Holcim

Strength. Performance. Passion

Cooma Road Quarry
Noise Management Plan
September 2019

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TABLES

FIGURES

Table 1 Document Control

Version No.	Review Date	Reviewed By	Reviewer Position	Changes Made	Approved
1	27/03/2014	Holcim Australia	N/A	Development of Plan	Holcim Australia
2	30/07/2019	Shilpa Shashi	Planning and Environment Coordinator NSW / ACT	General update in accordance with Development Consent	Submitted to DPIE
3	24/09/2019	Shilpa Shashi	Planning and Environment Coordinator NSW / ACT	Update with Department comments.	Submitted to DPIE

1.0 Introduction

1.1 Background

Holcim (Australia) Pty Ltd (Holcim Australia) operates Cooma Road Quarry, an existing hard rock quarry located approximately 6 kilometres south of Queanbeyan New South Wales (NSW) (refer to **Figure 1-1**). Cooma Road Quarry has been operating at the site since 1959. The previous development consent for Cooma Road Quarry was granted on 26 October 1995 and expired in October 2015. To enable continued quarrying operations, Holcim Australia sought a Development Consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for an extension of the approved quarry life until 31 October 2035. The Cooma Road Quarry Development Consent (SSD_5109) (Development Consent) was granted on 27 September 2013 by the NSW Minister for Planning and Infrastructure. Modification 1 was approved by the Department of Planning, Industry and Environment (DPIE) in August 2016 and included the addition of the importation of Virgin Excavated Natural Material (VENM) to be utilised for backfilling and progressive rehabilitation of the terminal quarry faces. Modification 2 was approved in April 2019 and included the addition of the importation of Excavated Natural Material (ENM).

The Development Consent allows for continued operations of the existing Cooma Road Quarry which will enable the extraction of additional hard rock resources within the approved extraction area (refer to **Figure 1-2**).

Holcim Australia is committed to implementing continued quarrying operations in the context of updated and contemporary environmental management requirements. This Noise Management Plan (NMP) has been prepared in accordance with Condition 7 of Schedule 3 of the Development Consent.

1.2 Project Description

The Development Consent (SSD_5109) provides for the following:

- extraction of the remaining resources within the existing approved quarry pit area;
- extension of the approved extraction boundary to the north covering an area of approximately 3.5 hectares;
- increasing the maximum annual production limit from 1 Mtpa to 1.5 Mtpa;
- allowance to receive quarry materials from other sites for crushing and screening (as required) and then sale. Total product (including from both material quarried from the site and from materials imported to the site) will be maintained within the total production limit of 1.5 Mtpa;
- allowance to receive VENM and ENM products to be used for back filling and progressive rehabilitation of terminal quarry faces in accordance with the development consent and quarry rehabilitation objectives;
- relocation of the existing workshop, truck parking and temporary stockpiles;
- addition of a mobile pug mill; and
- recycling of clean concrete on site for re-use as product.

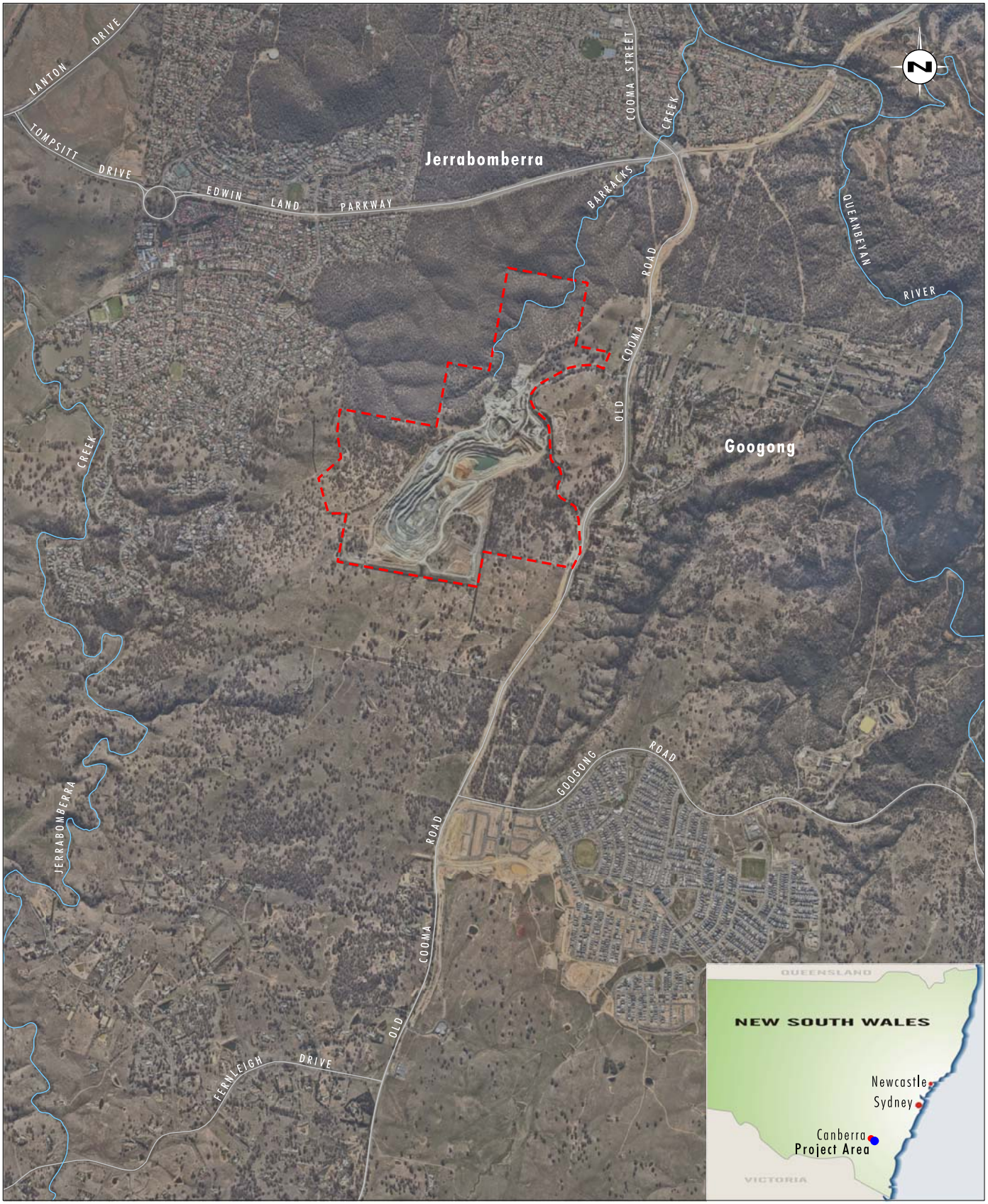

Image Source: Nearmap (May 2019)
Data Source: Holcim (2019)

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1:35 000

Legend

Approved Project Area

FIGURE 1.1

Locality Map

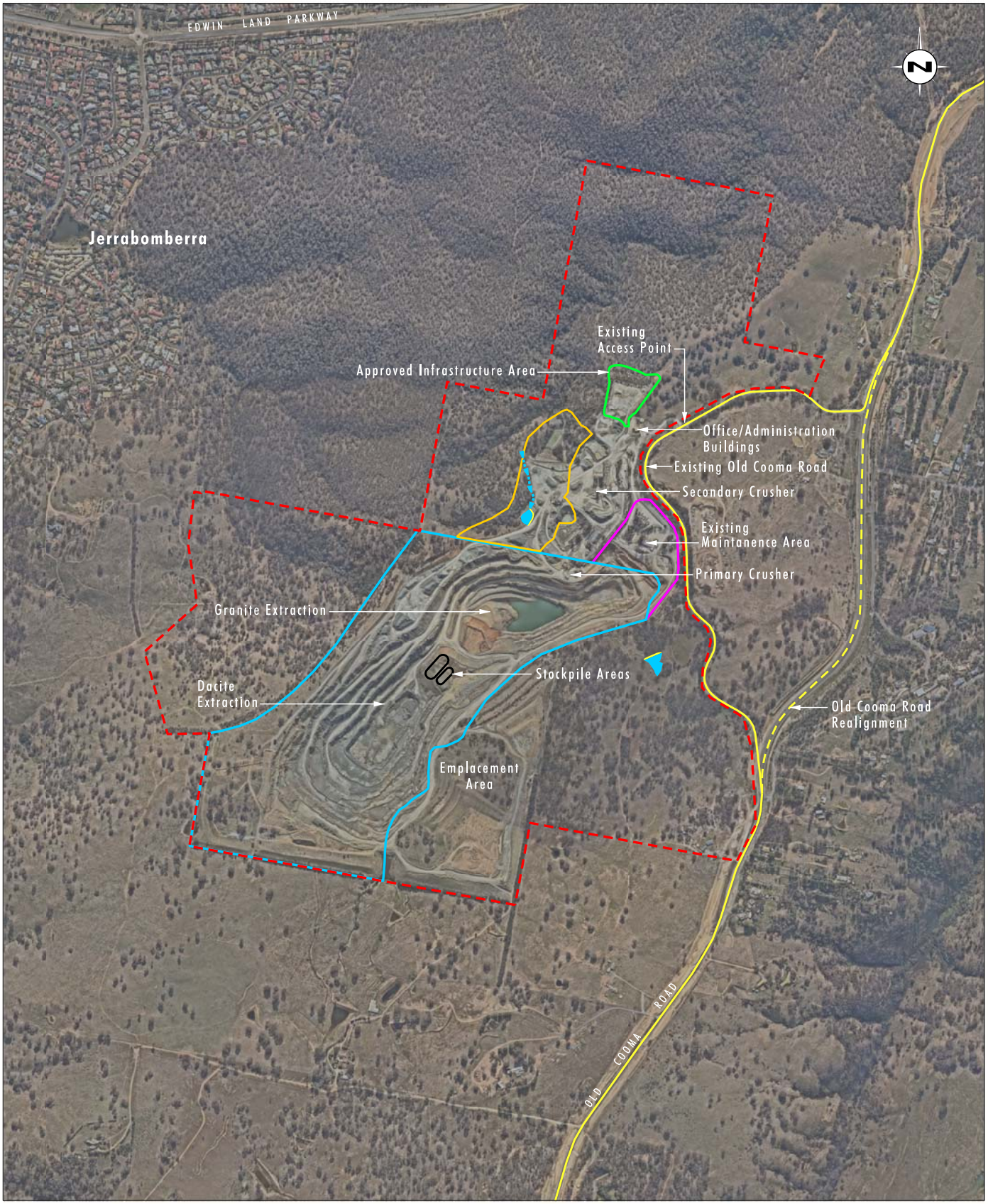

Image Source: Nearmap (May 2019)
Data Source: Holcim (2019)

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1:15 000

Legend

- Approved Project Area
- Approved Extraction Area
- Approved Additional Extraction Area
- Approved Disturbance Area - Workshop
- Approved Disturbance Area - Overburden Emplacement
- Approved Dam
- Clean Drain
- Old Cooma Road
- Old Cooma Road Realignment

FIGURE 1.2

Cooma Road Quarry
Continued Operations Project

File Name (A4): R03/4649_002.dgn
20190708 15.27

1.3 Purpose and Scope

The purpose of this NMP is to describe the noise management strategies, procedures, controls and monitoring programs that are to be implemented in accordance with the Cooma Road Continued Operations Project Environmental Impact Statement (EIS, Umwelt 2012) Modification 1 to Development Consent (EMM 2016), Modification 2 to Development Consent (EMM 2019) and the Development Consent. The area covered by this plan is shown on **Figure 1-2**. The approved quarry development has been designed to include several noise mitigation factors that have been implemented and these design mitigation measures are further described in **Section 5.2**.

The Development Consent conditions and Statement of Commitments relevant to this plan are provided in **Sections 2.1** and **2.2** respectively, including a checklist of where each condition has been addressed within this document. This plan also outlines the control measures to be implemented as part of the continued operations at Cooma Road Quarry to minimise the potential impacts on noise amenity on the local community.

1.4 Objectives

The objectives of this NMP include the following:

- establishing a noise monitoring system to assess the noise impact on surrounding sensitive receivers and performance against the Development Consent noise criteria;
- providing a mechanism to assess monitoring results against Development Consent noise criteria to evaluate compliance;
- detailing the requirement for reporting noise criteria exceedances to the relevant stakeholders;
- detailing the controls to be implemented to minimise noise emissions from the site;
- allowing adaptive management of the quarrying operation based on predicted meteorological conditions;
- addressing the relevant conditions of the Development Consent;
- managing noise related community complaints in a timely and effective manner; and
- detailing the independent review process to be followed if Cooma Road Quarry receives a written request by a landowner(s) for an independent review of noise impacts.

2.0 Regulatory Requirements

2.1 Development Consent

The Development Consent was assessed under the EP&A Act (1979). Approval for the project was granted by the NSW Planning and Infrastructure (P&I) Director-General on 27 September 2013. The requirement for this NMP arises from Condition 7 of Schedule 3 of the Development Consent. The requirements of the Development Consent relating to noise, and where these requirements are addressed within this document, are provided in **Table 2**.

Table 2 Development Consent Conditions

Development Consent Condition	Section Addressed
Schedule 3 Environmental Performance Conditions	
Operational Conditions 4. The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 1 (of consent) at any residence on privately-owned land. Appendix 9 of the consent sets out the metrological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria. However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner/s to generate higher noise levels, and the Applicant has advised DPIE in writing of the terms of this agreement.	**Section 4.0** **Section 5.3.2**
6. the applicant must: implement best management practice to minimise the construction, operational and traffic noise of the development.	**See below**
a) implement best management practice to minimise the construction, operational and traffic noise of the development.	**Section 5.0**, **Section 5.5**
b) the applicant shall minimise the noise impacts of the development during meteorological conditions when the noise limits in this consent do not apply.	**Section 5.3.2**
c) maintain the effectiveness of any noise attenuation on equipment to ensure consistency with the benchmark sound power levels presented in the EIS.	**Section 5.3.3**
d) regularly assess the results of noise monitoring to ensure compliance with the relevant conditions of this consent.	**Section 6.1.1**
Noise Management Plan 7. The applicant must prepare and implement a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:	**This document**
a) be prepared in consultation with Council and the EPA, and be submitted to the Secretary for approval within 6 months of this consent.	**Section 2.3**
b) describe the measures that would be implemented to comply with the: • noise criteria in Table 1 • hours of operation in Table 2; and • operating conditions in Condition 7 above.	**Sections 4.0, 5.1** and **5.0**
c) include a monitoring program that: • incorporates quarterly (or otherwise agreed by the Secretary) attended noise monitoring to evaluate the performance of the development against the noise criteria in Table 1; • includes a protocol for determining exceedances of the noise criteria in Table 1; and • assesses the sound power levels of the equipment on-site, compares it with the benchmark levels used in the EIS, and evaluates the effectiveness of any attenuation.	**Section 6.0**

Development Consent Condition	Section Addressed
Independent Road Noise Audit 8. Within 6 months from the date of this consent, the Applicant must commission a suitably qualified person, to conduct an Independent Road Noise Audit of the Edwin Land Parkway. This audit must: (a) be undertaken in consultation with Council and the EPA; (b) assess the noise generated by heavy vehicles generated by the development on the Edwin Land Parkway against the relevant criteria under the NSW Road Noise Policy; and (c) consider whether additional mitigation measures are required to address any potential exceedances under the criteria specified in the NSW Road Noise Policy, to the satisfaction of the Secretary. Within 2 months of receiving the audit report, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the report to the Secretary, with a detailed response to any of the recommendations contained in the audit report, including a timetable for the implementation of any reasonable and feasible measures proposed to address the recommendations in the audit report. The Applicant must then implement the measures identified by the Secretary, to the satisfaction of the Secretary.	**Section 5.4**

Management controls for potential noise impacts associated with quarrying and ancillary activities are provided in **Section 5.0**. Noise monitoring to be undertaken is outlined in **Section 6.0**.

Additional general requirements of all Environmental Management Plans are included in Condition 2 of Schedule 5 of the Development Consent and are provided in **Appendix 1**. Noise compliance assessment criteria are also provided in Appendix 9 of the Development Consent and are reproduced in **Section 6.1**.

2.2 Statement of Commitments

The Statement of Commitments relevant to the NMP, and where they are addressed in this document, is detailed in **Table 3**.

Table 3 Statement of Commitments

Commitment	Section Addressed
16. Holcim Australia is committed to managing the noise impact of the project and will implement the following controls: • the attenuation of the primary crushing plant from a sound power level of 120 dB(A) to approximately 112 dB(A); • the management of loaders and road haulage trucks to minimise the number of machines running in exposed locations at any one point in time; • the management of the layout of the stockpiles and work areas to minimise the number of machines running in exposed locations; • the management of stockpiles to act as barriers between working machines and potential receiver areas (applicable to potential exposed areas higher within the quarry and product area); • not running the secondary crushing plant during the evenings (between 6pm and 10pm) if potentially adverse weather conditions aid in the propagation of noise to the receiver areas; and • the construction of an earth-berm situated along the eastern extent of the proposed infrastructure area.	**Section 5.0**

2.3 Stakeholder Consultation Regarding this Document

Copies of this NMP were provided to Queanbeyan City Council and the EPA for comment on 14 March 2014. EPA provided a letter stating that the NMP appeared adequate and that the EPA had no specific comments to make regarding the NMP. Queanbeyan City Council provided comment on

25 March 2014 indicating that the NMP was considered to have been developed in accordance with the requirements of the Development Consent, refer to **Appendix 2**. DPIE advised on 7 August 2019 that the update of this management plan could occur without the need to consult with nominated agencies in the Development Consent.

3.0 Baseline Data

3.1 Existing Noise Environment

The background noise levels of the Cooma Road Quarry area and surrounds were established using continuous noise loggers over a period of one week in January 2012, as part of noise assessment works undertaken for the Cooma Road Continued Operations Project EIS (Umwelt 2012). In order to establish background noise levels, loggers were placed at three locations in Googong and Jerrabomberra considered representative of the residential receivers surrounding the Project Area.

The results of the monitoring program undertaken for the EIS noise impact assessment are summarised in **Table 4**. The Rating Background Level (RBL) was determined for each receiver location in accordance with the INP (EPA 2000). The assessment of the evening and night-time (6.00 am to 7.00 am) RBL also took into consideration the recommendations of the OEH (now EPA) *Application Note for the Assessment of Intrusiveness Criteria* (DECC July 2006).

Table 4 Monitoring Results, RBL and Mean $L_{Aeq, period}$, dB(A)

Monitoring Location	Time Period[1]	RBL	Mean LAeq, period
N1 – 409 Old Cooma Road, Lot 1, DP 218719, Googong	Day	39.0	57.2
	Evening	33.6	53.4
	Night	30.0	51.5
	Night part-operation 6.00–7.00 am	37.9	57.5
N2 – 732c Old Cooma Road, Lot 4, DP 582954 Googong	Day	32.2	47.5
	Evening	30.0	56.3
	Night	30.0	44.5
	Night part-operation 6.00–7.00 am	34.7	48.9
N3 – 15 Copperfield Place, Lot 2, DP 808393 Jerrabomberra	Day	30.0	44.8
	Evening	30.0	50.4
	Night	30.0	36.7
	Night part-operation 6.00–7.00 am	30.0	54.7

Note 1: Monday to Saturday Day is 7.00 am to 6.00 pm, Evening 6.00 pm to 10.00 pm and Night 10.00 pm to 7.00 am; on Sundays and Public Holidays Day is 8.00 am to 6.00 pm, Evening 6.00 pm to 10.00 pm and Night 10.00 pm to 8.00 am.

The noise levels presented in **Table 4** represent the underlying level of noise present at the monitoring locations. Based on a review of the audio data collected during the monitoring program, it is considered that the noise contribution from the existing site operations had minimal acoustic influence on the measured noise levels and did not need to be removed from the assessment of the existing ambient noise environment. During the monitoring program, data affected by rain or wind speeds in excess of 5 m/s was excluded in accordance with the Section 3.4 of the INP (EPA 2000). Meteorological data was obtained from the Bureau of Meteorology (BoM) Canberra Airport automatic weather station (AWS) located approximately 10 kilometres to the north-north-west of Cooma Road Quarry.

Ambient noise levels surrounding the Cooma Road Quarry are influenced by traffic noise from Old Cooma Road, aircraft flyover noise associated with Canberra Airport, bird noise and domestic noise sources. Location N1 (Googong) has the highest background noise level due to the influence of noise from Old

Cooma Road. Location N3 (Jerrabomberra) to the west of the quarry had the lowest background noise level.

4.0 Noise Criteria

Noise criteria are set for day shoulder, day and evening periods to protect the amenity of neighbouring residents. Noise criteria are expressed as a LAeq (15 min) limit (refer to **Section 9.0** for definitions) and are specified in the Development Consent. Project specific noise criteria for Cooma Road Quarry are outlined in Table 1 of the Development Consent and are reproduced as **Table 5**.

Table 5 Development Consent Noise Criteria dB (A)LAeq, period, dB(A)

Receiver Area	Day (shoulder) 6.00 am – 7.00 am	Day 7.00 am – 6.00 pm	Evening 6.00 pm – 10.00 pm
	$L_{Aeq\ (15\ min)}$	$L_{Aeq\ (15\ min)}$	$L_{Aeq\ (15\ min)}$
N1, N7, N8, N56, N57, N59, N63, N64, N65	40	44	39
N67	36	41	35
All other receivers between N9 and N71 inclusive	36	38	35
All other receivers	35	35	35

Note: Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy. It is noted that the noise criteria do not apply if Holcim Australia has an agreement with the relevant landowner to generate higher noise levels, and Holcim Australia has notified DPIE in writing of the terms of this agreement.

5.0 Noise Management Controls

Holcim Australia is committed to implementing reasonable and feasible best practice noise mitigation measures and investigating ways to minimise the operational and road traffic noise generated by Cooma Road Quarry. Further information regarding mitigation measures which will assist in the minimisation of noise as a result of traffic to and from the site (in particular haulage traffic) are provided in the Cooma Road Quarry Transport Management Plan and the Drivers Code of Conduct. These documents outline limitations on numbers of movements from the site and behavioural standards for truck drivers.

In order to mitigate any potential noise impacts from the operation, a number of noise management controls will be implemented throughout the life of the operation. These controls are outlined in:

- the Cooma Road Quarry EIS (Umwelt 2012);
- the Development Consent noise management conditions (Conditions 4 to 8 of Schedule 3);
- general management plan requirements listed in Conditions 2-5 of Schedule 5 of the Development Consent;
- the Development Consent Statement of Commitments (Condition 16 of Appendix 8 of the Development Consent); and
- the Development Consent Appendix 9 (Noise Compliance Assessment).

The relevant noise controls for the operation are detailed in the sections below.

5.1 Hours of Operation

Impacts to noise amenity for sensitive receivers in the vicinity of Cooma Road Quarry have been managed through the design of the operation, including the restrictions on the hours of operation for the facility. The hours of operation for Cooma Road Quarry are prescribed in Schedule 3 Condition 5 of the Development

Consent and are reproduced in **Table 6** below. Cooma Road Quarry will operate in accordance with the hours of operation defined in **Table 6**.

Table 6 Hours of Operation

Activity	Operating Hours		
	Monday - Friday	**Saturday**	**Sundays and Public Holidays**
Primary Crushing, Laden Truck Movements	6.00 am – 6.00 pm	6.00 am – 6.00 pm	None
Construction Operations	7.00 am – 6.00 pm	8.00 am – 1.00 pm	
Unladen Truck Movements	6.00 am – 8.00 pm	6.00 am – 8.00 pm	
Other Operations	6.00 am – 10.00 pm	6.00 am – 10.00 pm	

Note: maintenance activities may occur at any time provided they are inaudible at privately-owned residences

In accordance with the EIS and **Table 6** 'other operations' activities are allowed during the extended hours of 6.00 pm to 10.00 pm. These activities are confined to:

- maintenance of fixed plant and mobile plant;
- secondary crushing and screening (provided meteorological conditions are suitable, refer to **Section 5.3.2**);
- product stockpile management;
- water cart operations for stockpile area and plant area; and
- pumping for dewatering activities.

5.2 Design Controls

A range of measures were investigated to control the noise impacts associated with Cooma Road Quarry, and were outlined in the Noise Impact Assessment for the EIS (Umwelt 2013). The reasonable and feasible control measures that have been incorporated into the operation of the quarry include:

- the attenuation of the primary crushing plant from a sound power level of 120 dB(A) to approximately 112 dB(A);
- not running the primary crushing plant during the evenings when possible;
- the management of loaders and road haulage trucks to minimise the number of machines running in exposed locations at any one point in time (refer to **Section 5.3** for further information);
- the management of the layout of the stockpiles and work areas to minimise the number of machines running in exposed locations;
- the management of stockpiles to act as barriers between working machines and potential receiver areas (applicable to potential exposed areas higher within the quarry and product area);
- not running the secondary crushing plant during the evenings if potentially adverse weather conditions aid in the propagation of noise to the receiver areas (refer to **Section 5.3.2** for further information); and
- the construction of an earth-berm situated along the eastern extent of the proposed infrastructure area.

The potential for transmission of noise has been controlled through design aspects such as the orientation and location of the new site infrastructure area. In addition, a noise barrier has been constructed along the eastern side of the new infrastructure area to further manage noise impacts from this area. While the construction of noise barriers was considered appropriate for the new infrastructure area, it was determined during the development of the environmental noise model for the noise impact assessment that the construction of noise barriers at other locations around the site, including the existing infrastructure area, was not feasible as they would be mostly ineffectual.

The effectiveness of the implementation of these controls will be reported as part of the Cooma Road Quarry Annual Review.

5.3 Operational Controls

5.3.1 General Operational Controls

Section 7 of the *Industrial Noise Policy* (INP, EPA 2000) notes that when the predicted noise impacts exceed the project-specific noise levels, additional measures may be required to reduce noise levels to meet the project-specific noise levels. In addition to the control measures outlined above, a range of measures to mitigate noise impacts during operations were included in the EA. These controls included:

- use of best management practice in controlling noise at the source through the elimination of noisy equipment, relocating equipment or reorienting equipment to reduce the noise impacts;
- implementation of an ongoing regular maintenance program for operational equipment; and
- limiting extractive activities to the day-time period only.

With respect to controlling noise emissions at the source, a sensitivity analysis was conducted on the impact of running the secondary crushing plant during the evening period. The modelling results indicated that only two properties would potentially be affected during adverse weather conditions being properties N60 and N67. Property N60 currently has a lease agreement in place with Holcim Australia and therefore Holcim Australia has management control over the property.

Potential noise impacts to Property N67 will be carefully managed through daily meteorological assessments (refer to **Section 5.3.2**) and through the ongoing quarterly attended noise monitoring process outlined in **Section 6.0**.

5.3.2 Adverse Weather Conditions Meteorological Assessment

As required by Condition 6b) of Schedule 3 of the Development Consent, minimising noise impacts of the operation during meteorological conditions when the noise limits in the Development Consent do not apply is managed through the following adverse weather assessment process:

- Holcim Australia will undertake a meteorological assessment to determine the potential for gradient winds from the northeast during the evening; and
- if gradient north-easterly winds are predicted then the secondary crushing plant will not be operated during the evening period.

5.3.3 Sound Power Level Maintenance and Testing

As required by Condition 6c) of Schedule 3 of the Development Consent, a Sound Power Level (SWL) testing program will be implemented to ensure compliance with the sound power levels for equipment outlined in the EIS. Noise source models were prepared as part of the Noise Impact Assessment for the EIS to represent the type of equipment currently in use and planned to be used in the ongoing operation of the quarry. The SWLs for operational equipment were detailed within the Cooma Road Quarry *EIS* (EIS, Umwelt 2012) and are reproduced as **Appendix 3**. In addition, Holcim Australia will also implement a program of regular maintenance of all equipment onsite, in order to maintain the effectiveness of any noise attenuation installed on quarrying equipment.

In accordance with Condition 7c) of Schedule 3 the Development Consent, three-yearly SWL testing program has been completed and reviewed for compliance against the SWLs provided in **Appendix 3**.

5.4 Independent Road Noise Audit

In accordance with Condition 8 of Schedule 3 of the Development Consent, Holcim Australia engaged Rudds Consulting Engineers Pty Ltd to conduct an Independent Road Noise Audit of the Edwin Land Parkway in 2014 (Rudds, 2014). All relevant criteria were met during the audit and no additional noise mitigation measures were required to be implemented.

6.0 Noise Monitoring

Noise monitoring requirements for the operation are provided in Condition 7c) of Schedule 3 of the Development Consent. In addition to the noise monitoring requirements outlined in this condition, the results of noise monitoring undertaken are required to be assessed against the noise compliance assessment information provided in Appendix 9 of the Development Consent (refer to **Section 6.1.1**). Noise monitoring will be undertaken in accordance with Conditions 3 and 4 of Appendix 9 of the Development Consent, which includes the requirement to review performance in accordance with the *NSW Industrial Noise Policy* (EPA 2000).

6.1 Attended Noise Monitoring Program

Attended noise monitoring will be undertaken at the locations nominated in **Figure 6-1**. In accordance with the requirements of Condition 3 of Appendix 9 of the Development Consent, this monitoring will be undertaken quarterly. Attended monitoring will be undertaken within 30 metres of a private residence, where possible. The results are then compared with the noise criteria defined in **Section 4.0** to determine whether Cooma Road Quarry is in compliance with noise criteria defined within the Development Consent. The results will also be compared with the Noise Compliance Assessment information provided in Appendix 9 of the Development Consent (refer to **Section 6.1.1**).

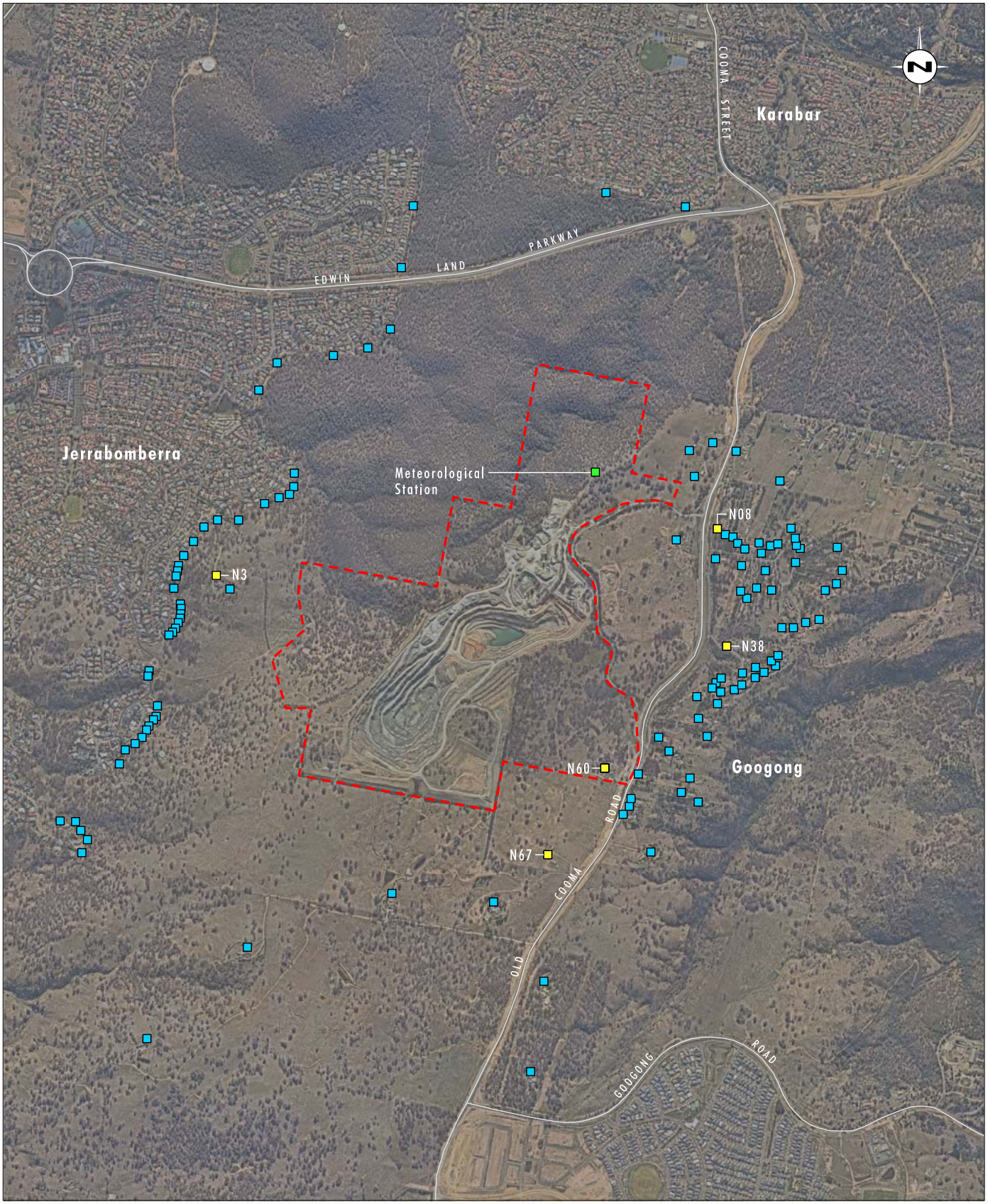

Image Source: Nearmap (May 2019)
Data Source: Holcim (2019)

0 0.5 1.0 1.25km
1:25 000

Legend

- Approved Project Area
- Indicative Dwelling Location
- Attended Noise Monitoring Location
- Meteorological Station

FIGURE 6.1

Noise Receiver and Monitoring Locations

The attended noise monitoring program is used to:

- determine the individual noise sources contributing to the ambient noise environment;
- estimate the contribution from quarry noise sources to the measured noise levels;
- determine whether a modifying factor should be applied to the contributing quarry noise levels (in accordance with the Industrial Noise Policy (INP) (EPA 2000)); and
- gain an understanding of the effects of meteorological conditions on the propagation of the noise from Cooma Road Quarry to the monitoring location.

Each quarterly attended noise survey comprises at least three 15 minute measurements at each location (as a minimum one day (shoulder), one day and one evening measurement). Although atmospheric conditions most likely to enhance noise propagation occur most frequently at night, it is necessary to characterise day (shoulder), day and evening emissions for comparison with the noise assessment criteria. For each 15 minute monitoring period, the following information will be recorded:

- operator's name;
- 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;
- qualitative/quantitative meteorological data such as temperature, wind speed, wind direction, cloud cover, humidity, fog, rainfall or opinions as to the onset or breakup of temperature inversions;
- instrument calibration details before and after the monitoring period;
- the LAeq,15minute 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};
- $L_{A1,1minute}$ noise levels (to allow comparison with the relevant sleep arousal criteria);
- notes that identify the noise source that contribute to the peak 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 at Cooma Road Quarry or from other identifiable noise sources;
- measurements in one-third octave 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; and
- data suitable for assessing the relative contribution of mine-generated noise to the overall noise being measured.

6.1.1 Noise Compliance Assessment

In accordance with the methodology outlined in Section 3.4 of the INP (EPA 2000) and Appendix 9 of the Development Consent, if any of the data in a 15 minute period is affected by the following meteorological conditions, noise monitoring for compliance with the criteria provided in **Table 5** does not apply:

- affected by rain or hail; or
- wind speeds in excess of 5 m/s at microphone height; or
- wind speeds greater than 3 m/s measured at 10 metres above ground level; or
- temperature inversion conditions greater than 3ºC/100 metres.

Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station on or in the vicinity of the site.

6.1.2 Meteorological Monitoring

A meteorological station has been installed at Cooma Road Quarry as detailed on **Figure 6-1** The meteorological monitoring data obtained from the station is in accordance with the requirements of Condition 17 of Schedule 3 of the Development Consent.

6.2 Independent Review

In the event that a landowner considers that Cooma Road Quarry is exceeding noise criteria at their property, the landowner may request an independent review of the noise impacts at their property. The independent review will be conducted in accordance with the procedure described in Condition 2 of Schedule 4 of the Development Consent.

6.3 Contingency Plan

In accordance with Condition 2e) of Schedule 5, Holcim Australia will implement a Trigger Action Response Plan (TARP) in order to manage any unpredicted impacts and their consequences as they may arise. These TARPs are designed to ensure that noise related impacts are minimised at surrounding sensitive receptors as conditions change onsite. The TARP includes a set of triggers that are based on site observations and monitoring data. Exceedances will be managed in accordance with **Section 7.2**.The Quarry Manager is responsible for implementing the TARPs below.

Table 7 Noise Trigger Action Response Plan (TARP)

Trigger Level	Trigger Detail	Response
Complaint Received	• Noise generated onsite results in community complaint.	• Review operations to reduce noise emissions. • Modify operations where possible. • Report complaint as necessary.
Elevated Noise Levels – Identified by Quarry Manager	• Day to day observations by Quarry Manager indicate elevated noise levels being generated by site.	• Review operations to reduce noise emissions. • Modify operations to reduce likelihood of noise impact. • Implement noise mitigation measures if necessary.
Elevated Noise Levels Approaching Criteria – During Monitoring	• Attended noise monitoring indicates noise levels are approaching noise criteria (within 2dB(A) of criteria).	• Review operations to reduce noise emissions. • Modify operations to reduce likelihood of noise impact. • Implement noise mitigation measures if necessary.
Noise Levels Exceed Criteria – During Monitoring	• Attended noise monitoring indicates noise criteria exceeded as identified in attended monitoring.	• Complete incident investigation to determine cause of exceedance. • Review effectiveness of current noise mitigation measures. • Modify operations. Exceedances to be managed in accordance with **Section 7.2.**

Adverse or extraordinary meteorological conditions	• Noise criteria do not apply under the meteorological conditions noted in Appendix 9 of the Development Consent. Despite this, during periods when these meteorological conditions are forecast or observed, the Quarry Manager will modify operations to minimise potential noise impacts as much as practically possible.	Action to be undertaken may include but is not limited to: • Turning off or limiting operation of mobile equipment or fixed plant, • Redirecting operations to more sheltered areas within the extraction area, and/or • Moving equipment to lower elevations.

In accordance with Conditions 9e) of Schedule 5 of the Development Consent, any discrepancies between the predicted and actual impacts of the development will be analysed during the Annual Review process and on a monthly basis. Monthly environmental monitoring data can be found on the Holcim Australia website (https://www.holcim.com.au/sustainability/environment/pollution-monitoring-data).

7.0 Reporting

7.1 External Reporting

A summary of noise monitoring results will be provided in the Cooma Road Quarry Annual Review. The following information will be reported in the Annual Review in accordance with Condition 9 of Schedule 5 of the Development Consent:

By the end of March each year, the applicant (Holcim Australia) shall review of the environmental performance of the development to the satisfaction of the Secretary. This review must:

- describe the development (including any rehabilitation) carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;
- include a comprehensive review of the monitoring results and complaints records of the development over the past calendar year, which includes a comparison of these results against the:
  - the relevant statutory requirements, limits or performance measures/criteria;
  - requirements of any plan or program required under this consent;
  - the monitoring results of previous years; and
  - the relevant predictions in the documents listed in condition 2(a) of Schedule 2 of the Development Consent;
- the relevant predictions in the documents listed in condition 2(a) of Schedule 2 of the Development Consent; identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the development;
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

In addition, in accordance with *Protection of the Environment Legislation Amendment Act 2011* (Amendment Act) and Condition 8 of Schedule 5 of the Development Consent, Holcim Australia will also publish noise monitoring results on the Holcim Australia website (http://www.holcim.com.au).

Performance monitoring, which includes an assessment of the effectiveness of noise monitoring and compliance with the relevant Development Consent and EPL conditions, may be discussed at Community Consultative Committee (CCC) meetings.

7.2 Noise Criteria Exceedance Reporting Protocol

Exceedances of noise criteria will be classified as non-compliances and will be managed in accordance with the requirements of the Cooma Road Environmental Management Strategy (EMS) which includes a procedure for the management of non-compliances. In accordance with this procedure, all non-compliances will be investigated by the Cooma Road Quarry Manager in consultation with Holcim Australia environmental personnel. Additional controls will be implemented where required, based on the outcomes of the investigation. All non-compliances will be reported annually in the Annual Review.

Additionally, in accordance with Schedule 4, Condition 1 of the Development Consent, in the event an exceedance of the noise impact assessment criteria is identified, Holcim Australia will notify DPIE and any affected landowner(s) as soon as practicable and provide regular monitoring results to each of these parties until the results show that the operation is complying with the relevant criteria (refer to **Section 4.0**).

7.2.1 Incident Notification

An incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. In accordance with Condition 7 Schedule 5 of the Development Consent, Holcim Australia shall notify DPIE and any other relevant agencies immediately after it becomes aware of an incident.

The notification must be in writing to compliance@planning.nsw.gov.au and identify Cooma Road Quarry, the Development Consent Number, the location and nature of the incident.

Incidents are also to be reported in accordance with the requirements of the *Protection of the Environment Operations Act 1997*, EPL 1453 and the Cooma Road Quarry Pollution Incident Response Management Plan (PIRMP).

7.2.2 Non-Compliances Notification

A non-compliance is an occurrence, set of circumstances or development that is a breach of the Development Consent. Within seven days of becoming aware of non-compliances, Holcim Australia must also notify DPIE of the non-compliance and identify:

- the condition 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 or will be undertaken to address the non-compliance.

7.2.3 Adaptive Management

In accordance with Condition 5 of Schedule 5 of the Development Consent, Holcim Australia will assess and manage noise related risks to ensure compliance with the criteria outlined in **Section 4.0**.

Where an exceedance relating to noise impact has occurred, Holcim Australia will, to the satisfaction of the Secretary of DPIE:

- take all reasonable and feasible measures to ensure the exceedance ceases and does not recur;
- consider all reasonable and feasible options for remediation (where relevant) and submit a report to the DPIE describing those options and any preferred remediation measures or other course of action; and
- implement remediation measures as directed by the Secretary of DPIE.

7.3 Complaint Response

Complaints relating to noise from Cooma Road Quarry are to be managed in accordance with the requirements of the Cooma Road Quarry EMS. A summary of complaints is published on the Holcim Australia website on a quarterly basis and provided in the Annual Review.

8.0 Review and Improvement

Ongoing monitoring and review on the performance and implementation of this NMP will be undertaken in accordance with Cooma Road Quarry EMS.

In accordance with Condition 4 of Schedule 5, Holcim Australia shall review, and if necessary revise, the strategies, plans, and programs required under Development Consent to the satisfaction of the Secretary, within 3 months of the submission of:

a) the submission of an annual review;
b) the submission of an incident report;
c) the submission of an audit report; and
d) any modifications to the Development Consent.

In accordance with Condition 3 Schedule 5, 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, Holcim Australia may submit revised strategies, plans or programs to the Secretary for approval at any time.

The Cooma Road Quarry Manager and Holcim Australia environmental personnel will review and if necessary, revise this NMP and resubmit to DPIE every year or earlier if required. Any changes made to the NMP as a result of the review will be made in consultation with EPA and Council. A copy of the revised NMP will be supplied to the Secretary of DPIE for approval. The NMP will reflect changes in environmental requirements, technology and operational procedures. Updated versions of the approved NMP will be made publicly available on the Holcim Australia website (http://www.holcim.com.au/).

9.0 Definitions

The terminology utilised within this NMP is defined in **Table 8** below.

Table 8 Definitions

Term	Definition
Daytime	In relation to noise criteria it is the period 7.00 am to 6.00 pm Monday to Saturday and 8.00 am to 6.00 pm Sundays and public holidays.
Decibel dB(A)	A decibel scale, weighted so that it takes into account the frequency response of the normal human ear.
Evening	In relation to noise criteria is the period 6.00 pm to10.00 pm.
Non-Compliance	Occurs when environmental monitoring results fall outside acceptable regulatory limits (i.e. Development Consent or EPL criteria).
LAeq (Period)	The average noise level, measured in dB(A), during a measurement period.
Night	In relation to noise criteria it is the period 10.00 pm to 7.00 am Monday to Saturday and 10.00 pm to 8.00 am Sundays and public holidays.

10.0 Roles and Responsibilities

Relevant roles and responsibilities associated with this NMP are presented in **Table 9** below.

Table 9 Roles and Responsibilities

Role	Accountabilities for this document
Holcim Australia District Manager	• Approve appropriate resources for the effective implementation of this plan.
Cooma Road Quarry Manager	• Provide that sufficient resources are allocated for the implementation of this Plan. • Coordinate the implementation of noise management controls and strategies in accordance with this Plan. • Coordinate the review of this plan in accordance with the requirements of the Development Consent.
Planning and Environment Coordinator NSW / ACT	• Coordinate the noise monitoring requirements of this plan, and evaluate and report monitoring results as required. • Coordinate noise related incident investigations and reporting as required by legislation and internal standards and guidelines. • Assist with the review of this plan.
All employees and contractors	• Comply with all requirements of this Plan. • Report all potential environmental incidents to the Quarry Manager immediately. • Seek approval from the Quarry Manager prior to making changes to infrastructure/processes which may result in increased noise emissions.

11.0 References

EMM Consulting 2016. Cooma Road Quarry*, Modification to Development Consent Environmental Assessment,* prepared for Holcim (Australia) Pty Ltd*.*

EMM Consulting 2019. Cooma Road Quarry*, Statement of Environmental Effects: Modification 2 to Development Consent,* prepared for Holcim (Australia) Pty Ltd*.*

NSW Environmental Protection Agency (EPA) 2000. *Industrial Noise Policy.*

Rudds Consulting Engineers Pty Ltd. *Road Traffic Nose Assessment Report, Cooma Road Quarry 2014*, prepared for Holcim (Australia) Pty Limited.

Standards Australia, *AS 1055 – 2018 Acoustics – Description and Measurement of Environmental Noise (Parts 1-3).*

Standards Australia, *AS/NZS 2702-1984 Acoustics – Methods for the Measurement of Road Traffic Noise.*

Standards Australia, *AS/NZS 3580.14:2014 - Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications.*

Standards Australia, *AS/NZS IEC 61672.1:2019 Electroacoustics – Sound Level Meters.*

Umwelt (Australia) Pty Limited 2012. *Cooma Road Quarry Continued Operations Project Environmental Impact Statement*, Report prepared for Holcim (Australia) Pty Limited.

Appendix 1 – General Management Plan Requirements from Development Consent

Schedule 5	**Section Number**
Management Plan Requirements 1. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
a) detailed baseline data	3.0
b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;	2.0 4.0 4.0
c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	5.0
d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above);	6.0 & 7.0
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;	6.3
f) a program to investigate and implement ways to improve the environmental performance of the project over time;	8.0
g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with conditions of this approval and statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and	7.2.1 7.3 7.2.2 7.2
h) a protocol for periodic review of the plan.	8.0

APPENDIX 2 - STAKEHOLDER CONSULTATION

NSW GOVERNMENT | Planning, Industry & Environment

Energy & Resources
Planning & Assessment
Contact: Colin Phillips
Telephone: 9274 6483
Email: colin.phillips@planning.nsw.gov.au

Ms Shilpa Shashi
Planning and Environment Coordinator NSW / ACT
Holicim (Australia) Pty Ltd
Level 8 Tower B - 799 Pacific Highway
CHATSWOOD NSW 2067

Dear Ms Shashi

Cooma Road Quarry Air Quality Expert (SSD 5109)

I refer to your letter of 30 July 2019 seeking the Secretary's approval of Mr Luke Bettridge of Umwelt as a suitably qualified person to update the quarry's Air Quality Management Plan, required by condition 16 of Schedule 3 of the quarry's consent.

The Secretary has approved the appointment of Mr Bettridge.

In accordance with condition 3 of Schedule 5, the Secretary has agreed that the company's revision of management plans, triggered by the approval of Modification 2, may occur without consulting the agencies nominated in the relevant conditions of consent. The exception is that the company must consult with Queanbeyan Council during the preparation of the Transport Management Plan.

Please contact Colin Phillips on the details above if you have any questions.

Yours sincerely

Howard Reed 7.8.19
Howard Reed
Director, Resource Assessments
Energy and Resource Assessments
As the Secretary's nominee

Our reference: EF13/3083: DOC13/69830-03
Contact: Kirsty Pearson 02 6229 7002

Mr Luke Bettridge
Senior Environmental Scientist
Umwelt (Australia) Pty Limited
75 York Street
TERALBA NSW 2284

24 March 2014

Dear Mr Bettridge

Re: Draft Environmental Management Plans for Cooma Road Quarry - Development Consent (SSD_5109) - Environment Protection Licence No. 1453

Thank you for your email 14 March 2014 inviting the Environmental Protection Authority's (EPA) comment on the draft Environmental Management Plans developed for the Cooma Road Quarry expansion project.

As you are aware, the Department of Planning and Infrastructure has issued an approval under Part 4 of the *Environmental Planning and Assessment Act* 1979 for the continued operation of the existing Cooma Road Quarry. The EPA understands the current development consent for Cooma Road Quarry will expire in October 2015 and the Project has been given approval to continue operation of the quarry for a further 20 years. The Project involves extending the approved extraction area and relocating some of the infrastructure components to allow for this extension. The revised Cooma Road Quarry Project Approval (SSD_5109) extends hours of operation for certain activities from 6pm to 10pm; increases production capacity from 1 to 1.5 million tonnes per annum; relocates the existing workshop, truck parking and temporary stockpiles; includes the addition of a mobile pug mill; incorporates recycling of clean concrete on site for re-use; and extends the approved extraction boundary to the north covering an additional area of about 3.5 ha.

As previously advised by the EPA, a variation to Environment Protection Licence (EPL) No. 1453 issued under the *Protection of the Environment Operations Act 1997* (POEO Act) will be required to accommodate the expansion project.

It is not the role of the EPA to approve or endorse such management plans. The EPA's role is to regulate compliance with the conditions of the EPL for the premises. Notwithstanding this, the EPA has conducted a brief review of the draft Environmental Management Plans including the Noise Management Plan, Blast Management Plan, Water Management Plan and Air Quality Management Plan prepared by Umwelt (Australia) Pty Ltd.

The plans appear adequate and the EPA has no specific comments to make at this stage. The installation of the meteorological station at the Cooma Road Quarry is a good tool for assisting in the management and mitigation of potential impacts related to operation as well as complaints investigation. The EPA supports this initiative.

PO Box 622 Queanbeyan NSW 2620
Level 3/11 Farrer Place Queanbeyan NSW 2620
Tel: (02) 6229 7002 Fax: (02) 6229 7006
ABN 43 692 285 758
www.epa.nsw.gov.au

We remind the proponent, Holcim, of its responsibility to ensure the EPL is appropriately varied prior to the commencement of construction activities for the Quarry extension.

I trust this information is of assistance. Should you have any queries or wish to discuss the EPA's response, please contact me or Kirsty Pearson on Ph: 6229 7002.

Yours sincerely

JULIAN THOMPSON
Unit Head – South East Region
NSW Environment Protection Authority

PF990489
C1434774

25 March 2014

Luke Bettridge
Senior Environmental Scientist
Umwelt (Australia) Pty Limited
lbettridge@umwelt.com.au

Dear Luke

RE: Cooma Road Quarry – Environmental Management Plans - Review
Thank you for the opportunity to review Environmental Management Plans for the Cooma Road quarry prior to submitting them to the Department. The timeframe was short and as such not all of the plans were able to be reviewed in detail by your deadline of 25 March 2014. However, the following comments are provided for your consideration:

Heritage Management Plan
To ensure the long term protection of the lime kiln it is recommended that a Weed Management Program be provided to address 4.1.1 dot point 3 (p. 6). This would give further clarification of weed poisoning over a stipulated time period. This would then commit the applicant to this program. Our Parks & Recreation section are happy to provide some information on a weed management program, however, the time frame of 25 March is not achievable for them.

Noise Management Plan, Blast Management Plan and Air Quality Management Plan
These plans have been reviewed by our Environmental Health section and they are satisfied that they have complied with the condition of approval.

Transport Management Plan
Additional time is requested to review this plan in detail.

Council will take the opportunity to provide further comment on the Transport Management Plan during the time that NSW Planning and Infrastructure are reviewing the Plans.

Yours sincerely,

Lorena Blacklock

Lorena Blacklock
Manager Development Control
Sustainability and Better Living
02 6285 6244

Appendix 3 – EIS Sound Power Levels

Throughout the life of Cooma Road Quarry, the equipment outlined in **Table 1**, or the equivalent, will be in use around the project area.

Table 1 – Sound Power Levels of Proposed Operational Equipment, dB(A)

Equipment Description	**SWL** [1]
Truck Wash Bay Pump	74
Workshop activities	86
Truck Washout	98
Air Conditioning Units	70
Aggregate dumping onto stockpile	81
Articulated truck working	108
Primary Crusher (continuous)	120
Secondary Crusher Crusher House (continuous)	103
Secondary Crusher Dust House Building (continuous)	103
Secondary Crusher Wash House Building (continuous)	103
Wheeled Loader (retrieving material and loading Dump trucks)	111
Dump Truck (Idling while getting loaded)	111
Dump Truck (Travel between pit-face and crusher storage)	114
Dump Truck Dumping	109
Dump Truck (Travel between crusher storage and pit face)	114
Water Cart (Travelling around site)	115
Wheeled Loader (Working around crushers)	111
Wheeled Loader (Working around stockpiles)	108
Public road haul truck (picking up material and at weighbridge)	109
Mobile pug mill	110
Agitator truck idling in parking area	96
Mobile crushing and screening plant - in-pit for peak demand periods	118

Note 1: Cooma Road Quarry EIS

During the daytime period all the equipment listed in **Table 1** could reasonably be expected to operate during periods of peak production.

A range of typical construction equipment likely to be utilised on the site in the construction of the infrastructure area were included in the model. The sound power levels of this equipment are described in **Table 2**. Given the size of the development it would be unusual to have multiple machines on site operating continuously. To account for the variability in the construction noise levels a sound power level of 105 dB(A) was used to represent a combination of machine related construction activities.

Table 2 – Sound Power Levels of Construction Equipment, dB(A)

Equipment Description	**SWL,** [dB(A) re: 1 pW]
Dumping of fill material	96
Front end Loader	102
Truck at idle	84
Bobcat	93
Concrete Truck	106