



Noise management plan

Dunmore Quarry

Prepared for Boral Resources (NSW) Pty Ltd | 11 December 2017



Noise management plan

Dunmore Quarry

Prepared for Boral Resources (NSW) Pty Ltd | 11 December 2017

Ground Floor, Suite 01, 20 Chandos Street
St Leonards, NSW, 2065

T +61 2 9493 9500

F +61 2 9493 9599

E info@emmconsulting.com.au

www.emmconsulting.com.au

Noise management plan

Final

Report J17274RP1 | Prepared for Boral Resources (NSW) Pty Ltd | 11 December 2017

Prepared by **Lucas Adamson**

Approved by **Najah Ishac**

Position Acoustic Consultant

Position Director

Signature



Signature



Date 11 December 2017

Date 11 December 2017

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.

© Reproduction of this report for educational or other non-commercial purposes is authorised without prior written permission from EMM provided the source is fully acknowledged. Reproduction of this report for resale or other commercial purposes is prohibited without EMM's prior written permission.

Document Control

Version	Date	Prepared by	Reviewed by
V1	23 October 2017	Lucas Adamson	Najah Ishac
V2	20 November 2017	Lucas Adamson	Najah Ishac
V3	22 November 2017	Lucas Adamson	Najah Ishac
V4	11 December 2017	Lucas Adamson	Katie Teyhan



T +61 (0)2 9493 9500 | F +61 (0)2 9493 9599

Ground Floor | Suite 01 | 20 Chandos Street | St Leonards | New South Wales | 2065 | Australia

www.emmconsulting.com.au

Executive Summary

This Noise Management Plan (NMP) for Dunmore Quarry (the quarry) has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Boral Resources (NSW) Pty Ltd (Boral).

The NMP has been prepared to provide a description of the measures to be implemented by Boral to mitigate noise impacts and detail noise monitoring requirements associated with the quarry in accordance with the requirements of the development consent.

The following action table summarises the quarry's responsibilities regarding noise management.

Table E.1.1 NMP action table

Condition	NMP reference	Action	When	Responsibility	Frequency
Development consent					
Schedule 4 Condition 14	Sections 2.5, 4, and 5.6	Prepare NMP in consultation with EPA	Prior to Mod 9 quarrying	BPG ¹	Once only
		Submit NMP to DP&E	Prior to Mod 9 quarrying	BPG ¹	Once only
Schedule 5 Condition 12	Section 2.8	Place NMP on website	n/a	BPG ¹	When change in NMP occurs
Schedule 5 Condition 4	Section 6	Review of NMP	Within 3 months of a non-compliance, annual review, audit or modification	Site Environment Manager	As required
Schedule 4 Condition 13	Sections 2.4, 4.1, 4.2	Noise Monitoring Report (NMR)	Within 3 months from date of last modification	Site Environment Manager	Every new modification
			12 months from last NMR	Site Environment Manager	Annually
Schedule 4 Condition 13 a)	Section 2.4	Commission report	Within 3 months from date of modification	Site Environment Manager	Annually
Schedule 4 Conditions 7 and 13	Sections 2.2, 3.1, 3.2, 3.3, 3.4	Undertake noise monitoring	After commissioning	Approved specialist	Annually
Schedule 4 Condition 13 b)	Section 2.4, 3.5	Provide to DP&E and EPA	Within 1 month of commissioning	Site Environment Manager	Annually
Schedule 4A Condition 1, Schedule 5 Condition 7	Section 4.3 and 4.4	Notify any non-compliance to DP&E	As soon as practical and within 24hrs	Site Environment Manager	When non compliance measured
		Provide a detailed report of non-compliance to DP&E	Within 7 days of non-compliance	Site Environment Manager	7 days from non-compliance
Schedule 4A Condition 1	Section 4.3 and 4.4	Provide results to affected residents	Within 7 days of non-compliance	Site Environment Manager	7 days from non-compliance
		Update site webpage with results	Within 7 days of non-compliance	Site Environment Manager	7 days from non-compliance
Schedule 4 Condition 6A	Section 2.1	Noise mitigation on request from landowner	Agreement within 3 months of request	Quarry Manager	On request
Schedule 5 Condition 2 a)	N/A - not included in NMP	Detailed baseline data	N/A	N/A	N/A
Schedule 5 Condition 2 b)	Section 2.2	Statutory requirements, limits and indicators	NMP Commissioning	BPG ¹	When change in NMP occurs
Schedule 5 Condition 2 c)	Section 4.6	Compliance measures	NMP Commissioning	BPG ¹	When change in NMP occurs
Schedule 5 Condition 2 d)	Section 4.2 Section 5.1	Environmental monitoring/reporting	NMP Commissioning	Site Environment Manager	When change in NMP occurs
Schedule 5 Condition 2 e)	Section 5.4	Contingency plan	NMP Commissioning	Site Environment Manager	When change in NMP occurs

Table E.1.1 NMP action table

Condition	NMP reference	Action	When	Responsibility	Frequency
Schedule 5 Condition 2 f)	Section 5.6 Chapter 6	Environmental improvement program	NMP Commissioning	Site Environment Manager	When change in NMP occurs
Schedule 5 Condition 2 g)	Section 5.4 and 5.5	Incident/complaint protocol	NMP Commissioning	Site Environment Manager	When change in NMP occurs
Schedule 5 Condition 2 h)	Chapter 6	NMP review protocol	NMP Commissioning	BPG ¹	When change in NMP occurs
Schedule 5 Condition 2 i)	Executive Summary	Document control table	NMP Commissioning	BPG ¹	When change in NMP occurs
EPL					
EPL condition M5	Section 4.5	Record details of noise complaint in SIMS	Not specified	Quarry Manager	When complaint received
EPL condition M6	Section 4.5	Notify public of Telephone complaints line	Not specified	Quarry Manager	When complaint received

Notes: 1. BPG = Boral Property Group

Table of contents

Executive Summary	E.1
Chapter 1 Introduction	1
1.1 Site description	1
1.2 Purpose and scope	1
Chapter 2 Development consent noise conditions	5
2.1 Additional mitigation upon request	5
2.2 Noise limits	5
2.3 Operating Hours	7
2.4 Noise monitoring	7
2.5 Noise management plan	7
2.6 Notification of exceedances	9
2.7 Independent review	9
2.8 Access to information	10
Chapter 3 Responsibilities	11
Chapter 4 Noise monitoring methodology	12
4.1 Monitoring standards	12
4.2 Noise monitoring program	12
4.3 Instrumentation	14
4.4 Meteorological parameters	14
4.5 Data analysis	15
4.6 Noise minimisation measures	15
Chapter 5 Reporting	16
5.1 Noise monitoring report	16
5.2 Review of results and reporting	16
5.3 Reporting non-compliances	16
5.4 Non-compliance response strategy	17
5.5 Recording noise complaints	17
5.6 Best practice management	18
5.6.1 Design controls	18
5.6.2 Community consultation committee	18
5.6.3 Meteorological forecasting	19
5.6.4 Change management	19
5.6.5 Training	19
5.6.6 Adaptive management	19
5.6.7 Additional noise mitigation measures	20

Table of contents *(Cont'd)*

Chapter 6	Review and improvement	21
References		22

Appendices

A	Development Consent Noise Conditions
B	Noise monitoring field sheet pro forma

Tables

E.1.1	NMP action table	1
2.1	Assessment locations	6
3.1	Employee and contractor responsibilities	11
4.1	Attended noise monitoring locations	13

Figures

1.1	Noise monitoring and assessment locations	3
-----	---	---

1 Introduction

This Noise Management Plan (NMP) for Dunmore Quarry (the quarry) has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Boral Resources (NSW) Pty Ltd (Boral). The NMP has been prepared to comply with the requirements of Condition 14 of Schedule 4 of the quarry's development consent (Development Consent 470-11-2003). The quarry's environment protection licence (EPL) has also been taken into consideration in the preparation of this NMP.

1.1 Site description

The quarry is a hard rock quarry located on Tabbita Road, Dunmore in the Shellharbour local government area (LGA) approximately 12 kilometres (km) north-west of Kiama and 110 km south of Sydney. It is owned and operated by Boral.

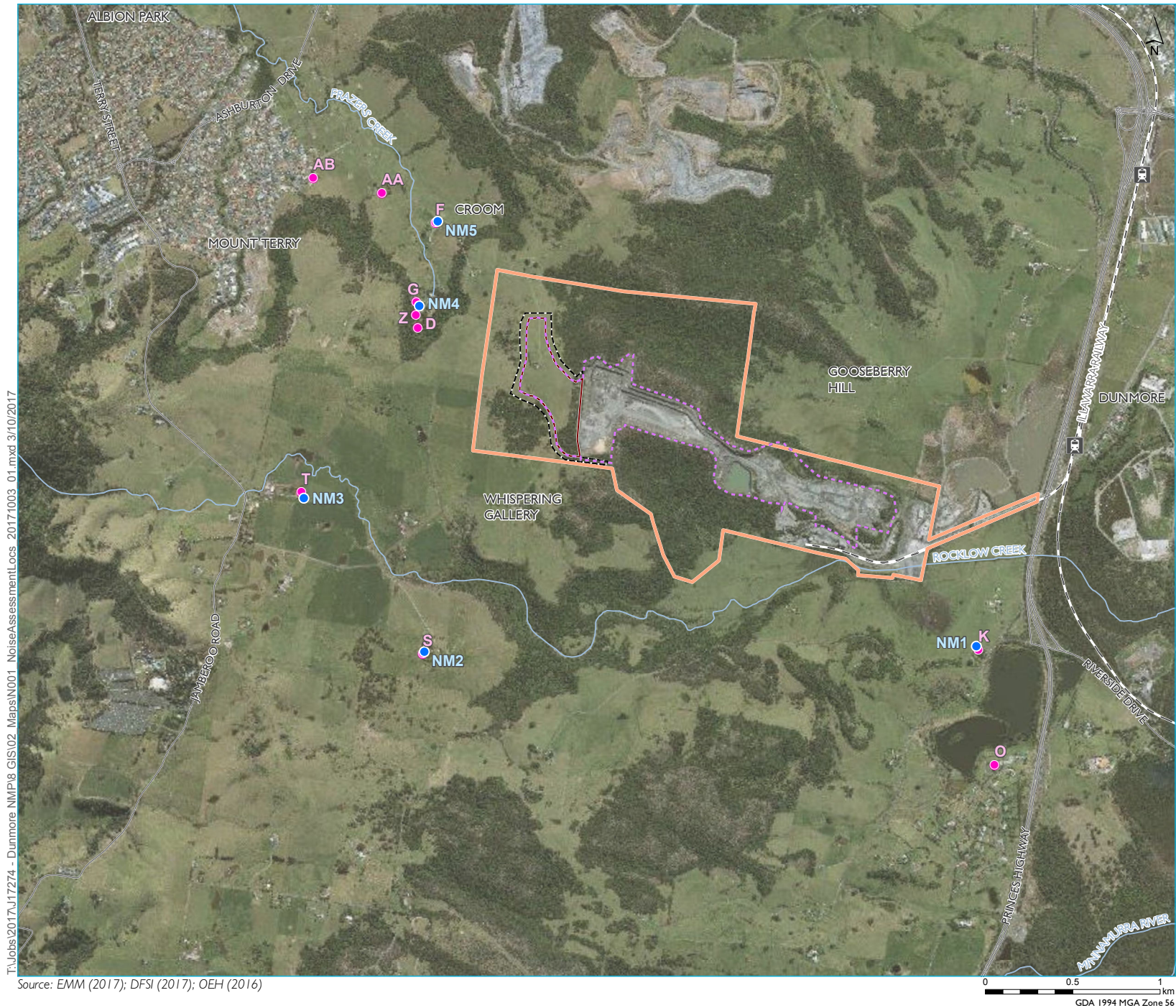
The location of the Dunmore Quarry is shown in Figure 1.1.

1.2 Purpose and scope

The NMP has been prepared to provide a description of the measures to be implemented by Boral to mitigate noise impacts and detail noise monitoring requirements associated with the quarry in accordance with the requirements of Condition 14 of Schedule 4 of the development consent.

The purpose of the NMP is to:

- provide Dunmore the quarry's employees and contractors with a description of their responsibilities, regarding noise management;
- address the relevant conditions/requirements in the development consent and other guidelines relevant to this NMP;
- describe the measures to be implemented to monitor noise emissions from the quarry against relevant regulatory criteria;
- provide a mechanism for assessing noise monitoring results against the relevant regulatory criteria;
- provide a mechanism for assessing the effectiveness of the noise monitoring program; and
- provide mechanisms for the establishment of best practice with respect to minimising noise emissions/impacts.



- KEY**
- Project area
 - Mod 9 disturbance boundary
 - Approved extraction boundary
 - Noise bund
 - Noise monitoring location
 - Modelled privately owned assessment location
 - Road
 - Watercourse
 - - Rail line

Monitoring and assessment locations

Dunmore Quarry
 Noise monitoring and management plan
 Figure 3.1



T:\Jobs\2017\117274 - Dunmore NMP\8 GIS\02 Maps\N001 NoiseAssessmentLocs 20171003 01.mxd 3/10/2017

Source: EMM (2017); DFSI (2017); OEH (2016)

0 0.5 1 km
 GDA 1994 MGA Zone 56

2 Development consent noise conditions

The quarry's development consent contains a number of noise conditions, as described below.

2.1 Additional mitigation upon request

Condition 6A of Schedule 4 of the development consent nominates the locations where additional mitigation must be implemented upon request of the landowner, as follows:

- 6A. Upon receiving a written request from the landowner of any residence on the land listed in Table 1 or Table 1A, 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 Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development (NSW Government, 2014) (as may be updated or replaced from time to time). They must also be reasonable and feasible and proportionate with the level of predicted impact.

If within 3 months of receiving this request from the landowner, the Applicant and the owner 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 Secretary for resolution.

Receiver Locations	Mitigation Basis
Locations AA, D, F, G and Z	Noise

2.2 Noise limits

Condition 7 of Schedule 4 of the development consent nominates the noise limits for the quarry, as follows:

7. The Applicant must ensure that the noise generated by the development does not exceed the criteria specified in Table 2.

Receiver locations	Noise limits dB(A)					
	L _{Aeq,15 minute}				L _{A1,1 minute}	
	Day	Evening	Night	Shoulder	Night	Shoulder
Location K Stocker Residence	49	44	38	47	48	55
Location O Dunmore Lakes	49	44	38	47	48	55
Location J Creagan Residence	Negotiated agreement in place					
Location AA	38	38	38	38	45	45
Locations AB and T	36	36	36	36		
Locations D, F, G and Z	40	40	40	40		
Location S	37	37	37	37		
Other privately owned residences	35	35	35	35		

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

1. Receiver locations are shown in Appendix 2.
2. The above table may be varied if the Applicant enters into a negotiated agreement with any of the affected residents, or if existing agreements become void.
3. Noise from the development is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary, to determine compliance with the LAeq(15 minute) noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors presented in Section 4 of the NSW Industrial Noise Policy must also be applied to the measured noise levels where applicable.
4. Noise from the development is to be measured at 1m from the dwelling façade to determine compliance with the LA1(1minute) noise limits in above table.
5. The noise emissions limits identified in Table 1 apply under meteorological conditions of:
 - wind speeds of up to 3 m/s at 10 metres above ground level; or
 - temperature inversion conditions of up to 3°C/100 m and wind speeds up to 2 m/s at 10 metres above ground level

It is noted that item 5 in the notes below the table should read 'Table 2' not 'Table 1'.

Appendix 2 of the development consent shows the privately owned assessment locations surrounding Dunmore Quarry which are reproduced in Table 2.1.

Table 2.1 Assessment locations

Reference ID	Description	Easting	Northing
D	Privately owned - 316 Croome Rd, Croom	298183	6169201
F	Privately owned - 316 Croome Rd, Croom	298285	6169804
G	Privately owned - 316 Croome Rd, Croom	298176	6169349
J	Privately owned - 4 Swamp Rd, Dunmore	301505	6167630
K	Privately owned – 40 Swamp Rd, Dunmore	301395	6167360
O	Privately owned – 7 Fuller Drive, Dunmore	301486	6166699
S	Privately owned – 86 Croome Vale Rd, Croom	298214	6167335
T	Privately owned – 1338 Jamberoo Rd, Croom	297519	6168261
Z	Privately owned , 316 Croome Rd, Croom	298173	6169276
AA	Privately owned– 272 Croome Rd, Croom	297979	6169974
AB	Privately owned – 11A Whistlers Run, Albion Park	297587	6170062

2.3 Operating Hours

Conditions 9 and 10 of Schedule 4 of the development consent nominate the operating hours for the quarry, as follows:

9. The Applicant must comply with the operating hours in Table 3:

Activity	Days of the Week	Time
Extraction and Processing	Monday - Saturday	6:00am to 10:00pm
Product Transfer to Stockpiles	Monday - Saturday	6:00am to Midnight
Distribution	Monday - Saturday	24 Hours
	Sunday	See Condition, 10 Schedule 4
Maintenance	Monday - Sunday	24 Hours
Construction (Including construction of the bund under Modification 8)	Monday - Saturday	7:00am to 6:00pm Monday to Friday 8:00am to 1:00pm Saturday

Table 3: Operating Hours for the Development

10. The Applicant may only distribute quarry products off-site by road on up to 15 Sundays a year, between 8am and 6pm, unless the EPA approves otherwise. This restriction does not apply to distribution by rail, which is allowed 24 hours a day, 7 days a week.

2.4 Noise monitoring

Condition 13 of Schedule 4 of the development consent nominates the noise monitoring requirements for the quarry, as follows:

13. Within 3 months of the date of this consent, and annually thereafter, unless directed otherwise by the Secretary, the Applicant must:
- commission a suitably qualified person to assess whether the development is complying with the noise impact assessment criteria in Table 2, in general accordance with the NSW Industrial Noise Policy and Australian Standard (AS) 1055-1997: "Description and Measurement of Environmental Noise"; and
 - provide the results of this assessment to the EPA and Secretary within a month of commissioning the assessment.

2.5 Noise management plan

Condition 14 of Schedule 4 of the development consent describes the requirement for a NMP to be prepared, as follows:

14. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA;
 - be submitted to the Secretary for approval prior to commencing quarrying operations in the Croome West Pit, unless the Secretary agrees otherwise;
 - describe the measures to be implemented to ensure:
 - compliance with the noise criteria and operating conditions of this consent;
 - best practice management is being employed;

- noise impacts of the development are minimised during stage 3 extraction of the Croome West Pit, particularly during the shoulder period; and
 - the noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply;
- (d) describe the proposed noise management system; and
- (e) include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 2.

The Applicant must implement the Noise Management Plan as approved from time to time by the Secretary.

Condition 2 of Schedule 5 of the development consent also outlines requirements to be addressed in the preparation of management plans, as follows:

The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:

- (a) detailed baseline data;
- (b) a description of:
- the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - 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;
- (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
- (d) a program to monitor and report on the:
- impacts and environmental performance of the development; and
 - effectiveness of any management measures (see (c) above);
- (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
- (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
- (g) a protocol for managing and reporting any:
- incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria;

- (h) a protocol for periodic review of the plan; and
- (i) a document control table that includes version numbers, dates when the management plan was prepared and reviewed, names and positions of people who prepared and reviewed the management plan, a description of any revisions made and the date of the Secretary's approval.

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

The EPA was contacted and invited to provide input to the NMP, with no comments received. Baseline data, as per Schedule 5 condition 2(a) has not been included in the NMP, as it will be incorporated into future monitoring reports and does not provide any value in the context of this NMP.

2.6 Notification of exceedances

Condition 1 of Schedule 4A of the development consent describes the requirement for notification of exceedances, as follows:

1. As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any criteria in Schedule 4 the Applicant must:
 - (a) provide to any affected landowners and tenants; and,
 - (b) publish on its website the full details of the exceedance.

Any exceedance of any criteria in Schedule 4 is an incident that must be notified to the Department in accordance with condition 7 of Schedule 5 of this consent.

2.7 Independent review

Condition 2 of Schedule 4A of the development consent describes the independent review requirement, as follows:

2. If a landowner considers the development to be exceeding the relevant criteria in Schedule 4, they may ask the Secretary in writing for an independent review of the impacts of the development on their land.

If the Secretary is satisfied that an independent review is warranted, within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
 - consult with the landowner to determine their concerns;
 - conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and
 - if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review; and

- (c) comply with any written requests made by the Secretary to implement any findings of the review.

2.8 Access to information

Condition 12 of Schedule 5 of the development consent describes the information requirements, as follows:

12. By 31 December 2016, unless otherwise agreed by the Secretary, the Applicant must:
 - (a) make the following information publicly available on its website:
 - the documents listed in condition 2 of Schedule 3;
 - current statutory approvals for the development;
 - approved strategies, plans or programs required under the conditions of this consent;
 - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - a complaints register, updated quarterly;
 - the Annual Reviews (over the last 5 years);
 - any independent environmental audit, and the Applicant's response to the recommendations in any audit;
 - any other matter required by the Secretary; and
 - (a) keep this information up-to-date, to the satisfaction of the Secretary.

3 Responsibilities

Table 3.1 provides the quarry's employees and contractors with a description of their responsibilities regarding noise management.

Table 3.1 Employee and contractor responsibilities

Person	Responsibilities
Employees	Responsible for: <ul style="list-style-type: none"> - Observing any noise control instructions and procedures that apply to their work or operations; - Taking action to minimise or prevent noise incidents; and - Reporting noise incidents where apparent.
Team Leaders/ Supervisors	Responsible for: <ul style="list-style-type: none"> - Identifying, reducing and preventing noise emissions; - Monitoring operations and maintenance work to ensure noise emissions are maintained within approved levels; - Initiating action to prevent noise incidents; - Identifying, reporting and recording noise incidents; and - Initiating corrective actions to overcome noise incidents.
Production/ Technical/ Engineering Managers	Responsible for: <ul style="list-style-type: none"> - Ensuring staff are trained with respect to noise awareness, responsibilities, instructions and procedures; - Ensuring noise incidents are investigated and corrective and preventative action taken; - Ensuring operations comply with the conditions of Development Approvals, Environmental Protection Licence and relevant legislation; - Reviewing operations and implementing strategies to reduce noise emissions from the operations. - Developing and implementing contingency plans as required to remedy nuisance and minimise noise complaints.
HSE Advisor	Responsible for: <ul style="list-style-type: none"> - Ensuring periodic noise monitoring is carried out. - Ensuring that an appropriate plan is developed and implemented if noise limits are found to have been exceeded. - Reviewing noise complaints received to determine if particular noise issues/trends are being identified.
Site Operations Manager	Responsible for: <ul style="list-style-type: none"> - Approving any communications to external parties on noise generating activities before their release. - Ensuring all personnel are aware of licence, DA and other regulatory requirements relating to noise. - Implementing Boral environmental policy on site; - Ensuring site environment performance objectives and targets are established, monitored and achieved; - Defining responsibilities for the EMS; - Ensuring the availability of resources; - Communicating the importance of the EMS and meeting the statutory and regulatory requirements; - Conducting management reviews of the EMS; - Ensuring that material environmental incidents are immediately reported to relevant Government Authorities; - Verifying the implementation of corrective and preventive actions; and - Recognising and responding to community concerns.

4 Noise monitoring methodology

The monitoring program is designed to include noise monitoring at representative locations in the vicinity of the quarry. Data from the monitoring program will be used to determine the noise impact of quarry operations at the surrounding receivers and the compliance status of the quarrying operations in relation to the relevant consent conditions.

4.1 Monitoring standards

Noise monitoring will be undertaken in accordance with the relevant Australian Standards and EPA guidelines including:

- AS 1055.1-1997 *Acoustics - Description and measurement of environmental noise - General procedures*;
- AS IEC 61672.1-2004 *Electroacoustics - Sound level meters – Specifications*; and
- *NSW Industrial Noise Policy (INP) (EPA 2000)*.

All acoustic instrumentation used for monitoring under the noise monitoring program will have current NATA or manufacturer calibration certificates.

4.2 Noise monitoring program

Operator attended noise monitoring is used to quantify and describe the acoustic environment at each monitoring location at the time of monitoring. The results are compared with the noise criteria defined in the development consent to assess compliance. The attended noise monitoring program will be used to:

- identify the individual noise sources contributing to the ambient noise environment wherever possible;
- quantify the contribution from quarry operations at monitoring locations;
- determine whether a modifying factor should be applied to the contributing quarry noise levels (in accordance with the INP); and
- gain an understanding of the effects of meteorological conditions on the propagation of the noise from the quarry to the monitoring location.

As per Condition 13(a) of Schedule 4 of the development consent, initial (within three months) and annual attended monitoring is required to demonstrate compliance with the assessment criteria in Condition 7 of Schedule 4 as presented in Section 2.2. The attended monitoring locations are listed in Table 4.1 and shown on Figure 1.1. The five attended monitoring locations are representative of the nearest privately owned receptors based on the results of the *Modification 9 Noise Impact Assessment (EMM 2016)*. This approach is consistent with Chapter 11 of the INP.

The monitoring locations (NM1 to NM5) shown are indicative and, where appropriate, preference to publically accessible positions should be adopted to reduce disturbance to the nearby residents.

Table 4.1 Attended noise monitoring locations

ID	Monitoring frequency	Description	Representative residences	Noise limits			
				L _{Aeq,15 minute}		L _{A1,1 minute}	
				Day	Evening	Shoulder	Shoulder
NM1	Annually	South eastern residences	K, O	49	44	47	55
NM2	Annually	Southern residences	S	37	37	37	45
NM3	Annually	South western residences	T	36	36	36	45
NM4	Annually	Western residences	G, D, Z	40	40	40	45
NM5	Annually	North western residences	F, AA, AB	40	40	40	45

Compliance with noise limits in the EPL will be assessed by conducting daytime, evening and morning shoulder attended noise surveys once per year. Suitably qualified acoustical consultants will undertake the annual compliance monitoring. The attended noise monitoring must include, as a minimum, one 15 minute measurement at each of the five attended noise monitoring locations during the following periods:

- daytime (7 am-6 pm Monday to Saturday and 8 am-6 pm Sundays and public holidays);
- evening (6 pm to 10 pm); and
- morning shoulder (6 am to 7 am).

For each 15 minute attended noise monitoring period, the following information will be 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 wind speed (including the height above ground at which the measurement was taken), wind direction and humidity. This should include data captured by the on-site weather station as well as at the microphone position;
- qualitative meteorological information such as cloud cover, fog or rainfall;
- instrument type and calibration details before and after the monitoring period;
- the L_{Aeq,15 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 minute} or L_{Amax} noise levels (to allow comparison with the relevant sleep disturbance criteria);
- notes that identify the noise source that contribute to the maximum noise levels (L_{A1} or L_{Amax}) and noise sources that contribute to the overall noise environment or for periods of time when a specific noise source is audible presented on a run-chart of the recorded noise levels;

- an estimate of the noise contribution from operations from Dunmore Quarry or from other identifiable noise sources;
- measurements in one-third octave bands from 10 Hz to 8 kHz inclusive (or a broader range of bands) for the 15 minute interval to assess if any of the noise sources exhibit tonal characteristics that may require modifying factors to be applied;
- measurement of C-weighted and A-weighted level to assess low frequency noise in accordance with Section 4 of the INP;
- any other data suitable for assessing the relative contribution of quarry-generated noise to the overall noise being measured;
- notes that identify the noise source that contributed to the overall noise environment; and
- recommendations or comments (where considered appropriate).

In accordance with the methodology outlined in Section 3 of the INP, if any of the data in a 15 minute period is affected by rain or wind speeds in excess of 3 m/s then, weather permitting, another entire 15 minute period of data unaffected by rain or excessive wind shall be undertaken on the same day. A noise monitoring field sheet pro forma has been included in Appendix B.

4.3 Instrumentation

All acoustic monitoring equipment shall meet the requirements of *AS IEC 61672.1-2004 Electroacoustics - Sound level meters - Specifications* and carry current NATA or manufacturer calibration certificates. Instrument calibration shall be checked before and after each measurement survey, with the variation in calibrated levels not exceeding ± 0.5 dB.

The noise monitor will be programmed to record statistical noise level indices continuously in 15 minute intervals, including L_{Amax} , L_{A1} , L_{A50} , L_{A90} , L_{A99} , L_{Amin} and L_{Aeq} , using 'fast' time response.

4.4 Meteorological parameters

Note 5 of Table 2 in Condition 7 of Schedule 4 the development consent, relevant to meteorological data is reproduced as follows:

5. The noise emissions limits identified in Table 1 apply under meteorological conditions of:
 - wind speeds of up to 3 m/s at 10 metres above ground level; or
 - temperature inversion conditions of up to 3°C/100 m and wind speeds up to 2 m/s at 10 metres above ground level

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.

Assessment of the meteorological conditions during the noise surveys will be made using the following parameters obtained from the on-site weather station:

- mean wind speed;
- mean wind direction; and

- aggregate rainfall.

4.5 Data analysis

The $L_{Aeq,15 \text{ minute}}$ noise level contributions from all quarrying operations as well as the overall ambient noise levels together with the weather and quarry operating conditions shall be reported on an annual basis.

The contributed noise emissions from quarrying operations shall be evaluated and assessed against the noise level criteria given in Table 2 in Condition 7 of Schedule 4 of the development consent (refer to Section 2.2) and to baseline data presented in the EIS. Compliance may be determined by:

- post analysis of audio recordings or 1/3 octave centre frequency band data;
- direct measurement against the consent criteria;
- operator estimated $L_{Aeq,15 \text{ minute}}$ contribution;
- operator estimated $L_{A1,1 \text{ minute}}$ contribution;
- by calculation from near field measurements;
- by measurement at a representative location; or
- a combination of any or all the above methods as approved by the EPA or in accordance with the INP or its replacement.

4.6 Noise minimisation measures

In *Dunmore Quarry Modification 9 – Noise Assessment* (EMM 2016), it was predicted that noise levels would exceed non-mandatory EPA criteria at nearby residences during Stage 3 extraction (ie operations at the western most point of the Croome West Pit) under adverse weather conditions.

As per the Modification 9 noise assessment, adverse weather conditions experienced at the site are defined as:

- wind speeds of 2.5 metres per second during the evening period; and
- atmospheric stability category F during the morning shoulder period.

As such, during the latter phases of Stage 3 extraction, operations at the western most points of the Croome West Pit will be restricted to the lower benches during the these periods, when the relevant adverse weather conditions prevail as guided by the on-site weather station.

5 Reporting

5.1 Noise monitoring report

All routine monitoring results will be documented and reported. Initially this will be three months from the date of the consent. Afterwards it will be annually.

Annual reports must consist of the following information:

- summary of all attended noise monitoring results;
- measured, calculated and/or operator estimated quarry $L_{Aeq,15 \text{ minute}}$ contributed noise levels for each monitoring location;
- measured, calculated and/or operator estimated quarry L_{Amax} or $L_{A1,1 \text{ minute}}$ contributed noise levels for each monitoring location;
- statement of compliance/non-compliance; and
- details of any complaints relating to noise and their state of resolution.

5.2 Review of results and reporting

A suitably qualified noise monitoring contractor undertaking the monitoring on behalf of Boral will provide a monitoring report outlining results of the survey.

Boral will review the monitoring report provided by the contractor to assess compliance with the limits outlined in Table 2 in Condition 7 of Schedule 4 of the development consent (refer to Section 2.2).

Where monitoring levels indicate that the noise level at the boundary or at a residence of a privately owned property exceeds the noise impact assessment criteria, then additional monitoring will be undertaken (with the approval of the land owner) across the property to develop a full understanding of the extent of the impact.

Condition 13(b) of schedule 4 of the development consent, relating to notification requires that the results of this assessment be provided to the EPA and Secretary of DP&E within a month of commissioning the assessment.

5.3 Reporting non-compliances

In the event of a potential exceedance of the relevant noise emission criteria, an investigation will be undertaken. Consideration will be given to the margin of exceedance and the source of emission, if it has been identified. The noise, weather and plant operating data shall be documented so that the matter can be investigated and appropriate actions undertaken accordingly.

Additional noise measurement such as near field attended monitoring may be utilised to investigate noise emissions in relation to noise complaints, or to determine compliance with the consent conditions where potential non-compliances have been measured or are difficult to quantify from operator-attended noise measurements at the nominated residences.

The results of noise monitoring and any non-compliance will be reported to the EPA and Secretary of DP&E as soon as possible, and within 7 days as per condition 13(b) of schedule 4 of the development consent.

In the event of a potential exceedance of the relevant noise emission criteria, the results must be provided to any affected landholders and tenants and the full details published on the Boral website within 7 days after obtaining the monitoring results, as per condition 1 of schedule 4A of the development consent

5.4 Non-compliance response strategy

Response measures, which would be adopted following noise complaints or noise exceedances, would include:

- identifying the noise source that has caused the complaint/exceedance. This would be done in consultation with the complainant and by conducting a noise survey to quantify the level of disturbance;
- reassessing the mitigation techniques employed at the quarry to reduce the impact of the noise source in question; and
- if a management strategy is unsuccessful, re-evaluate the Best Available Technology Economically Achievable (BATEA) mitigation strategies being used.

Following the adoption of noise mitigation, a further noise survey would be conducted to assess the effectiveness of the mitigation strategy.

5.5 Recording noise complaints

As per condition M5 of the site's EPL, Boral will keep a record of any noise complaint made to any employee or any agent of the quarry in relation to noise from quarry operations via Boral's national incident management system or 'SIMS'. Boral uses SIMS to track corrective actions, report and document, investigate, communicate, correct, and prevent future occurrences.

SIMS records will include details of the following:

- date and time of complaint;
- method by which complaint was made;
- personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- nature of the complaint;
- action taken by the quarry and any follow up contact; and
- if no action was taken, the reason why no action was taken.

In accordance with EPL condition M1.2, all noise monitoring records will be maintained for at least four years.

5.6 Best practice management

Management practices will be reviewed annually to ensure that current practices align with contemporary best practice standards. These actions will be documented and their implementation monitored. Boral will maintain awareness of new technologies for noise mitigation through participation in relevant industry groups. Boral will implement noise mitigation measures in line with industry best practice mine noise management where reasonable and feasible to do so.

5.6.1 Design controls

Dunmore quarry is committed to implementing and maintaining the following design controls to manage noise generation:

- the primary, secondary and tertiary crushing plant are located to maximise natural topographic shielding and reduce noise impacts on surrounding areas to the north and west;
- the primary, secondary and tertiary crushing plant and associated conveyors are enclosed and/or cladded;
- the noise/visual bund outlined in Modification 8 has been constructed and will provide significant attenuation to all Mod 9 processes including the stripping process; and
- noise impacts have been considered during the mine planning process.

It is also of note that as part of EPL and Consent conditions, Dunmore Quarry had a real-time directional noise monitoring system (BarnOwl) installed at residence K in May 2005. The real-time data that the system provided was used to monitor noise from site operations and inform Boral and the relevant stakeholders of the performance of the quarry. The real-time monitoring system was removed from the consent in Modification 7 after the regulators and resident were satisfied with the site's performance.

5.6.2 Community consultation committee

The Dunmore Quarry Community Consultative Committee (CCC) serves as a valuable dialogue between Boral and the local community with input and feedback being provided by the community regarding quarry operations and plans. Members are informed of the environmental performance of the site, provided with an update on operations and given a chance to tour the site and ask questions they may have regarding the operation. CCC members have also been diligent in disseminating the information from the meetings to other interested community members in the local area.

A Boral representative will continue to provide regular updates to the community on the noise management performance of the Dunmore quarry at CCC meetings. These updates will typically include a summary of:

- any noise monitoring results for the period since the last CCC meeting
- any specific noise mitigation or other management actions undertaken since the last CCC meeting
- any proposed noise management activities that will be undertaken in the forthcoming period.

Further, Boral has committed to the community consultative committee to inform the community to the west (via a letter box drop) when the quarrying activities are due to commence.

Minutes of all CCC meetings are made publically available on the Boral website

5.6.3 Meteorological forecasting

Meteorological forecasts are considered and discussed at the daily production meetings and/or prior to pre-start meetings. Supervisors consider this information when planning activities for that shift. For example, when a strong temperature inversion is predicted, the Supervisor would consider this in equipment placement, particularly during the evening and early morning periods.

The mine planners also take into consideration localised meteorological patterns as part of mine design (e.g. designing alternative dumping locations for use under adverse meteorological conditions and at night).

5.6.4 Change management

Dunmore quarry will implement a change management process in order to assess the potential noise impacts associated with operational changes. The change management process will be implemented as a minimum, in the following instances:

- significant changes to the number of equipment or type of equipment utilised on site, which may result in an increase to operational noise levels;
- when a proposed mine plan or hours of operation is substantially different to that which has been assessed in the relevant environmental assessment; or
- prior to purchase or rental of equipment, which through either size or volume of equipment has the potential to increase operational noise levels. Noise modelling may be required to confirm that the use of the equipment will not result in additional noise impacts on residential receivers.

The change management process is to consider the existing noise performance at the site and potential noise increases associated with the change. The review is to include, where considered necessary (i.e. significant change), modelling of the predicted noise emissions of the operation to confirm that compliance with the relevant statutory approval will be maintained following the proposed change.

5.6.5 Training

To ensure the effective implementation of this NMP, all Dunmore quarry personnel and contractors will undertake noise management training as part of the site induction. Toolbox talks are conducted to reinforce the importance of noise management and mitigation on an as needs basis.

5.6.6 Adaptive management

In accordance with Schedule 4, Condition 7 of DA 470-11-2003, Dunmore quarry must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures outlined in Section 2.2. In the event of an exceedance, Dunmore quarry will, at the earliest opportunity and to the satisfaction of the Secretary:

- take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- consider all reasonable and feasible options for remediation (where relevant) and submit a report to the relevant Department describing those options and any preferred remediation measures or other course of action; and

- implement remediation measures as directed by the Secretary.

In the event of an exceedance of the impact assessment criteria provided in Section 2.2, Dunmore quarry will investigate and report the exceedance in accordance with Section 5.3.

5.6.7 Additional noise mitigation measures

Dunmore quarry will notify all privately owned residences entitled under Schedule 4, Condition 6A of DA 470-11-2003 of their entitlement to receive additional noise mitigation measures. Dunmore quarry will implement, where additional noise mitigation is required, additional noise mitigation measures (eg double glazing, insulation, air conditioning, etc.) at any residence on the relevant land in consultation with the landowner.

If within 3 months of receiving this request from the landowner, Dunmore quarry 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 Secretary for resolution.

Dunmore quarry will contribute to reasonable maintenance and recurring operating costs associated with additional noise mitigation measures already installed on residences previously identified as having noise mitigation rights. Contributions will be consistent with existing agreements between Dunmore quarry and the relevant landowner.

Tenanted properties owned by Dunmore quarry are notified of potential noise impacts prior to entering into tenancy agreements and are advised of their rights within the terms of the agreement.

6 Review and improvement

Condition 4 of schedule 5 of the development consent describes the requirement for review and improvement, as follows:

4. Within 3 months of the submission of an:
 - (a) incident report under condition 7 below;
 - (b) Annual Review under condition 9 below;
 - (c) audit report under condition 10 below; and
 - (d) any modifications to this consent,

The Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent, to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.

The NMP is to be reviewed at least every three years, when updates to the plan are required, or as directed by the Secretary of DP&E in consultation with other agencies. The review process is to reflect changes in environmental legislation and guidelines, and changes in technology or operational procedures.

Review of the NMP will also take place if monitoring records indicate that it is warranted or in the event of any significant change to noise quality management procedures at the quarry.

Any modifications to the NMP will be undertaken in consultation with the appropriate government agencies.

References

NSW Environment Protection Authority, "*Industrial Noise Policy*" (2001).

Standards Australia

- AS 1055-1997 *Acoustics - Description and Measurement of Environmental Noise*
- AS IEC 61672.1-2004 *Electroacoustics - Sound level meters – Specifications*

Appendix A

Development Consent Noise Conditions

ADDITIONAL MITIGATION UPON REQUEST

- 6A. Upon receiving a written request from the landowner of any residence on the land listed in Table 1 or Table 1A, 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 *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development* (NSW Government, 2014), as may be updated or replaced from time to time. They must also be reasonable and feasible and proportionate to the level of predicted impact.

If within 3 months of receiving this request from the landowner, the Applicant and the owner 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 Secretary for resolution.

Receiver Locations	Mitigation Basis
Locations AA, D, F, G and Z	Noise

Table 1A: Land Subject to Mitigation on Request

NOISE

Noise Limits

7. ¹The Applicant **must** ensure that the noise generated by the development does not exceed the criteria specified in Table 2.

Receiver Locations	Noise Limits dB(A)					
	L _{Aeq} (15minute)				L _{A1} (1minute)	
	Day	Evening	Night	Shoulder	Night	Shoulder
Location K Stocker Residence	49	44	38	47	48	55
Location O Dunmore Lakes	49	44	38	47	48	55
Location J Creagan Residence	Negotiated Agreement in Place					
Location AA	38	38	38	38	45	45
Locations AB and T	36	36	36	36		
Locations D, F, G and Z	40	40	40	40		
Location S	37	37	37	37		
Other privately-owned residences	35	35	35	35		

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

- Receiver locations are shown in Appendix 2.
- The above table may be varied if the Applicant enters into a negotiated agreement with any of the affected residents, or if existing agreements become void.
- Noise from the development is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary, to determine compliance with the L_{Aeq(15 minute)} noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors presented in Section 4 of the NSW Industrial Noise Policy **must** also be applied to the measured noise levels where applicable.
- Noise from the development is to be measured at 1m from the dwelling façade to determine compliance with the L_{A1(1minute)} noise limits in above table.
- The noise emission limits identified in Table 1 apply under meteorological conditions of:
 - Wind speed up to 3m/s at 10 metres above ground level; or

¹ Incorporates EPA GTA

- Temperature inversion conditions of up to 3°C/100m and wind speed up to 2m/s at 10 metres above the ground.

Noise Investigations

8. Deleted

Operating Hours

9. The Applicant **must** comply with the operating hours in Table 3:

Activity	Days of the Week	Time
Extraction and Processing	Monday – Saturday	6-00am to 10-00pm
Product Transfer to Stockpiles	Monday - Saturday	6-00am – Midnight
Distribution	Monday – Saturday	24 hrs
	Sunday	See Condition 10, Schedule 4
Maintenance	Monday – Sunday	24 hrs
Construction (including construction of the bund under Modification 8)	Monday – Saturday	7-00am to 6-00pm Monday to Friday 8-00am to 1-00pm Saturday

Table 3: Operating Hours for the Development

10. ²The Applicant may only distribute quarry products off-site by road on up to 15 Sundays a year, between 8am and 6pm, unless the EPA approves otherwise. This restriction does not apply to distribution by rail, which is allowed 24 hours a day, 7 days a week.

Oversized Material

11. ³The Applicant **must** not process any oversized raw feed material at the development during the shoulder period.

Note: For the purpose of this condition “oversized raw feed material” is defined as where more than 50% of the shot is over 900mm in diameter.

Noise Monitoring

12. Deleted

13. ⁴Within 3 months of the date of this consent, and annually thereafter, unless directed otherwise by the Secretary, the Applicant **must**:

- commission a suitably qualified person to assess whether the development is complying with the noise impact assessment criteria in Table 2, in general accordance with the NSW Industrial Noise Policy and Australian Standard (AS) 1055-1997: “Description and Measurement of Environmental Noise”; and
- provide the results of this assessment to the EPA and Secretary within a month of commissioning the assessment.

Noise Management Plan

14. The Applicant **must** prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan **must**:

- be prepared in consultation with the EPA;
- be submitted to the Secretary for approval prior to commencing quarrying operations in the Croome West Pit, unless the Secretary agrees otherwise;
- describe the measures to be implemented to ensure:
 - compliance with the noise criteria and operating conditions of this consent;
 - best practice management is being employed;
 - noise impacts of the development are minimised during stage 3 extraction of the Croome West Pit, particularly during the shoulder period; and
 - noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply;
- describe the proposed noise management system; and

² Incorporates EPA GTA

³ Incorporates EPA GTA

⁴ Incorporates EPA GTA

- (e) include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 2.

The Applicant must implement the Noise Management Plan as approved by the Secretary.

Reporting

- 15. Deleted

BLASTING AND VIBRATION

Airblast Overpressure Criteria

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

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

Table 4: Airblast Overpressure Limits

Ground Vibration Criteria

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

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

Table 5: Ground Vibration Limits

Blasting Restrictions

- 18. ⁵Blasting operations at the site may only take place:
 - a) between 9am and 5pm Monday to Saturday inclusive;
 - b) are limited to 2 blasts each day; and
 - c) at such other times as may be approved by EPA.

Public Notice

- 19. During the life of the development, the Applicant must operate a blasting hotline, or alternative system agreed to by the Secretary, to enable the public to get up-to-date information on blasting operations at the development.

Blast Management Plan

- 20. The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:
 - a) be submitted to the Secretary for approval within 6 months of Modification 8, or as otherwise agreed by the Secretary;
 - b) describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this consent;
 - c) include measures to manage and monitor the avoidance of impacts on the heritage values on the buildings on Lot 10 DP977931;
 - d) include measures to manage flyrock;

⁵ Incorporates EPA GTA

SCHEDULE 4A ADDITIONAL PROCEDURES

NOTIFICATION OF EXCEEDANCES

1. As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any criteria in Schedule 4 the Applicant must:
 - (a) provide to any affected landowners and tenants; and,
 - (b) publish on its website the full details of the exceedance.Any exceedance of any criteria in Schedule 4 is an incident that must be notified to the Department in accordance with condition 7 of Schedule 5 of this consent.

For any exceedance of the air quality criteria or air quality measures in Schedule 4, the Applicant must also provide to any affected landowners and tenants a copy of the fact sheet entitled *Mine Dust and You* (NSW Minerals Council, 2011) fact sheet (as may be updated from time to time).

INDEPENDENT REVIEW

2. If a landowner considers the development to be exceeding the relevant criteria in Schedule 4, they may ask the Secretary in writing for an independent review of the impacts of the development on their land.

If the Secretary is satisfied that an independent review is warranted, within 2 months of the Secretary's decision, the Applicant must:

 - (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
 - consult with the landowner to determine their concerns;
 - conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and
 - if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria; and
 - (b) give the Secretary and landowner a copy of the independent review; and
 - (c) comply with any written requests made by the Secretary to implement any findings of the review.

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
 - (a) be submitted to the Secretary for approval within 6 months of the Secretary requiring preparation of the strategy by notice to the Applicant;
 - (b) provide the strategic framework for the environmental management of the development;
 - (c) identify the statutory approvals that apply to the development;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the development;
 - respond to any non-compliance; and
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this consent; and
 - a clear plan depicting all the monitoring required to be carried out under the conditions of this consent.

The Applicant must implement any Environmental Management Strategy as approved from time to time by the Secretary.

Evidence of Consultation

- 1A. Where consultation with any State or local agency is required by the conditions of this consent, the Applicant must:
 - (a) consult with the relevant agency prior to submitting the required document to the Secretary for approval;
 - (b) submit evidence of this consultation as part of the relevant document;
 - (c) describe how matters raised by the agency have been addressed and any matters not resolved; and
 - (d) include details of any outstanding issues raised by the agency and an explanation of disagreement between any agency and the Applicant.

Management Plan Requirements

2. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - 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;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the development; and
 - effectiveness of any management measures (see (c) above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
 - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
 - (g) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and

- exceedances of the impact assessment criteria and/or performance criteria;
- (h) a protocol for periodic review of the plan; and
- (i) a document control table that includes version numbers, dates when the management plan was prepared and reviewed, names and positions of people who prepared and reviewed the management plan, a description of any revisions made and the date of the Secretary's approval.

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Application of Existing Strategies, Plans or Programs

- 3A. The Applicant must continue to apply existing approved strategies, management plans, or monitoring programs that have most recently been approved under this consent, until the approval of a similar strategy, plan or program under this consent.

Updating & Staging Submission of Strategies, Plans or Programs

3. To ensure the strategies, plans or programs under this consent are updated on a regular basis, and that they incorporate any appropriate mitigation measures to improve the environmental performance of the development, the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.

With the agreement of the Secretary, the Applicant may revise any strategy, plan or program approved under this consent without consulting with all the parties nominated under the applicable conditions of consent.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Applicant will need to ensure that the existing operations associated with the development are covered by suitable strategies, plans or programs at all times.*
- *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/s of the development to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program.*

Revision of Strategies, Plans & Programs

4. Within 3 months of the submission of an:
- (a) incident report under condition 7 below;
 - (b) Annual Review under condition 9 below;
 - (c) audit report under condition 10 below; and
 - (d) any modifications to this consent,
- the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent, to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.

Adaptive Management

5. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 4. 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.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:

- (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;
- (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
- (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

COMMUNITY CONSULTATIVE COMMITTEE

6. The Applicant must operate a Community Consultative Committee (CCC) for the development, to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Department's

Community Consultative Committee Guidelines: State Significant Projects (2016) (as may be updated or replaced from time to time).

Notes:

- The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.
- In accordance with the guideline, the committee should be comprised of an independent chair and appropriate representation from the Applicant, Council, and the local community.
- The requirement for this CCC may be fulfilled by a regional CCC for any two or more of Boral's quarrying operations in the South Coast area.

REPORTING

Incident Reporting

7. The Applicant must immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

8. The Applicant must provide regular reporting 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.

Annual Review

9. By the end of September each year, or other timing as may be agreed by the Secretary, the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:
 - (a) describe the development (including rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, which includes a comparison of these results against the:
 - relevant statutory requirements, limits or performance measures/criteria;
 - requirements of any plan or program required under this consent;
 - monitoring results of previous years; and
 - relevant predictions in the documents listed in condition 2 of Schedule 3;
 - (c) identify any non-compliance over the last financial 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 what measures will be implemented over the current financial year to improve the environmental performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 6 of Schedule 5) and any interested person upon request.

INDEPENDENT ENVIRONMENTAL AUDIT

10. Prior to 1 April 2017, and every three years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
 - (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
 - (b) include consultation with the relevant agencies and the CCC;
 - (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 Licences (including any assessment, plan or program required under these approvals);
 - (d) review the adequacy of any approved strategies, plans or programs required under the abovementioned approvals;
 - (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under the abovementioned approvals; and
 - (f) be conducted and reported to the satisfaction of the Secretary.

Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.

11. Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

12. By 31 December 2016, unless otherwise agreed by the Secretary, the Applicant must:
 - (a) make the following information publicly available on its website:
 - the documents listed in condition 2 of Schedule 3;
 - current statutory approvals for the development;
 - approved strategies, plans or programs required under the conditions of this consent;
 - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - a complaints register, updated quarterly;
 - the Annual Reviews (over the last 5 years);
 - any independent environmental audit, and the Applicant's response to the recommendations in any audit;
 - any other matter required by the Secretary; and
 - (b) keep this information up-to-date, to the satisfaction of the Secretary.

Appendix B

Noise monitoring field sheet pro forma

Environmental noise monitoring field sheet

Job Number:		Client:		Name:		
Monitoring location details:						
Date:		Time (24 hour):		File Name:		
Noted sources and contribution level from source(s) of interest:						
Level dB(A)	Time	Duration	Event/Comments			
Measured noise levels and duration of monitoring						
L _{Aeq}	L _{Ceq}	L _{Amax}	L _{A90}	C-A	Site contribution	
					L _{Aeq}	Adj L _{Aeq}
						L _{Amax}
Wind speed (m/s)			Wind direction (°)		Cloud cover (¼)	



SYDNEY

Ground floor, Suite 01, 20 Chandos Street
St Leonards, New South Wales, 2065
T 02 9493 9500 F 02 9493 9599

NEWCASTLE

Level 1, Suite 6, 146 Hunter Street
Newcastle, New South Wales, 2300
T 02 4907 4800 F 02 4907 4899

BRISBANE

Level 4, Suite 01, 87 Wickham Terrace
Spring Hill, Queensland, 4000
T 07 3839 1800 F 07 3839 1866

