLR	Initial development of document.
V1.1	29 May 2019	Hunter Quarries/SLR	Revised, however not approved.
V2	14 April 2022	Hunter Quarries/EMM	Version 2 submitted to DP&E and EPA.

References

ADW Johnson 2021, *S4.55(1A) Modification Report Proposed Modification to Extend Hours of Operation Project Approval 09_0175*

Australian Standard AS 1055-2018 Acoustics - Description and measurement of environmental noise

Australian Standard AS IEC 61672.1-2004 Electroacoustics - Sound level meters – Specifications

Department of Environment and Conservation 2007, *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007)

EMM Consulting 2021, *Karuah East Quarry Mod 9 Noise Impact Assessment*

NSW Environment Protection Authority 2017, *Noise Policy for Industry* (NPfI) (EPA 2017)

Glossary of acoustic terms

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

Table G.1 **Glossary**

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 _{A1,1 minute}	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.
Standard meteorological conditions	Day/evening/night: stability categories A–D with wind speed up to 0.5 m/s at 10 m above ground level
Noise-enhancing meteorological conditions	Daytime/evening: stability categories A–D with light winds (up to 3 m/s at 10 m above ground level). Night-time: stability categories A–D with light winds (up to 3 m/s at 10 m AGL) and/or stability category F with winds up to 2 m/s at 10 m above ground level.
Very noise-enhancing meteorological conditions	Meteorological conditions outside of the range of either standard or noise-enhancing meteorological conditions.

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

Table G.2 Perceived change in noise

Change in sound pressure level (dB)	Perceived change in noise in surrounding environment
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

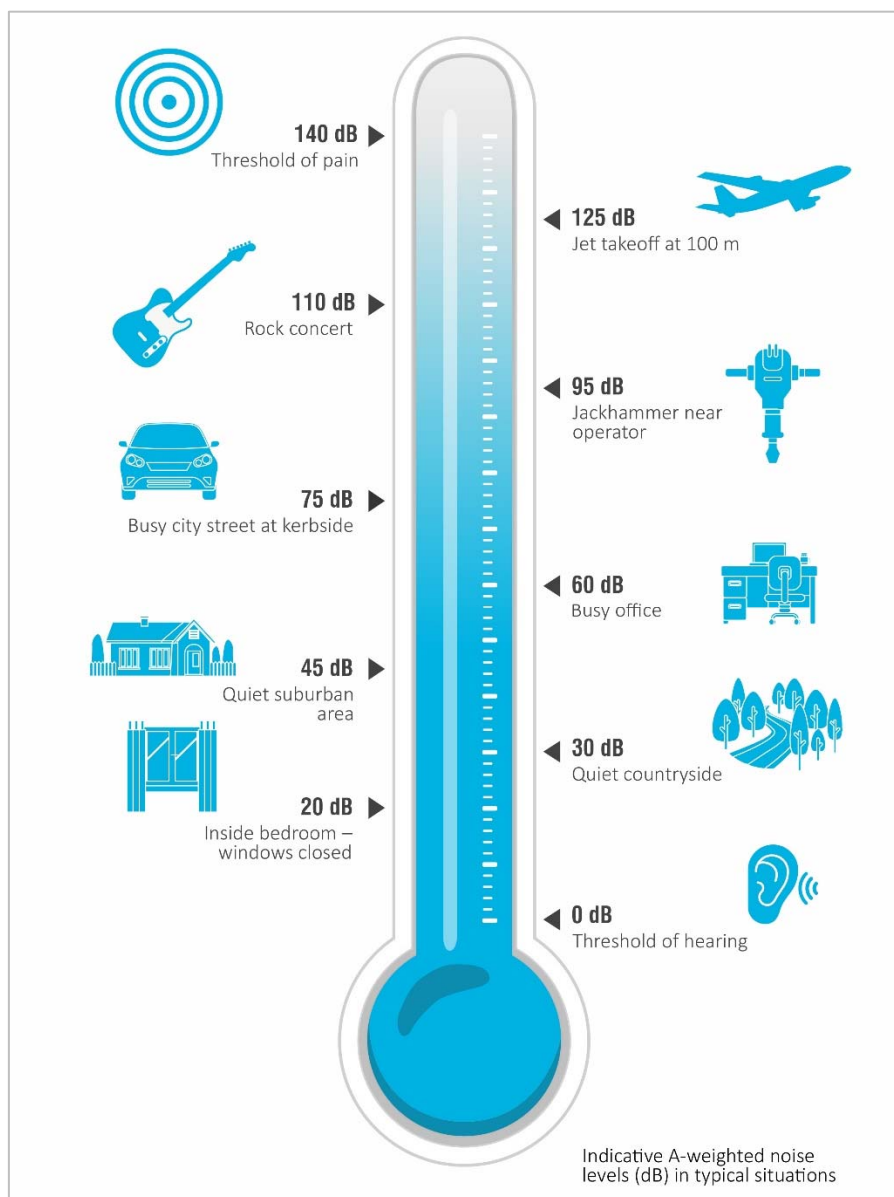


Figure G.1 Common noise levels

Appendix A

DPIE Endorsement

Mr Joel Fleming
Environment & Development Manager
Hunter Quarries
PO Box 23
Karuah, NSW 2324

23/02/2022

Dear Mr Fleming


**Karuah East Quarry Project (MP 09_0175)
Suitably Qualified Persons Endorsement Request**

I refer to your request (MP 09_0175-PA-13) for the Secretary's endorsement of suitably qualified persons to prepare the Noise Management Plan for the Karuah East Quarry Project (MP 09_0175).

The Department has reviewed the nominations and information you have provided and is satisfied that these persons are suitably qualified and experienced. Consequently, I can advise that the Secretary approves the appointment of Lucas Adamson and Katie Teyhan to prepare the Noise Management Plan.

If you wish to discuss the matter further, please contact James McDonough on (02) 9585 6313.

Yours sincerely



Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Secretary

Appendix B

EPA Response



Our ref: DOC22/196401-2

The Department of Planning, Industry and Environment
Via the Major Projects Portal

16 March 2022

Request for review and consultation on Karuah East Quarry Noise Management Plan

Dear Sir/Madam

Reference is made to your email dated 14th March 2022, to the NSW Environment Protection Authority ("EPA") in relation to the consultation of the 'Karuah East Quarry Project - Noise Management Plan (MP09_0175-PA-15)'.

The EPA encourages the development of such plans to ensure that proponents have met their statutory obligations and designated environmental objectives. However, EPA does not review these documents as our role is to set environmental objectives for environmental/conservation management, not to be directly involved in the development of strategies to achieve those objectives.

The EPA has not reviewed this report and accordingly offers no comments in relation to it.

If you require any further information regarding this matter please contact Marshall Sing on (02) 4908 6827.

Yours sincerely

Natasha Ryan
Unit Head, Regulatory Operations

Appendix C

Relevant Project Approval 09_0175 Conditions

Table C.1 Relevant PA 09_0175 Conditions of consent

Condition	Details	Relevant NMP Section										
Schedule 2, Condition 2	<p>The Applicant must carry out the development:</p> <p>(a) in compliance with the conditions of this consent;</p> <p>(b) in accordance with the statement of commitments in Appendix 6;</p> <p>(c) in accordance with all written directions of the Planning Secretary; and</p> <p>(d) generally in accordance with the EA, EA (MOD1), EA (MOD 2), SEE (MOD 8) and MR (MOD 9).</p>	This Plan										
Schedule 2, Condition 3	<p>Consistent with the requirements in this consent, the Planning Secretary may make written directions - to the Applicant in relation to:</p> <p>(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and</p> <p>(b) the implementation of any actions or measures contained in any such document referred to in condition 3(a).</p>	-										
Schedule 2, Condition 4	<p>The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(d). In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(d), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.</p>	-										
Schedule 2, Condition 7	<p>Hours of operation</p> <p>The Applicant must comply with the operating hours in Table 1.</p> <p><i>Table 1: Operating hours</i></p> <table><tr><th>Activity</th><th>Operating Hours</th></tr><tr><td>Quarrying Operations</td><td>7:00 am to 9:00 pm, Monday to Friday 7:00 am to 10:00 pm Monday to Friday on 50 calendar days per year; and 7:00 am to 6:00 pm, Saturday. No drilling 6:00 pm to 10:00 pm Monday to Friday or 1:00 pm to 6:00 pm Saturday No quarrying operations on Sundays or Public Holidays.</td></tr><tr><td>Product loading and dispatch</td><td>5:00 am to 9:00 pm Monday to Friday 5:00 am to 10:00 pm Monday to Friday on 50 calendar days per year 6:00 am to 6:00 pm Saturday No product loading and dispatch on Sundays or Public Holidays</td></tr><tr><td>Construction activities</td><td>7.00 am to 6.00 pm, Monday to Friday; and 8.00 am to 1.00 pm, Saturdays, unless noise from these activities does not exceed 40 dB(A) <i>L_{Aeq(15 min)}</i> at any privately-owned residence.</td></tr><tr><td>Maintenance activities</td><td>24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence</td></tr></table> <p><i>Note: This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons regarding works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.</i></p>	Activity	Operating Hours	Quarrying Operations	7:00 am to 9:00 pm, Monday to Friday 7:00 am to 10:00 pm Monday to Friday on 50 calendar days per year; and 7:00 am to 6:00 pm, Saturday. No drilling 6:00 pm to 10:00 pm Monday to Friday or 1:00 pm to 6:00 pm Saturday No quarrying operations on Sundays or Public Holidays.	Product loading and dispatch	5:00 am to 9:00 pm Monday to Friday 5:00 am to 10:00 pm Monday to Friday on 50 calendar days per year 6:00 am to 6:00 pm Saturday No product loading and dispatch on Sundays or Public Holidays	Construction activities	7.00 am to 6.00 pm, Monday to Friday; and 8.00 am to 1.00 pm, Saturdays, unless noise from these activities does not exceed 40 dB(A) <i>L_{Aeq(15 min)}</i> at any privately-owned residence.	Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence	Section 3.2
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Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence											
Schedule 2, Condition 12	<p>Operation of Plant and Equipment</p> <p>All plant and equipment used on site, or to monitor the performance of the development, must be:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	Sections 2.2 and 4										

Table C.1 **Relevant PA 09_0175 Conditions of consent**

Condition	Details	Relevant NMP Section
Schedule 2, Condition 13	<p>Staged submission of any strategy, plan or program</p> <p>With the approval of the Planning Secretary, the Applicant may submit any strategy, plan or program required by this consent on a progressive basis.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • While any strategy, plan or program may be submitted on a progressive basis, the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program. 	-
Schedule 2, Condition 15	<p>Compliance</p> <p>The Applicant must ensure that all employees, contractors and sub-contractors are made aware of, and instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.</p>	Section 4.3
Schedule 2, Condition 16	<p>Applicability of Guidelines</p> <p>References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, standards or policies in the form they are in as at the date of this consent.</p> <p>However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, standard or policy, or a replacement of them.</p>	Section 2
Schedule 2, Condition 17	<p>Evidence of Consultation</p> <p>Where conditions of this consent require consultation with an identified party, the Applicant must:</p> <ul style="list-style-type: none"> (a) consult with the relevant party prior to submitting the subject document; (b) provide details of the consultation undertaken including: <ul style="list-style-type: none"> (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved. 	Section 1.2 and Appendix A

Table C.1 Relevant PA 09_0175 Conditions of consent

Condition	Details	Relevant NMP Section																																			
Schedule 3, Condition 3	<p>NOISE</p> <p>Operational Noise Criteria</p> <p>Except for the carrying out of construction works, the Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 2 at any residence on privately-owned land.</p> <p><i>Table 2: Operational noise criteria dB</i></p> <table><tr><th>Noise Assessment Location^a</th><th>Morning Shoulder L_{Aeq} (15 min)</th><th>Morning Shoulder L_{Amax}</th><th>Day L_{Aeq} (15 min)</th><th>Evening L_{Aeq} (15 min)</th></tr><tr><td>A</td><td>35</td><td>52</td><td>42</td><td>40</td></tr><tr><td>B</td><td>35</td><td>52</td><td>40</td><td>40</td></tr><tr><td>G</td><td>35</td><td>52</td><td>43</td><td>39</td></tr><tr><td>H</td><td>35</td><td>52</td><td>44</td><td>46</td></tr><tr><td>I</td><td>35</td><td>52</td><td>40</td><td>37</td></tr><tr><td>All other residences</td><td>35</td><td>52</td><td>40</td><td>35</td></tr></table> <p>Noise generated by the development must be monitored and measured in accordance with the relevant procedures and modifications (including certain meteorological conditions) of the NPfl.</p>	Noise Assessment Location ^a	Morning Shoulder L _{Aeq} (15 min)	Morning Shoulder L _{Amax}	Day L _{Aeq} (15 min)	Evening L _{Aeq} (15 min)	A	35	52	42	40	B	35	52	40	40	G	35	52	43	39	H	35	52	44	46	I	35	52	40	37	All other residences	35	52	40	35	Sections 3.2 and 5.1.
Noise Assessment Location ^a	Morning Shoulder L _{Aeq} (15 min)	Morning Shoulder L _{Amax}	Day L _{Aeq} (15 min)	Evening L _{Aeq} (15 min)																																	
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B	35	52	40	40																																	
G	35	52	43	39																																	
H	35	52	44	46																																	
I	35	52	40	37																																	
All other residences	35	52	40	35																																	
Schedule 3, Condition 3A	The noise criteria in Table 2 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Section 5.1.																																			
Schedule 3, Condition 4	<p>Road Traffic Noise Criteria</p> <p>The Applicant must take all reasonable and feasible measures to ensure that the traffic noise generated by the development does not cause additional exceedances of the criteria in Table 3 at any residence on privately-owned land.</p> <p><i>Table 3: Road traffic noise criteria</i></p> <table><tr><th>Road</th><th>Criteria (Day^a)</th></tr><tr><td>Pacific Highway</td><td>60 dB(A) L_{Aeq} (15 hour)</td></tr><tr><td>Local roads</td><td>55 dB(A) L_{Aeq} (1 hour)</td></tr></table> <p>^a Day is the period from 7 am to 10 pm every day in accordance with the EPA's NSW Road Noise Policy (2011).</p>	Road	Criteria (Day ^a)	Pacific Highway	60 dB(A) L _{Aeq} (15 hour)	Local roads	55 dB(A) L _{Aeq} (1 hour)	Section 5.2																													
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Schedule 3, Condition 6	<p>Noise Operating Conditions</p> <p>The Applicant must:</p> <ul style="list-style-type: none">(a) take all reasonable steps to minimise noise from construction and operational activities, including low frequency noise and other audible characteristics, associated with the development;(b) implement reasonable and feasible noise attenuation measures on all plant and equipment that will operate in noise sensitive areas;(c) operate a comprehensive noise management system commensurate with the risk of impact;(d) take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions when the noise criteria in this consent do not apply (see NPfl);(e) carry out quarterly attended noise monitoring (unless otherwise agreed by the Planning Secretary) to determine whether the development is complying with the relevant conditions of this consent; and(f) regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	This Plan																																			

Table C.1 **Relevant PA 09_0175 Conditions of consent**

Condition	Details	Relevant NMP Section
Schedule 3, Condition 7	<p>Noise Management Plan</p> <p>The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; (b) be prepared in consultation with the EPA; (c) describe the measures to be implemented to ensure: <ul style="list-style-type: none"> (i) compliance with the noise criteria and operating conditions in this consent; (ii) best practice management is being employed; (iii) noise impacts of the development are minimised during noise-enhancing meteorological conditions when the noise criteria in this consent do not apply (see NPfl); (d) describe the noise management system in detail; and (e) include a monitoring program that: <ul style="list-style-type: none"> (i) is capable of evaluating the performance of the development; (ii) monitors noise at the nearest and/or most affected residences; (iii) adequately supports the noise management system; (iv) includes a protocol for distinguishing noise emissions of the development from any neighbouring developments; and (v) includes a protocol for identifying any noise-related exceedance, incident or noncompliance and for notifying the Department and relevant stakeholders of any such event. 	This Plan
Schedule 3, Condition 7A	The Applicant must implement the plan as approved by the Planning Secretary.	This Plan
Schedule 3, Condition 17	<p>Meteorological Monitoring</p> <p>For the life of the development, the Applicant must ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.</p>	Section 6.4
Schedule 4, Condition 1	<p>Notification of Landowners</p> <p>As soon as practicable and no longer than 7 days after obtaining monitoring results showing an:</p> <ul style="list-style-type: none"> (a) exceedance of any noise, blasting and air quality criteria in Schedule 3, the Applicant must provide the details of the exceedance to any affected landowners and/or tenants; and (b) an exceedance of the relevant air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time) to the affected landowners and/or existing tenants of the land. 	Section 9.2
Schedule 4, Condition 2	<p>Independent Review</p> <p>If a landowner considers the development to be exceeding any noise, blasting or air quality criterion in Schedule 3 of this consent, they may ask the Planning Secretary in writing for an independent review of the impacts of the development on their land.</p>	Section 9.2
Schedule 4, Condition 3	<p>Independent Review</p> <p>If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.</p>	Section 9.2

Table C.1 Relevant PA 09_0175 Conditions of consent

Condition	Details	Relevant NMP Section				
Schedule 4, Condition 4	<p>Independent Review</p> <p>If the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary’s decision, the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:</p> <p> (i) consult with the landowner to determine their concerns;</p> <p> (ii) conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3 of this consent; and</p> <p> (iii) if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria;</p> <p>(b) give the Planning Secretary and landowner a copy of the independent review; and</p> <p>(c) comply with any written requests made by the Planning Secretary to implement any findings of the review.</p>	Section 9.2				
Schedule 4, Condition 5	<p>Mitigation upon request</p> <p>Upon receiving a written request for mitigation from the owner of any residence on privately-owned land listed in Table 12, the Applicant must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner. These measures must be consistent with the measures outlined in the <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development</i> (NSW Government, 2014). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise impacts of the development. The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of quarrying operations.</p> <p><i>Table 12: Land subject to additional mitigation upon request</i></p> <table><tr><th>Mitigation Basis</th><th>Land^a</th></tr><tr><td>Noise</td><td>H</td></tr></table> <p><small>^a The location of the land referred to in Table 12 is shown in Appendix 2</small></p>	Mitigation Basis	Land ^a	Noise	H	Section 4.4
Mitigation Basis	Land ^a					
Noise	H					
Schedule 5, Condition 2	<p>Adaptive Management</p> <p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in this consent. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <p>(a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;</p> <p>(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and</p> <p>(c) implement remediation measures as directed by the Planning Secretary.</p>	Section 4				

Table C.1 Relevant PA 09_0175 Conditions of consent

Condition	Details	Relevant NMP Section
Schedule 5, Condition 3	<p>Management Plan Requirements</p> <p>The Applicant must ensure that the Management Plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p> <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant commitments or recommendations identified in the documents listed in condition 2(d) of Schedule 2; • any relevant limits or performance measures/criteria; and • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> • impacts and environmental performance of the development; and • effectiveness of any management measures (see (c) above); <p>(e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and <p>(h) a protocol for periodic review of the plan.</p> <p><i>Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	This Plan

Table C.1 **Relevant PA 09_0175 Conditions of consent**

Condition	Details	Relevant NMP Section
Schedule 5, Condition 4	<p>Annual Review</p> <p>By the end of March each year, the Applicant must review the environmental performance of the development to the satisfaction of the Planning Secretary. This review must:</p> <p>(a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against:</p> <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the documents referred to in condition 2(d) of Schedule 2 of this consent; <p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the development;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p> <p>(f) describe the measures that would be implemented over the current calendar year to improve the environmental performance of the development.</p>	Section 9
Schedule 5, Condition 5	<p>Revision of Strategies, Plans and Programs</p> <p>Within 3 months of:</p> <p>(a) the submission of an annual review under Condition 4 above;</p> <p>(b) the submission of an incident report under Condition 7 below;</p> <p>(c) the submission of an audit report under Condition 9 below; or</p> <p>(d) any modification to the conditions of this consent, (unless the conditions require otherwise), the Applicant must review the strategies, plans, and programs required under this consent, to the satisfaction of the Planning Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Planning Secretary.</p> <p><i>Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.</i></p>	Section 8.3
Schedule 5, Condition 7	<p>Incident Notification</p> <p>The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.</p>	Section 6.7 and 9.1
Schedule 5, Condition 7A	<p>Reporting</p> <p>Non-compliance Notification</p> <p>Within seven days of becoming aware of a non-compliance, The Applicant must notify the Department of the non-compliance. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p> <p><i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</i></p>	Section 9.1

Table C.1 Relevant PA 09_0175 Conditions of consent

Condition	Details	Relevant NMP Section
Schedule 5, Condition 8	<p>Regular Reporting</p> <p>The Applicant must regularly report on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.</p>	Section 9.3
Schedule 5, Condition 9	<p>Independent Environmental Audit</p> <p>Within 12 months of the commencement of development on the site, and every 3 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <ul style="list-style-type: none"> (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL and/or Water Licence (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under these approvals; and (e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals. <p><i>Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Planning Secretary.</i></p>	Section 9
Schedule 5, Condition 10	<p>Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.</p>	Section 9.2
Schedule 5, Condition 11	<p>Access to Information</p> <p>The Applicant must:</p> <ul style="list-style-type: none"> (a) make the following information publicly available on its website: <ul style="list-style-type: none"> • the documents referred to in condition 2(d) of Schedule 2 of this consent; • any statutory approvals for the development; • approved strategies, plans and/ programs; • a summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a complaints register, updated quarterly; • minutes of CCC meetings; • annual reviews; • any independent environmental audit, and the Applicant's response to the recommendations in any audit; and • any other matter required by the Planning Secretary; and (b) keep this information up-to-date, to the satisfaction of the Planning Secretary 	Section 9.3

Appendix 6	Noise, Blasting and Vibration	Section 2.2 and 4.1
Statement of Commitments	The following will be undertaken:	
Section 5	<ul style="list-style-type: none"> • Enclosure of the Jaw Crusher with 100 mm thick concrete panels on the North, East and South sides. Roofing materials to have an acoustic rating of STC28; • Enclosure of the Cone Crushers on the Northern and eastern elevations with materials having an acoustic rating of STC28. Southern and western elevations and roof to be enclosed with Colorbond; • Purchase and use of generator sets which are acoustically treated including complete enclosure of the engine and generator, acoustically treated exhaust systems and cooling systems; • Noise compliance monitoring will be undertaken in accordance with conditions of consent and Noise Management Plan by a suitably qualified acoustic expert. The monitoring will consider the performance of the quarry in relation to the development specific noise (as established in the EMM Revised Noise Impact Assessment August 2021) and vibration and blast criteria established in the SLR Noise and Blasting Impact Assessment (dated 2 November 2012); • The Applicant will not fire blasts at the existing quarry and the proposed Karuah East quarry at the same time; • The Applicant will implement a blasting program where nearby receivers are notified in advance of a blast; • The following control measures for vibration will be undertaken: <ul style="list-style-type: none"> – Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading; – Changing the burden and spacing by altering the drill pattern and/or delay layout or altering the hole inclination; – Use the minimum practicable sub drilling which gives satisfactory toe conditions; and – Investigate alternative rock breaking techniques. • The following control measures for air blasting will be undertaken: <ul style="list-style-type: none"> – Reducing the maximum instantaneous charge (MIC) by using delays, reduced hole diameter and/or deck loading; – Ensure stemming depth and type is adequate; – Eliminate exposed detonating cord and secondary blasting; – Restrict blasting events to favourable weather conditions; – Orient quarry faces away from potentially sensitive receivers; – Use a hole spacing and burden which will ensure that the explosive force is just sufficient to break the ore to the required size; and – The Applicant will take particular care where the face is already broken and consider deck loading where appropriate to avoid broken ground or cavities in the face. • Splitting or hammering of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock will not be undertaken after 6:00 pm; • The Applicant will implement training to ensure staff are aware of the sensitivity of noise emissions; • Product will be loaded into trucks from as low a height as possible. • Loading of Class 1 (700 mm – 1200 mm) and Class 2 (400 mm – 700 mm) rock for dispatch during the following hours will be undertaken via excavator ‘grabs’ using the hydraulic excavator rock grab attachment rather than a bucket attachment: <ul style="list-style-type: none"> – - 5:00 am to 7:00 am, Monday to Friday; – - 6:00 pm to 9:00 pm, Monday to Friday; – - 9:00 pm to 10:00 pm, Monday to Friday on up to 50 calendar days per year; and – - 6:00 am to 7:00 am, Saturdays. 	

