

# **Environmental Management Strategy**

## **Dubbo Quarry**

Prepared for Holcim (Australia) Pty Limited

January 2024

# Environmental Management Strategy

## Dubbo Quarry

Holcim (Australia) Pty Limited

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Approved by



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# 1 Introduction

## 1.1 Background

Holcim (Australia) Pty Limited (hereafter 'Holcim') operates the Dubbo Quarry (the quarry) located on Sheraton Road, Dubbo, New South Wales (NSW). On 2 March 2023, Holcim received development consent for the Dubbo Quarry Continuation Project (State Significant Development (SSD) 10417) (hereafter 'the project') to provide for the ongoing operation of the quarry. The project involves the development of two new resource areas to the south and west of the existing quarry boundary.

## 1.2 Strategy objectives

The objectives of this Environmental Management Strategy (EMS) are to:

- address consent conditions D1–D15 of SSD 10417
- provide a strategic framework for environmental management at the quarry
- provide an over-arching document hierarchy for the relevant approval conditions to be implemented through various environmental management plans (EMPs)
- outline measures for achieving compliance with relevant legislation.

## 2 Project overview

### 2.1 Background

The quarry is a basalt quarry, located approximately 5 kilometres (km) south-east of the city of Dubbo, in the Dubbo Regional Council local government area (Dubbo LGA).

The quarry has operated since 1980 under development consent SPR79/22, producing high quality basalt aggregates for use in the construction industry in concrete, asphalt, road base and other applications for commercial and domestic markets, prior to obtaining the new consent.

### 2.2 Approved operations under (SSD) 10417

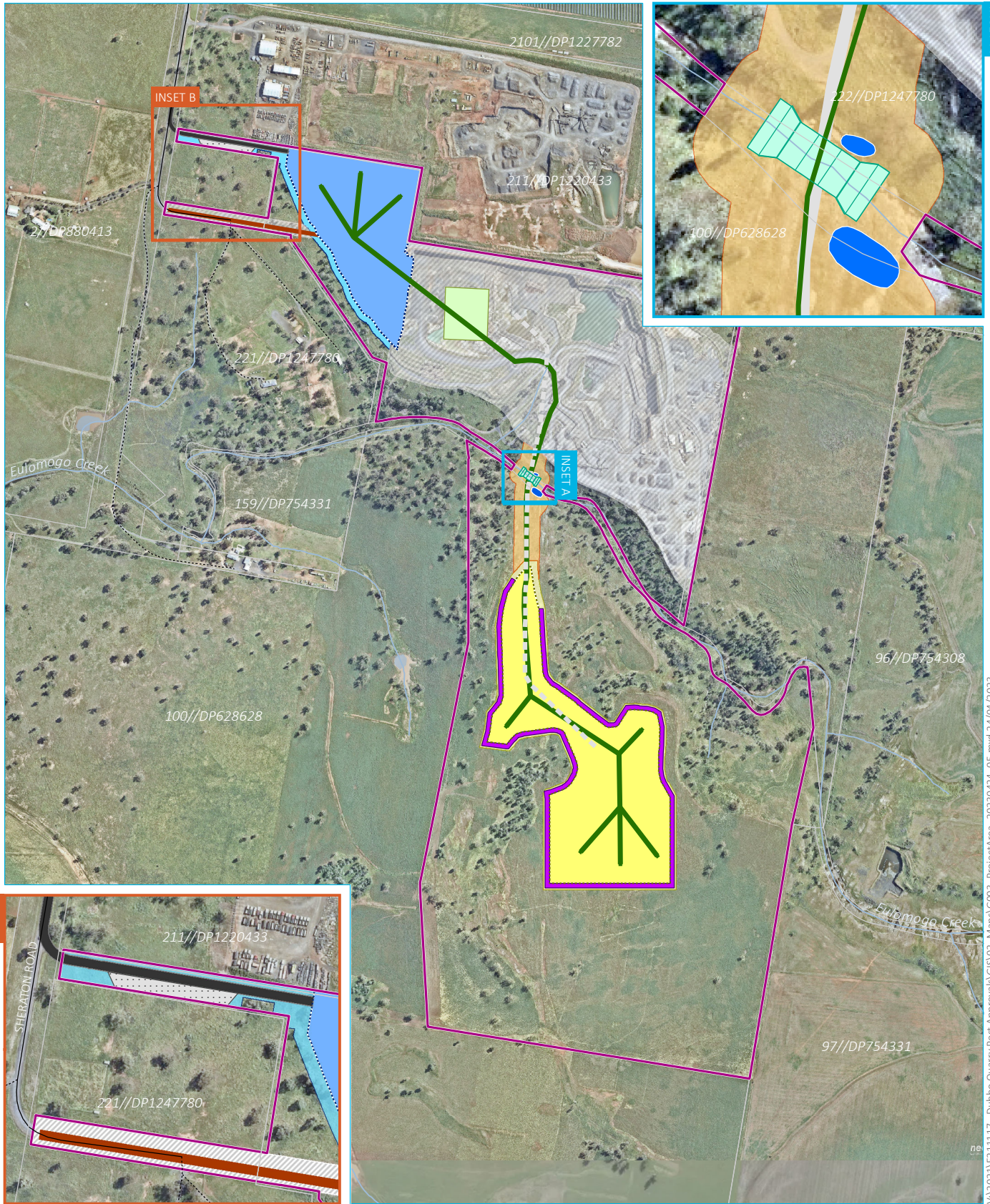
The approved operations at the quarry include:

- continued operation of the quarry including extraction, processing and other associated activities within the existing site
- extraction within two new resource areas, known as the Western Extension Area (WEA) and Southern Extension Area (SEA)
- construction of a noise attenuation and visual amenity bund around the perimeter of the SEA
- retention of the existing access road and an option to construct a new internal access road to connect with Sheraton Road, north of the existing access road and intersection with Sheraton Road (the 'proposed access road')
- a new internal haul road (southern haul road) to connect the existing site with the SEA, which will include construction of a culvert type crossing across Eulomogo Creek
- a conveyor system for transfer of product from the WEA and SEA to the processing plant
- modifications to the existing water management infrastructure within the existing site
- additions to the existing water management infrastructure to service the WEA and SEA.

The approved project is shown in Figure 2.1.

The quarry is approved to operate at a maximum production rate of 500,000 tonnes per annum, for 25 years from the date of commencement of the development.





Source: EMM (2023); DFSI (2017); GA (2011); Nearmap (2020)

**KEY**

- |                                      |                                    |  |
|--------------------------------------|------------------------------------|--|
| Project area                         | Indicative proposed water crossing | Proposed overland conveyor   |
| Indicative existing disturbance area | Western extension area             | Proposed haul road   |
| Existing access road                 | Western disturbance area           | Minor road   |
| Alternative access road              | Haul road disturbance area         | Vehicular track  |
| Alternative truck tarping area       | Southern extension area            | Watercourse/drainage line  |
| Bund wall                            | Southern disturbance area          | Waterbody  |
| Sediment pond                        | Processing plant                   | Cadastral boundary (data does not align with surveyed site boundary) |

Project area

Dubbo Quarry Continuation Project  
Environmental Management Strategy  
Figure 2.1



V:\2021\211117 - Dubbo Quarry Post Approvals\GIS\02\_Maps\G003\_ProjectArea\_20230424\_05.mxd 24/04/2023



## 3 Statutory context

The quarry is to be operated in accordance with the applicable legislation, policies, development approval conditions, permits and licencing requirements. This section summarises the regulatory requirements applicable to this EMS.

### 3.1 Project approval

The project is classified as SSD under the NSW *Environmental Planning and Assessment Act 1979*. The following SSD processes were undertaken during approval of the project:

- the Development Application and EIS for the project were publicly exhibited in February and March 2021
- a Submissions Report was submitted on 18 June 2021
- an Addendum Submissions Report was submitted in September 2022 (including updated consolidated project description)
- an Amendment Report was submitted in October 2022 (including updated consolidated project description)
- State Significant Development approval was granted and final conditions of consent received on 2 March 2023.

### 3.2 Hold points

A number of hold points apply to activities covered by SSD-10417. These are provided as Appendix F.

### 3.3 Statutory context

The key NSW and Commonwealth legislation applicable to the project includes:

- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act)
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Protection of the Environment Operations Act 1997* (POEO Act)
- *National Parks and Wildlife Act 1974*
- *Biodiversity Conservation Act 2016*
- *Water Act 1912*
- *Water Management Act 2000*.

The following policies/plans are also applicable to the project:

- State Environmental Planning Policy (Resources and Energy) 2021
- Dubbo Regional Local Environmental Plan 2022.

### 3.4 Statutory approvals

The statutory approvals required to be held by the quarry include:

- State Significant Development consent (SSD-10417)
- Environment Protection Licence (EPL 2212)
- Part 5 licences (*Water Act 1912*) for groundwater monitoring locations
- any other relevant approvals.

### 3.5 EMS consent conditions

The consent conditions applicable to this EMS are outlined in Table 3.1. A copy of the consent conditions is included as Appendix B.

**Table 3.1** Consent conditions relating to EMS

Condition number	Condition	Where addressed
<b>Environmental Management Strategy</b>		
D1	An Environmental Management Strategy must be prepared for the development to the satisfaction of the Planning Secretary. This strategy must:	This plan
a)	provide the strategic framework for environmental management of the development	Chapter 4
b)	identify the statutory approvals that apply to the development	Section 3.4
c)	set out the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development	Section 4.5
d)	set out the procedures to be implemented to:	
d) i)	keep the local community and relevant agencies informed about the operation and environmental performance of the development	Chapter 5
d) ii)	receive, record, handle and respond to complaints	Section 5.3
d) iii)	resolve any disputes that may arise during the course of the development	Section 5.8
d) iv)	respond to any non-compliance and any incident	Section 5.4 Section 5.5 Section 5.6 Section 5.7 Chapter 6
d) v)	respond to emergencies	Section 4.4
e) i)	include: <ul style="list-style-type: none"> <li>• references to any strategies, plans and programs approved under the conditions of this consent</li> </ul>	Section 4.3
e) ii)	<ul style="list-style-type: none"> <li>• a clear plan depicting all the sites where monitoring is to be carried out under the conditions of this consent.</li> </ul>	Appendix C



**Table 3.1 Consent conditions relating to EMS**

Condition number	Condition	Where addressed
D2	The Applicant must not commence construction or quarrying operations until the Environmental Management Strategy is approved by the Planning Secretary.	Appendix A
D3	The Applicant must implement the approved Environmental Management Strategy.	This document
D4	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
	(a) a summary of relevant background or baseline data	Section 4.3
	(b) details of:	Section 4.3
	(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions)	
	(ii) any relevant limits or performance measures and criteria	
	(iii) 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 to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria	Section 4.3
	(d) a program to monitor and report on the:	Section 4.3
	(i) impacts and environmental performance of the development	
	(ii) effectiveness of the management measures set out pursuant to condition A2(c)	
	(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	Section 4.3
	(f) a program to investigate and implement ways to improve the environmental performance of the development over time	Section 4.3
	(g) a protocol for managing and reporting any:	Section 4.3
	(i) incident, non-compliance or exceedance of the impact assessment criteria or performance criteria	
	(ii) complaint, or	
	(iii) failure to comply with statutory requirements	
	(h) a protocol for periodic review of the plan.	Section 4.3

**Table 3.1 Consent conditions relating to EMS**

Condition number	Condition	Where addressed
<b>Revision of Strategies, Plans and Programs</b>		
D5	<p>Within three months of:</p> <p>(a) the submission of an incident report under condition D7</p> <p>(b) the submission of an Annual Review under condition D9</p> <p>(c) the submission of an Independent Environmental Audit under condition D11</p> <p>(d) the approval of any modification of the conditions of this consent, or</p> <p>(e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review</p> <p>the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.</p>	Chapter 6
D6	<p>If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.</p>	Chapter 6
<b>Reporting and Auditing – Incident Notification</b>		
D7	<p>The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing through the Department’s Major Projects website and identify the development (including the development application number and name) and set out the location and nature of the incident.</p>	Section 5.5.2
<b>Reporting and Auditing – Non-compliance Notification</b>		
D8	<p>Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to through the Department’s Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p>	Section 5.6

**Table 3.1 Consent conditions relating to EMS**

Condition number	Condition	Where addressed
<b>Reporting and Auditing – Annual Review</b>		
D9	<p>By the end of March in each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:</p> <ul style="list-style-type: none"> <li>(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year</li> <li>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the: <ul style="list-style-type: none"> <li>(i) relevant statutory requirements, limits or performance measures/criteria</li> <li>(ii) requirements of any plan or program required under this consent</li> <li>(iii) monitoring results of previous years</li> <li>(iv) relevant predictions in the documents listed condition A2</li> </ul> </li> <li>(c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence</li> <li>(d) evaluate and report on: <ul style="list-style-type: none"> <li>(i) the effectiveness of the noise and air quality management systems</li> <li>(ii) compliance with the performance measures, criteria and operating conditions in this consent</li> </ul> </li> <li>(e) identify any trends in the monitoring data over the life of the development</li> <li>(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies</li> <li>(g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.</li> </ul>	Section 6.1
D10	Copies of the Annual Review must be submitted to Council and DPE Water and made available to the CCC and any interested person upon request.	Section 6.1

**Table 3.1 Consent conditions relating to EMS**

Condition number	Condition	Where addressed
<b>Reporting and Auditing – Independent Environmental Audit</b>		
D11	<p>Within one year of the commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:</p> <ul style="list-style-type: none"> <li>(a) be led and conducted by a suitably qualified, experienced and independent team of experts, whose appointment has been endorsed by the Planning Secretary</li> <li>(b) be carried out in consultation with the relevant agencies and the CCC</li> <li>(c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and EPL for the development (including any assessment, strategy, plan or program required under these approvals)</li> <li>(d) review the adequacy of any approved strategy, plan or program required under this consent and the other abovementioned approvals</li> <li>(e) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under this consent and the other abovementioned approvals</li> <li>(f) be conducted and reported to the satisfaction of the Planning Secretary.</li> </ul>	Section 6.2
D12	<p>Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.</p>	Section 6.2
<b>Monitoring and Environmental Audits</b>		
D13	<p>Any condition of this consent that requires the carry out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&amp;A Act. This includes conditions in respect of incident notification, reporting and response, non compliance notification, compliance report and independent audit.</p> <p>For the purposes of this conditions, as set out in the EP&amp;A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.</p>	Section 6.3

**Table 3.1 Consent conditions relating to EMS**

Condition number	Condition	Where addressed
<b>Access to Information</b>		
D15	<p>Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must:</p> <p>(a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:</p> <ul style="list-style-type: none"> <li>(i) the document/s listed in A2</li> <li>(ii) all current statutory approvals for the development</li> <li>(iii) all approved strategies, plans and programs required under the conditions of this consent</li> <li>(iv) minutes of CCC meetings</li> <li>(v) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent</li> <li>(vi) 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</li> <li>(vii) a summary of the current stage and progress of the development</li> <li>(viii) contact details to enquire about the development or to make a complaint</li> <li>(ix) a complaints register, updated monthly</li> <li>(x) the Annual Reviews of the development</li> <li>(xi) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant’s response to the recommendations in any audit report</li> <li>(xii) any other matter required by the Planning Secretary</li> </ul> <p>(b) keep such information up to date, to the satisfaction of the Planning Secretary.</p>	Section 5.1



## 4 Environmental management framework

### 4.1 Environment policy

Holcim's [Environment Policy](#) applies to all Holcim operations in Australia.

The environment policy commits to:

- continuous improvement of environmental performance and provide positive contribution to the Holcim business and to society
- sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The environment policy is based on the following four key commitments:

#### 1. Management systems:

- All operations shall use an effective EMS that aligns with the requirements of ISO14001 to manage overall environmental responsibilities and performance.
- All operations shall comply with all applicable environmental laws, regulations, standards and voluntary agreements applicable to products and operations.
- Promote commitment through training and integrate the consideration of environmental issues into business decision-making.
- Engage with customers to develop sound environmental practices and expect contractors and suppliers to respect and comply with environmental policies and procedures.
- Set corporate objectives and targets and undertake regular audits of environmental performance to monitor progress.

#### 2. Environmental impacts:

- Process Improvement: assess and measure environmental impacts, continuously improve processes, tools and capabilities and promote best practices in our industry. Encourage analysis of impacts through the life cycle of our products and solutions.
- Release of pollutants: identify, develop and implement effective controls to monitor, minimize or prevent the release of pollutants to the environment (air, water, and soil) from operations.
- Climate change: strive to reduce impact on climate change through the development, manufacture or promotion of innovative and sustainable products and solutions, optimizing the use of energy, and where appropriate the use of renewable energy sources.
- Water: minimise our impact on water resources by limiting water withdrawal through the use of recycling, the promotion of water efficient practices and a responsible management of water discharges.
- Quarry Rehabilitation: develop a rehabilitation plan for all quarry sites that takes into account the needs and expectations of stakeholders and, where feasible and relevant, fosters wildlife habitat creation and contribution to the conservation of species.

- Biodiversity: implement biodiversity management plans for all relevant extraction sites and work to protect important areas or habitats and facilitate the conservation of heritage artifacts discovered during site development and quarry operations.
- Local impacts: assess, and appropriately mitigate, impacts on surrounding communities in regards to fugitive dust, noise, vibrations, and traffic.

### 3. Resource utilisation:

- Promote eco-efficiency, conservation of non-renewable resources and recycling of secondary materials.
- Pursue the optimal utilisation of resources and the reduction of waste.

### 4. Stakeholder relations, monitoring and reporting:

- Be open, honest, and accountable to stakeholders.
- Effectively engage and communicate with stakeholders in relation to environmental matters.

## 4.2 Safety, health and environment policy

In addition to Holcim’s environment policy, Holcim’s Safety Health and Environment (SHE) Policy also applies to Holcim’s operations in Australia. All activities at the quarry will be undertaken in accordance with these two policies which have been developed in accordance with the principles of ISO 14001. A copy of the SHE policy is maintained on the internal Holcim intranet.

SHE Standard 4 describes environmental management requirements as they relate to the operational control of significant environmental aspects (hazards or risks). For each environmental hazard, a set of minimum environmental standards have been developed. These standards are used to measure environmental performance over time.

## 4.3 Environmental management plans

The following environmental management plans<sup>1</sup> for the quarry will become applicable upon physical commencement of the project development, or as per the conditions of the relevant consent:

- this EMS
- Air Quality Management Plan
- Noise Management Plan
- Water Management Plan
- Traffic Management Plan
- Rehabilitation Management Plan

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<sup>1</sup> Note, in addition to these management plans, Holcim also has an Aboriginal Cultural Heritage Management Plan (ACHMP). The ACHMP is not required as a condition of consent, however, in the interests of best practice, Holcim will implement the ACHMP during the operation phase.

- Biodiversity Management Plan including a Biodiversity Offset Strategy.

A summary of management and mitigation measures is provided in Appendix E.

In accordance with condition D4, each management plan has been prepared in accordance with relevant guidelines, and includes:

- a summary of relevant background or baseline data
- details of relevant statutory requirements
- details of relevant limits or performance measures and criteria
- specific performance indicators
- management measures
- monitoring and reporting program
- a contingency plan to manage any unpredicted impacts
- a program to investigate and improve environmental performance
- a protocol for managing and reporting incidents, non-compliances, exceedances and complaints
- a protocol for periodic review of the plan.

#### 4.4 Emergency response

A range of plans and procedures are in place to support a structured approach to emergency responses. These documents set out a framework for managing safety and environmental risks if an incident or emergency occurs, including roles and responsibilities, notification protocols, and community communication procedures.

The most relevant plan for the management of environmental emergencies is the *Dubbo Quarry Pollution Incident Response Management Plan (PIRMP)*, updated from time to time.

The PIRMP has been prepared to address specific requirements in the POEO Act. The PIRMP includes a detailed risk assessment, hazardous substances inventory, communication procedures and safety requirements.

The emergency response protocol for the quarry is provided as Table 4.1.

**Table 4.1 Emergency response protocol**

Trigger	Agency	Contact details
An incident that presents an immediate threat to human health or property.	Fire and Rescue NSW NSW Police NSW Ambulance Service	Call 000
An incident that:	Environment Protection Authority	131 555
• does not require an initial combat agency, or	NSW Health	Dubbo Base Hospital Phone (02) 6809 6809
• once the 000 call has been made.		If no answer, 0418 866 397
	Resources Regulator incident reporting line	1300 814 609

**Table 4.1**      **Emergency response protocol**

Trigger	Agency	Contact details
Notify the relevant authorities in the following order.	SafeWork NSW	Phone 13 10 50
Agencies to be contacted depending on type of pollution incident:	Dubbo Regional Council	02 6801 4000
	Natural Resources Access Regulator	1800 633 362
	Crown Lands Division	(02) 6836 3018

Note:      Complying with these notification requirements does not remove the need to comply with any other obligations for incident notification, for example, those that apply under other environment protection legislation or legislation administered by SafeWork NSW.

## 4.5      Roles and responsibilities

Environmental management at the quarry is the responsibility of all employees and contractors, with the Dubbo Quarry Manager having overall responsibility. Environmental roles and responsibilities for project personnel are outlined in Table 4.2.

Environmental responsibilities are included in the position descriptions of all employees at the quarry.

**Table 4.2 Environmental management roles and responsibilities**

Role	Responsibilities
Quarry Manager	<ul style="list-style-type: none"> <li>• Have a working knowledge of Strategy, the Holcim Environmental Policy and the Holcim EMS.</li> <li>• Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance.</li> <li>• Ensure appropriate training is provided to all employees and contractors regarding their environmental responsibilities.</li> <li>• Provide adequate resources to allow the development, implementation and operation of the quarry EMS.</li> <li>• Authorise the EMS.</li> <li>• Liaise with the Holcim Support Services Supervisor regarding the preparation of annual environmental programs and their implementation.</li> <li>• Ensure all operations are undertaken in accordance with the Holcim Environmental Policy and EMS.</li> <li>• Assist the Holcim Support Services Supervisor to undertake liaison with regulatory authorities and the community in relation to environmental matters.</li> </ul>
Line Managers	<ul style="list-style-type: none"> <li>• Have a working knowledge of this Strategy, the Holcim Environmental Policy and the EMS.</li> <li>• Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance.</li> <li>• Ensure all operations are undertaken in accordance with the quarry Environmental Policy, procedures, and EMS.</li> </ul>
Holcim Support Services Supervisor/Team	<ul style="list-style-type: none"> <li>• Implement and maintain the EMS.</li> <li>• Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance.</li> <li>• Ensure appropriate training is provided to all employees and contractors regarding their environmental responsibilities.</li> <li>• Ensure all statutory reporting is undertaken.</li> <li>• Ensure all operations are undertaken in accordance with the Holcim Environmental Policy and EMS.</li> <li>• In consultation with the Quarry Manager, undertake liaison with regulatory authorities and the community in relation to environmental matters.</li> </ul>
Holcim Environment Manager/s	<ul style="list-style-type: none"> <li>• Assist in the coordination of incident investigations and reporting as required by legislation and internal standards and guidelines.</li> <li>• Assist with the review of this Plan.</li> </ul>
All employees and contractors	<ul style="list-style-type: none"> <li>• Be aware of this strategy and the Holcim Environmental Policy and undertake all works in accordance with these documents.</li> <li>• Be responsible and accountable for the environmental impact of the work they perform.</li> <li>• Immediately report any environmental incidents to their supervisor.</li> </ul>



## 4.6 Training, awareness and competence

Holcim has developed an environmental training and induction program for all employees, contractors and visitors at the quarry. The training and induction program consists of:

- induction training
- toolbox talks.

Training consists of inductions for all new staff and contractors. Permanent staff will be retrained in general environmental awareness as required (may be undertaken as part of a re-induction process). Key issues addressed in the induction and toolbox talks include dust and noise minimisation, vegetation clearing procedures, archaeological awareness and water and energy management.

Toolbox talks will be held on an as-needs basis to address specific environmental issues, such as findings from incident or complaint investigations, or improvement initiatives.

## 5 Communication

This section outlines the communication strategies and protocols between the quarry management, employees, contractors and external stakeholders.

### 5.1 Website

Holcim maintains a website for the quarry ([www.holcim.com.au/dubbo-quarry](http://www.holcim.com.au/dubbo-quarry)), in accordance with consent condition D15. Once the management plans are approved, the following documents will be made available on the website until the completion of all rehabilitation:

- all current statutory approvals for the development
- all approved strategies, plans and programs required under SSD-10417
- minutes of Community Consultative Committee (CCC) meetings
- results of reporting on the environmental performance
- results of monitoring programs
- contact details for enquiries and complaints
- copy of complaints register (updated monthly)
- annual reviews
- summary of the current phase and progress of the development
- Audit Reports and responses to audit findings
- any other matter required by the Planning Secretary.

The website will be kept up to date as necessary.

### 5.2 Community consultative committee

Holcim maintains a CCC for the quarry, in accordance with consent condition A18, which requires:

Within 6 months from the date of commencement of development, a CCC must be established for the development in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019) or latest version.

In accordance with the consent conditions, the CCC comprises an independent chair with appropriate representation from Holcim, Dubbo Regional Council and the local community including the three schools on Sheraton Road.

The CCC is a forum to discuss the development of the quarry and the outcomes of monitoring programs.

The CCC meets at least twice a year, increasing to quarterly depending upon the operations within the quarry.

Aspects pertaining to the EMS, including incidents, exceedances of criteria and community complaints are discussed within the CCC. Minutes of the CCC meetings are made available on Holcim's website.

## 5.3 Complaints management

To minimise the risk of complaints, Holcim proactively communicates proposed activities that may affect the community.

Any complaints received from the community relating to the quarry operations are recorded in the complaints register. The complaints register prompts for details relating to:

- details of the complaint (date, time, specifics, complainant's contact details)
- root cause of incident/complaint
- corrective or preventative actions required to avoid a recurrence
- when corrective or preventative actions need to take place.

Each complaint is assigned a unique complaints number.

If the complainant requests follow up, this is completed within the requested timeframe where practicable.

If the complaint is relevant to an exceedance or non-compliance of approval criteria covered by a management plan, it will be managed as per the details of that plan.

Corrective and preventative actions identified as a result of a complaint will be communicated to all relevant personnel through toolbox meetings and/or company memorandums.

The record of a complaint will be kept for at least four years after the complaint was made and the record will be produced to any authorised officer if requested.

The complaints register is reviewed weekly by Holcim's Planning and Environment team to ensure that all complaints are adequately closed out and that trends are identified.

Complaints are typically received via the quarry environment and community enquiries telephone number (02 6884 1455) or via the quarry website. The enquiries telephone number is provided on the website and on a sign at the site entrance.

A summary of the quarry complaints register is publicly available on the Holcim website (and is updated online monthly).

Complaints and community concerns are discussed at the CCC meetings.

Records of complaints are kept for a minimum of four years in a register to be maintained by the Holcim Support Services Supervisor and are reported on an annual basis in the Annual Review.

## 5.4 Exceedances of environmental criterion

In addition to Holcim's internal incident management process (Section 5.5), environmental exceedances will be managed and reported in accordance with consent conditions C4-C8.

Within 7 days of obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion, Holcim will provide full details of the exceedance to any affected landowners and tenants. Full details of the exceedance will also be published on the Holcim website.

If the exceedance relates to air quality criterion, Holcim will provide a copy of the fact sheet entitled 'Mine Dust and You' (NSW Minerals Council 2011)' to any affected landowners and tenants.

### 5.4.1 Independent review

Under Condition C8, if a landowner considers that the quarry is exceeding noise, blasting or air quality criterion, the landowner may request from the Planning Secretary an independent review of the impacts of the development on their land.

The Planning Secretary will undertake an assessment and if the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision. However, if the Planning Secretary is satisfied that an independent review is warranted, Holcim will, within 3 months of the Planning Secretary's decision, commission an independent review in accordance with condition C8. A copy of the independent review will be provided to the Planning Secretary and landowner. Holcim will comply with any written request made by the Planning Secretary to implement findings of the review.

## 5.5 Environmental incidents

The development consent for SSD-10417 defines:

- an **incident** to be "an occurrence or a set of circumstances that causes or threatens to cause material harm and which may or nor cause a non-compliance"
- **Non-compliance** as "an occurrence, set of circumstances or development that is a breach of this consent".

### 5.5.1 Incident management process

All employees, visitors and contractors at the quarry are required to report any incidents and non-conformances.

All reported incidents are assigned a unique incident number and are recorded in the incidents register. The incident register prompts for details relating to:

- details of the incident (date, time, specifics, conditions, contact details of person reporting the incident)
- root cause of incident
- any contributing factors which led to the incident
- corrective or preventative actions required to avoid a recurrence
- when corrective or preventative actions need to take place
- outcomes of the review to assess the effectiveness of the corrective action.

The incidents register is reviewed weekly to ensure incidents are adequately closed out and that trends are identified.

The findings of incident investigations and any changes to site process or protocols will be communicated to all personnel through toolbox meetings and/or company memoranda.

The incidents register will be kept for at least four years after the incident was recorded and the record will be produced to any authorised officer if requested.

## 5.5.2 Departmental notification of incidents

In addition to Holcim's incident management process, environmental incidents at Dubbo Quarry will be reported to the Department of Planning and Environment (DPE) in accordance with consent condition D7:

The Applicant must immediately notify the Department in writing and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing through the Department's Major Projects website and identify the development (including the development application number and name) and set out the location and nature of the incident.

The notification will include the date, time and nature of the incident and any immediate actions that have been or will be implemented to respond to the incident. It will also include a summary of any consultation undertaken with DPE or EPA as necessary and the outcomes of the consultation.

## 5.6 Environmental non-compliances

In addition to Holcim's internal incident management process, environmental non-compliances at the quarry will be reported to DPE in accordance with consent condition D8:

Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing through the Department's Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

## 5.7 Environmental harm notification

If environmental harm is detected, Holcim's Environment Team will notify the EPA by telephoning 131 555 in accordance with the EPL 2212. The Environment Team will submit a written report to the EPA within seven days of notifying the EPA in accordance with the conditions of the EPL 2212.

## 5.8 Dispute resolution

In the event of a dispute between Holcim and a member of the community, the Environment Team will implement the complaints management procedure (Section 5.3) to reach a resolution. If the issue is unable to be resolved through this process, either party may refer the matter to the Planning Secretary.

As established by the relevant conditions of SSD-10417, the Planning Secretary can provide dispute resolution in the following situations:

- Property inspections (B13): If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagreed with the findings of the property inspection report, either party may refer the matter to the Planning Secretary for resolution.
- Property investigations (B16): If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagreed with the findings of the independent property investigation, then either party may refer the matter to the Planning Secretary for resolution.
- Compensatory water supply (B31): If the Applicant and the landowner cannot agree on whether the loss of water is to be attributed to the development or the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary.



- Additional mitigation measures upon request (C2): If within 3 months of receiving a request for additional mitigation from the owner, 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 then either party may refer the matter to the Planning Secretary.

## 6 Reviews and improvements

### 6.1 Annual review

Holcim will prepare and submit an Annual Review report in accordance with consent condition D9, which requires:

By the end of March in each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:

- a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year
- b) include a comprehensive review of the monitoring results and complaints records in the previous calendar year, including a comparison of these results against the:
  - relevant statutory requirements, limits or performance measure/criteria
  - requirements of any plan or program required under this consent
  - monitoring results of previous years relevant predictions in the documents listed in condition A2
- c) identify any non-compliance or incident with which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence
- d) evaluate and report on:
  - the effectiveness of the noise and air quality management systems
  - compliance with the performance measures, criteria and operating conditions in this consent
- e) identify any trends in monitoring data over the life of the development
- f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies
- g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

In accordance with conditions D10, copies of the Annual Review will be submitted to Council and DPE Water and made available to the CCC and any interested person upon request.

Copies of the Annual Reviews will also be made available on the Holcim website.

## 6.2 Independent environmental audit

Holcim will commission Independent Environmental Audits in accordance with consent condition D11, which requires:

Within one year of the commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:

- b) Be led and conducted by a suitably qualified, experienced and independent team of experts, whose appointment has been approved by the Planning Secretary.
- c) Be carried out in consultation with the relevant agencies and the CCC.
- d) Assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and EPL for the development (including any assessment, strategy, plan or program required under these approvals.
- e) Review the adequacy of any approved strategy, plan or program required under this consent and the other above-mentioned approvals.
- f) Recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under this consent and the other above-mentioned approvals
- g) Be conducted and reported to the satisfaction of the Planning Secretary.

In accordance with consent condition D12, Holcim will, within three months of commencing the Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations.

## 6.3 Monitoring and environmental audits

The following environmental management plans for the quarry include monitoring requirements:

- this EMS
- Air Quality Management Plan
- Noise Management Plan
- Water Management Plan
- Traffic Management Plan
- Rehabilitation Management Plan
- Biodiversity Management Plan.

The monitoring locations are outlined in Appendix C. Note that the monitoring locations for the Rehabilitation Management Plan will not be selected until closer to the timeframe when rehabilitation establishment is commencing.

A summary of the monitoring program is provided in Appendix E.

In accordance with condition D13, the monitoring requirements are taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

## 6.4 Review of EMS and management plans

Holcim will review the suitability of this EMS and relevant management plans in accordance with consent conditions D5, which requires:

Within three months of:

- a) submission of an incident report under condition D7
- b) submission of an Annual Review under condition D9
- c) submission of an Independent Environmental Audit under condition D11
- d) the approval of any modification of the conditions of this consent
- e) the issue of a direction of the Planning Secretary under conditions A2(b) which requires a review
- f) the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.

The revision process will involve Holcim's environment personnel reviewing the management measures detailed in each of the management plans and confirming that they remain relevant. Where required, the management plan content will be revised. Where revisions are required, the revised document will be submitted to the Planning Secretary for approval within six weeks of the review (in accordance with consent condition D6).

## 6.5 Annual return

Holcim will submit an annual return to the EPA, in accordance with the EPL 2212 conditions.

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# Appendix A

## EMS approval

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# Appendix B

## Consent conditions (SSD-10417)

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# Development Consent

## *Section 4.38 of the Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, I approve the development application referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

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



Jessie Evans

**Director, Energy and Resource Assessments**

Sydney

2 March 2023

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### **SCHEDULE 1**

**Application Number:**

SSD 10417

**Applicant:**

Holcim (Australia) Pty Limited

**Consent Authority:**

Minister for Planning

**Site:**

The land defined in Appendices 1 and 2

**Development:**

Dubbo Quarry Continuation Project

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## DEFINITIONS

<b>Aboriginal object / Aboriginal place</b>	Has the same meaning as the definition of the term in section 5 of the <i>National Parks and Wildlife Act 1974</i>
<b>AEP</b>	Annual Exceedance Probability
<b>AHD</b>	Australian Height Datum
<b>Annual Review</b>	The review required by condition D9
<b>Applicant</b>	Holcim (Australia) Pty Limited
<b>Approved extraction areas</b>	Areas identified as the Southern Extension Area and the Western Extension Area on the Development Layout
<b>BCA</b>	Building Code of Australia
<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i>
<b>BCD</b>	Biodiversity Conservation Division within the Department
<b>Calendar year</b>	A period of 12 months from 1 January to 31 December
<b>CCC</b>	Community Consultative Committee required by condition A18
<b>Conditions of this consent</b>	Conditions contained in Schedule 2
<b>Construction</b>	All physical works to enable quarrying operations to be carried out, including demolition and removal of buildings or works, and erection of buildings and other infrastructure permitted by this consent
<b>Council</b>	Dubbo Regional Council
<b>Date of commencement</b>	The date notified to the Department by the Applicant under condition A14 for the commencement of construction or quarrying operations.
<b>Day</b>	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
<b>Decommissioning</b>	The deconstruction or demolition and removal of works installed as part of the development
<b>Demolition</b>	The deconstruction and removal of buildings, sheds and other structures on the site
<b>Department</b>	NSW Department of Planning and Environment
<b>Development</b>	The development described in the document/s listed in condition A2, as modified by the conditions of this consent.
<b>Development Layout</b>	The plan in Appendix 2
<b>DPE Water</b>	Water Group within the Department
<b>EIS</b>	The Environmental Impact Statement titled " <i>Dubbo Quarry Continuation Project</i> ", prepared EMM Pty Limited dated January 2021, submitted with the application for consent for the development, including the Applicant's Submissions Report dated June 2021, Addendum Submissions Report dated September 2022, Amendment Report dated October 2022 and additional information provided by the Applicant dated December 2022.
<b>Environment</b>	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
<b>EPA</b>	NSW Environment Protection Authority
<b>EP&amp;A Act</b>	<i>Environmental Planning and Assessment Act 1979</i>
<b>EP&amp;A Regulation</b>	<i>Environmental Planning and Assessment Regulation 2021</i>
<b>EPL</b>	Environment Protection Licence under the POEO Act
<b>Evening</b>	The period from 6 pm to 10 pm
<b>Feasible</b>	Means what is possible and practical in the circumstances
<b>GPS</b>	Global Positioning System
<b>Incident</b>	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

<b>Laden heavy vehicle</b>	Heavy vehicle transporting quarry products or pre-mixed concrete from the site and/or heavy vehicle transporting rehabilitation materials, aggregates or blending agents to the site
<b>Land</b>	Has the same meaning as the definition of the term in section 1.4 the EP&A Act, except for where the term is used in the noise and air quality conditions in PART B of this consent where it is defined to mean the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
<b>Material harm</b>	<p>Is harm that:</p> <ul style="list-style-type: none"> <li>• involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or</li> <li>• results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)</li> </ul> <p>This definition excludes “harm” that is authorised under either this consent or any other statutory approval’</p>
<b>MEG</b>	Department of Regional NSW – Mining, Exploration and Geoscience
<b>Minimise</b>	Implement all reasonable and feasible mitigation measures to reduce the impacts of the development
<b>Minister</b>	NSW Minister for Planning, or delegate
<b>Minor</b>	Not very large, important or serious
<b>Negligible</b>	Small and unimportant, such as to be not worth considering
<b>Night</b>	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
<b>Non-compliance</b>	An occurrence, set of circumstances or development that is a breach of this consent
<b>Planning Secretary</b>	Planning Secretary under the EP&A Act, or nominee
<b>POEO Act</b>	<i>Protection of the Environment Operations Act 1997</i>
<b>Public infrastructure</b>	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc
<b>Quarrying operations</b>	The extraction, processing, stockpiling and transportation of extractive materials on the site and the associated removal of vegetation, topsoil and overburden
<b>Quarry products</b>	Includes all saleable quarry products, but excludes wastes and rehabilitation material
<b>Reasonable</b>	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
<b>Registered Aboriginal Parties</b>	As described in the <i>National Parks and Wildlife Regulation 2019</i>
<b>Rehabilitation</b>	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
<b>Residence</b>	Existing or approved dwelling at the date of grant of this consent
<b>RFS</b>	NSW Rural Fire Service
<b>Site</b>	The development layout boundary shown in Appendix 2
<b>Southern Extension Area</b>	Extraction boundary defined in the Development Layout
<b>Stripping Activities</b>	The removal of overburden in the Southern Extraction Area and Western Extraction Area. This activity is also a subset of Quarrying Operations.
<b>TfNSW</b>	Transport for NSW
<b>Waste</b>	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
<b>Western Extension Area</b>	Extraction boundary defined in the Development Layout

## SCHEDULE 2

### PART A ADMINISTRATIVE CONDITIONS

#### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

- A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

#### TERMS OF CONSENT

- A2. The development may only be carried out:
- (a) in compliance with the conditions of this consent;
  - (b) in accordance with all written directions of the Planning Secretary; and
  - (c) generally in accordance with the EIS and Development Layout.
- A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:
- (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and
  - (b) the implementation of any actions or measures contained in any such document referred to in condition A3(a).
- A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition A2. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition A2, the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

#### LIMITS OF CONSENT

##### Identification of Approved Extraction Area

- A5. One month before the date of commencement of the development, or other timeframe agreed by the Planning Secretary:
- (a) a registered surveyor must be engaged to mark out the boundaries of the approved extraction areas within the site (as set out in Appendix 2); and
  - (b) the Planning Secretary must be provided with a survey plan of such boundaries and their GPS coordinates.
- A6. The boundaries of the approved extraction areas within the site must be clearly marked in a manner that allows them to be easily identified at all times during the carrying out of quarrying operations.

##### Quarrying Operations

- A7. Quarrying operations may be carried out on the site for a period of 25 years from the date of the commencement of the development.

**Note:** Under this consent, the Applicant is required to decommission and rehabilitate the site and carry out other requirements in relation to quarrying operations. Consequently, this consent will continue to apply in all respects other than to permit the carrying out of quarrying operations until the rehabilitation of the site and other requirements have been carried out to the required standard.

##### Extraction, Importation and Transportation Limits

- A8. Extraction must not be undertaken below a level of 285 metres AHD in the Western Extension Area and 288.5 metres AHD in the Southern Extension Area and must be 2 m above the regional alluvial aquifer.
- A9. The Applicant must not transport more than 500,000 tonnes of quarry products by road from the site in any calendar year.
- A10. The Applicant must not receive at the site more than:
- (a) 3000 tonnes of fly ash in any calendar year; and
  - (b) 3000 tonnes of concrete washout materials in any calendar year.
- Note:** The fly ash and concrete washout materials must only be used for the purposes of blending with basalt products. No other material classified as waste under the EPA Waste Classification Guidelines 2014 (or its latest version) may be received at the site.
- A11. The Applicant must limit heavy vehicles leaving the site to:
- (a) 20 laden trucks per hour; and
  - (b) 121 laden trucks per day.

**Note:** Heavy vehicle movements to and from the site are also controlled by the operating hours specified in condition A12 and provisions in condition B44.

### Hours of Operation

A12. The Applicant must comply with the operating hours set out in Table 1.

**Table 1: Operating hours**

<b>Activity</b>	<b>Permissible Operating Hours</b>
Construction work	<ul style="list-style-type: none"> <li>7 am to 6 pm Monday to Friday</li> <li>8 am to 1 pm Saturday</li> <li>At no time on Sundays or public holidays</li> </ul>
Quarrying operations	<ul style="list-style-type: none"> <li>7 am to 6 pm Monday to Saturday</li> <li>At no time on Sundays or public holidays</li> </ul>
Blasting	<ul style="list-style-type: none"> <li>Once per week between 9 am to 5 pm Monday Friday</li> </ul>
Heavy vehicle loading and road transportation	<ul style="list-style-type: none"> <li>4 am to 6 pm Monday to Saturday</li> <li>At no time on Sundays or public holidays</li> <li>No road haulage between 24 December and 1 January, inclusive</li> <li>No product heavy vehicle haulage along Sheraton Road (from 8:30 am to 9:00 am and 2:45 pm to 3:30 pm during school days) between Boundary Road roundabout and Mitchell Highway.</li> </ul>
Maintenance and environmental management	<ul style="list-style-type: none"> <li>At any time provided that the activity is not audible at any privately owned residence</li> </ul>

A13. The following activities may be carried out outside the hours specified in Table 1.

- delivery or dispatch of materials as requested by Police or other public authorities; and
- emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Department and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

### NOTIFICATION OF COMMENCEMENT

A14. The date of commencement of each of the following phases of the development must be notified to the Department in writing, at least one month before that date:

- commencement of development under this consent;
- commencement of quarrying operations;
- cessation of quarrying operations; and
- any period of suspension of quarrying operations.

### SURRENDER OF EXISTING CONSENTS OR APPROVALS

A15. Within 12 months of the date of commencement of development under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must surrender the existing development consent for the Dubbo Quarry, issued by the former Talbragar Shire Council in accordance with the EP&A Regulation.

A16. Upon the commencement of development under this consent, and before the surrender of the existing development consent required under condition A15, the conditions of this consent prevail to the extent of any inconsistency with the conditions of the existing consent.

**Note:** This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under the former Part 4A of the EP&A Act or Part 6 of the EP&A Act as applies from 1 September 2018. The surrender should not be understood as implying that works legally constructed under a valid consent or approval can no longer be legally maintained or used.



**PLANNING AGREEMENT**

- A17. Within three months of the commencement of quarrying operations or other timeframe agreed by the Planning Secretary, the Applicant must enter into a Planning Agreement with Council in accordance with:
- (a) Division 7.1 of Part 7 of the EP&A Act; and
  - (b) the terms detailed in Table 2.

*Note: Commencement of quarrying operations is detailed by condition A14(b).*

**Table 2: Planning Agreement Contribution**

<b>Item</b>	<b>Contribution Amount and Purpose</b>	<b>Timing</b>
Contribution Part 1	Single lump sum payment of \$600,000 (plus 1 year of CPI) for improvements to Sheraton Road nearby the schools (towards Mitchell Highway), along the proposed transport route.	Payable to Council within 1 year of commencement of the quarrying operations.
Contribution Part 2	Payment to Council of 10c per tonne for maintenance of Sheraton Road, along the proposed transport route	Following commencement of the quarrying operations, to be paid twice per year for quarry product haulage over a six-month period, as agreed with Council.
Indexing	CPI indexed	CPI indexed annually

**COMMUNITY CONSULTATIVE COMMITTEE**

- A18. Within 6 months from the date of commencement of development, a Community Consultative Committee (CCC) must be established for the development in accordance with the Department’s *Community Consultative Committee Guidelines: State Significant Projects* (2019) or latest version.

**Notes:**

- *The CCC is an advisory committee only.*
- *In accordance with the Guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.*

**EVIDENCE OF CONSULTATION**

- A19. Where conditions of this consent require consultation with an identified party, the Applicant must:
- (a) consult with the relevant party prior to submitting the subject document; and
  - (b) provide details of the consultation undertaken including:
    - (i) the outcome of that consultation, matters resolved and unresolved; and
    - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

**STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS**

- A20. With the approval of the Planning Secretary, the Applicant may:
- (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);
  - (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and
  - (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).
- A21. If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

**PROTECTION OF PUBLIC INFRASTRUCTURE**

- A22. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:
- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and

- (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

**Note:** *This condition does not apply to any damage to roads caused as a result of general road usage or otherwise addressed by contributions required by condition A17 of this consent.*

#### **DEMOLITION**

- A23. All demolition must be carried out in accordance with *Australian Standard AS 2601-2001 The Demolition of Structures* (Standards Australia, 2001).

#### **STRUCTURAL ADEQUACY**

- A24. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA.

**Notes:**

- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
- *The Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 sets out the requirements for the certification of the development.*

#### **OPERATION OF PLANT AND EQUIPMENT**

- A25. All plant and equipment used on site, or to monitor the performance of the development must be:

- (a) maintained in a proper and efficient condition; and  
(b) operated in a proper and efficient manner.

#### **COMPLIANCE**

- A26. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

#### **APPLICABILITY OF GUIDELINES**

- A27. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.
- A28. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

#### **PRODUCTION DATA**

- A29. Each year, from the commencement of quarrying operations, the Applicant must provide calendar year quarry production data to MEG by no later than 30 January.
- A30. The data must be provided using the relevant standard form and a copy of the data must be included in the Annual Review (required under condition D9).

## PART B SPECIFIC ENVIRONMENTAL CONDITIONS

### NOISE

#### Operational Noise Criteria

- B1. The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 3 at any residence on privately-owned land.

**Table 3:** Operational noise criteria dB(A)

Noise Assessment Location	Daytime stripping $L_{Aeq}$ (15 min)	Daytime all other quarrying operations $L_{Aeq}$ (15 min)	Night $L_{Aeq}$ (15 min)	Night $L_{Amax}$
R1 <sup>1</sup>	49	49	40	52
R2	46	44	35	52
R3	43	43	37	52
R4	41	41	35	52
R5	40	41	35	52
R23	42	42	37	52
All other non-project related privately owned residences	40	40	35	52

**Notes:**

- To identify the locations referred to in Table 3, refer to Appendix 3
- <sup>1</sup>Holcim currently has a negotiated agreement in place with the landowner of this residential property

- B2. Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NSW Noise Policy for Industry* (EPA, 2017).
- B3. The noise criteria in Table 3 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

#### Noise Operating Conditions

- B4. The Applicant must:
- (a) limit stripping activities to the daytime and to a maximum of 8 weeks per year, unless otherwise agreed by the Planning Secretary;
  - (b) take all reasonable steps to minimise all noise from construction and operational activities, including low frequency noise and other audible characteristics, as well as road noise associated with the development;
  - (c) operate a noise management system commensurate with the risk of impact, such as using a combination of predictive meteorological forecasting and noise monitoring data to:
    - (i) guide the day to day planning of quarrying operations, and the implementation of proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent; and
    - (ii) modify or stop operations on the site to ensure compliance with the relevant conditions of this consent;
  - (d) take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions; when the noise criteria in this consent do not apply; and
  - (e) carry out regular attended noise monitoring on an at least an annualised basis, unless otherwise agreed with or directed by the Planning Secretary, to determine whether the development is complying with the relevant conditions of this consent.

#### Noise Management Plan

- B5. The Applicant must prepare a Noise Management Plan for the development. This plan must:
- (a) be prepared by a suitably qualified and experienced person/s;
  - (b) be prepared in consultation with the EPA;
  - (c) describe the measures to be implemented to ensure:
    - (i) compliance with the noise criteria and operating conditions in this consent; and
    - (ii) best practice management is being employed;

- (d) include a monitoring program that:
- (i) uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development;
  - (ii) includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time;
  - (iii) monitors noise at the nearest and/or most affected residences;
  - (iv) adequately supports the noise management system; and
  - (v) includes a protocol for identifying any noise-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of these events.

B6. The Applicant must not commence construction or quarrying operations until the Noise Management Plan is approved by the Planning Secretary.

B7. The Applicant must implement the approved Noise Management Plan.

## BLASTING

### Blasting Criteria

B8. The Applicant must ensure that blasting on the site does not cause exceedances of the criteria in Table 4.

**Table 4:** *Blasting criteria*

<b>Location</b>	<b>Airblast overpressure (dB(Lin Peak))</b>	<b>Ground Vibration (mm/s)</b>	<b>Allowable exceedance</b>
Any residence on privately-owned land	120	10	0%
	115	5	5% of the total number of blasts over a calendar year

B9. The blasting criteria in Table 4 does not apply if the Applicant has an agreement with the owner/s of the relevant residence to exceed the blasting criteria, and the Applicant has advised the Department in writing if the terms of this agreement.

### Blasting Frequency

B10. The Applicant may carry out a maximum of one blast per week.

B11. Condition B10 does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or to blast misfires or to blasts required to ensure the safety of the mine, its workers or the general public.

**Notes:**

- For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the quarry.
- For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast.

### Property Inspections

B12. If the Applicant receives a written request from the owner of any privately-owned land within 1 kilometre of any approved extraction areas on the site for a property inspection to establish the baseline condition of any buildings and structures on their land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:

- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
  - (i) establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and
  - (ii) identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures; and
- (b) give the landowner a copy of the new or updated property inspection report.

B13. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Planning Secretary for resolution.

### Property Investigations

B14. If the owner of any privately-owned land within 2 kilometres of any approved extraction area on the site or any other landowner where the Planning Secretary is satisfied an investigation is warranted, claims in writing that buildings or

structures on their land have been damaged as a result of blasting on the site, then within 2 months of receiving this written claim the Applicant must:

- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
- (b) give the landowner a copy of the property investigation report.

B15. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Planning Secretary.

B16. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Planning Secretary for resolution.

### Blast Operating Conditions

B17. During blasting operations, the Applicant must:

- (a) take all reasonable steps to:
  - (i) ensure the safety of people and livestock from blasting impacts of the development;
  - (ii) protect public or private infrastructure and property in the vicinity of the site from blasting damage associated with the development;
  - (iii) minimise blast-related dust and fume emissions; and
  - (iv) avoid blasting during unfavourable climatic conditions;
- (b) ensure compliance with the blasting criteria and operating conditions of this consent;
- (c) carry out regular blast monitoring to evaluate whether the development is complying with the relevant conditions of this consent;
- (d) identify any blast-related exceedance, incident or non-compliance and notify the Department and relevant stakeholders of these events;
- (e) ensure public notification occurs to enable members of the public, particularly surrounding residents, to get up-to-date information on the proposed blasting schedule; and
- (f) investigate and respond to blast-related complaints.

### AIR QUALITY

#### Odour

B18. The Applicant must ensure that no offensive odours are emitted from the site, as defined under the POEO Act.

#### Air Quality Criteria

B19. The Applicant must ensure that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 5 at any residence on privately-owned land.

**Table 5:** Air quality criteria

<b>Pollutant</b>	<b>Averaging period</b>	<b>Criterion</b>
Particulate matter <10 µm (PM <sub>10</sub> )	Annual	<sup>a, c</sup> 25 µg/m <sup>3</sup>
	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
Particulate matter <2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a, c</sup> 8 µg/m <sup>3</sup>
	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>
Total suspended particulate (TSP) matter	Annual	<sup>a, c</sup> 90 µg/m <sup>3</sup>

**Notes:**

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

<sup>c</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.

B20. The air quality criteria in Table 5 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or infrastructure to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

## **Air Quality Operating Conditions**

B21. The Applicant must:

- (a) take all reasonable steps to:
  - (i) minimise odour, fume, greenhouse gas and dust (including PM<sub>10</sub> and PM<sub>2.5</sub>) emissions of the development;
  - (ii) minimise any visible off-site air pollution generated by the development; and
  - (iii) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;
- (b) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note c to Table 5 above);
- (c) carry out routine air quality monitoring or as directed by the Planning Secretary, to determine whether the development is complying with the relevant conditions in this consent. All monitoring must be in accordance with the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (EPA, 2022); and
- (d) regularly assess meteorological and air quality monitoring data to:
  - (i) guide the day-to-day planning of quarrying operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent; and
  - (ii) relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.

## **Air Quality Management Plan**

B22. The Applicant must prepare an Air Quality Management Plan for the development. This plan must:

- (a) be prepared by a suitably qualified and experienced person/s;
- (b) be prepared in consultation with the EPA;
- (c) describe the measures to be implemented to ensure:
  - (i) compliance with the air quality criteria and operating conditions in this consent;
  - (ii) best practice management is being employed; and
  - (iii) air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;
- (d) include an air quality monitoring program, undertaken in accordance with the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (EPA, 2022), that:
  - (i) is capable of evaluating the performance of the development against the air quality criteria;
  - (ii) adequately supports the air quality management system; and
  - (iii) includes a protocol for identifying any air quality-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of these events.

B23. The Applicant must not commence construction or quarrying operations until the Air Quality Management Plan is approved by the Planning Secretary.

B24. The Applicant must implement the approved Air Quality Management Plan

## **SOIL AND WATER**

### **Water Supply and Licensing**

B25. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of the development, within the limits of consent set out in Part A of Schedule 2, to match its available water supply.

B26. The Applicant must obtain any necessary Water Access Licence (WAL) for the development under the *Water Management Act 2000*.

B27. Should the maximum annual surface and groundwater water take exceed the entitlements in the existing WALs, the Applicant must acquire the necessary licence shares from the appropriate water sources in consultation with DPE Water.

B28. The Applicant must report on the surface and groundwater take at the quarry each year in the Annual Review, separating water taken under each water access licence.

**Note:** *Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary water licences for the development.*

### Compensatory Water Supply

- B29. The Applicant must provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than an impact that is minor or negligible) as a result of the development, in consultation with DPE Water, and to the satisfaction of the Planning Secretary.
- B30. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner.
- B31. If the Applicant and the landowner cannot agree on whether the loss of water is to be attributed to the development or the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.
- B32. If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide compensation, to the satisfaction of the Planning Secretary.

**Note:** *The Water Management Plan (see condition B39) is required to include trigger levels for investigating potentially adverse impacts on water supplies.*

### Surface Water Diversions

- B33. Within 12 months of the date of commencement of quarrying operations, unless otherwise agreed by the Planning Secretary, the Applicant must install a clean water diversion as shown in Appendix 2. The clean water diversion must be:
- (a) designed to prevent water from the upstream catchments entering the existing extraction area;
  - (b) designed in accordance with *Managing Urban Stormwater Volume 1 (Landcom 2004)* and *Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries (DECC 2008)*; and
  - (c) detailed within the Water Management Plan in condition B39.

### Water Discharge Management

- B34. The Applicant must ensure that all surface water discharges from the site comply with the relevant provisions of the POEO Act, including any discharge limits (both volume and quality) set for the development in any EPL.
- B35. Within 12 months of the completion of the clean water diversion installation required by conditions B33, the Applicant must prepare a Discharge Characterisation Report for the development and submit it to the Planning Secretary for information. This report must:
- (a) be prepared by suitably qualified and experienced person/s whose appointment has been approved by the Planning Secretary
  - (b) be prepared in consultation with the EPA and DPE Water;
  - (c) include:
    - (i) measures to avoid the need for discharges as far as reasonable and feasible;
    - (ii) analysis of the frequency and volume of discharges during dry, median (or average) and wet weather conditions;
    - (iii) sufficient baseline water quality data from the East Pit;
    - (iv) characterisation of the expected water quality and frequency of proposed discharges;
    - (v) assessment of the impact of discharges to Eulomogo Creek; and
    - (vi) measures to prevent pollution of Eulomogo Creek and any other potential downstream impacts.

### Sediment Basins

- B36. The Applicant must design, locate and construct the sediment basins in consultation with DPE Water, in accordance with:
- (a) the *NSW Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)*; and
  - (b) *Managing Urban Stormwater Volume 1 (Landcom 2004)* and *Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries (DECC 2008)*.

The designs must be included in the Water Management Plan required under condition B39.

### Eulomogo Creek Crossing

- B37. The Applicant must construct the creek crossing on the Eulomogo Creek at the location shown in the Development Layout in Appendix 2. The Applicant must engage a suitably qualified person/s approved by the Planning Secretary to undertake the detailed design of the creek crossing in consultation with DPE Water. The design must include:

- (a) consideration of *NSW Guidelines for Controlled Activities on Waterfront Land* (NRAR 2018);
- (b) rectangular box culverts;
- (c) minimise flooding impacts to surrounding land; and
- (d) be submitted to the Planning Secretary prior to construction works commencing.

B38. The Applicant must maintain the box culverts in the creek crossing to prevent clogging with debris and ensure impacts to hydrology, hydraulics and geomorphology in the Eulomogo Creek are minimised.

### **Water Management Plan**

B39. The Applicant must prepare a Water Management Plan for the development. This plan must:

- (a) be prepared by suitably qualified and experienced person/s whose appointment has been approved by the Planning Secretary;
- (b) be prepared in consultation with the EPA, DPE Water and Council; and
- (c) include a:
  - (i) **Site Water Balance** that:
    - includes details of:
      - sources and security of water supply;
      - water use and management on the site;
      - any off-site discharges or water transfers;
      - metering of captured water volumes in all water storages and measuring of volumes of water pumped between water storages; and
      - reporting procedures, including the annual preparation of a Site Water Balance; and
    - uses accurately measured volumes of captured water and water pumped around the water storages within the development's water management system and measured groundwater inflows to the water storages; and
    - minimises clean and potable water use on the site;
  - (ii) **Surface Water Management Plan** that includes:
    - detailed baseline data on surface water flows, water quality, riparian condition and geomorphic stability in watercourses and/or water bodies that could potentially be affected by the development;
    - surface water impact assessment criteria, including trigger levels for investigating any potentially adverse impacts, and surface water management performance measures;
    - a detailed description of the surface water management system on the site, including the:
      - clean water diversion system;
      - erosion and sediment controls;
      - dirty water management system; and
      - water storages;
    - a program to monitor and report on:
      - any surface water discharges;
      - stream stability, riparian condition and geomorphic processes in receiving watercourses;
      - the effectiveness of the water management system;
      - surface water flows and quality in watercourses and/or waterbodies that could potentially be impacted by the development; and
    - a protocol for identifying and investigating any exceedances of the surface water impact assessment criteria and for notifying the Department and relevant stakeholders of these events.
  - (iii) **Groundwater Management Plan** that includes:
    - detailed baseline data of groundwater levels, yield and quality for groundwater resources potentially impacted by the development, including groundwater supply for other water users and groundwater dependent ecosystems;
    - a detailed description of the groundwater management system;
    - groundwater performance criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
    - a program to monitor and report on:
      - groundwater levels, yield and quality of groundwater resources potentially impacted by the development;
      - groundwater inflows into the extraction areas;



- impacts of the development on groundwater dependent ecosystems; and
- impacts of the development on groundwater supply for other water users;
- a protocol for identifying and investigating any exceedances of the groundwater performance criteria and for notifying the Department and relevant stakeholders of these events; and
- a protocol to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the extraction areas including details to monitor and verify water take.

B40. The Applicant must not commence quarrying operations until the Water Management Plan is approved by the Planning Secretary.

B41. The Applicant must implement the approved Water Management Plan.

## **TRANSPORT**

### **Monitoring of Product Transport**

B42. The Applicant must keep accurate records of all laden heavy vehicle movements from the site (including hourly heavy vehicle movements) and provide a summary of these records to the Department on request.

### **Road Upgrades**

B43. The Applicant is required to enter into a Works Authorisation Deed (WAD) with Council before finalising the design or undertaking any construction work within or connecting to the road reserve of Sheraton Road.

### **Transport Operating Conditions**

B44. The Applicant must:

- (a) adhere to the approved haulage route shown in Appendix 4, unless otherwise agreed by the Planning Secretary in consultation with Council;
- (b) ensure that all laden heavy vehicles entering or exiting the site have their loads covered;
- (c) ensure that no heavy vehicles arrive at the site prior to 4:00 am;
- (d) take all reasonable steps to minimise traffic safety issues and disruption to local road users; and
- (e) take all reasonable steps to ensure that appropriate signage is displayed on all heavy vehicles used to transport quarry products from the development so they can be easily identified by other road users.

### **Traffic Management Plan**

B45. The Applicant must prepare a Traffic Management Plan for the development. This plan must:

- (a) be prepared by a suitably qualified and experienced person/s approved by the Planning Secretary;
- (b) be prepared in consultation with TfNSW and Council;
- (c) include details of:
  - (i) all transport routes and traffic types to be used for development-related traffic, including identification of bridge load restrictions;
  - (ii) processes in place for the control of heavy vehicle movements entering and exiting the site;
  - (iii) measures to be implemented to:
    - comply with the traffic operating conditions and other traffic related conditions of this consent;
    - manage the traffic impacts from contractors and sub-contractors;
    - minimise traffic safety issues and disruption to local road users, including minimising potential for conflict with school operations including school buses;
    - minimise the tracking of material onto the surface of public roads from vehicles exiting the site;
    - monitor driver behaviour; and
    - participate in transport management investigations initiated by Council;
- (d) include a Drivers' Code of Conduct that includes procedures to ensure that drivers:
  - (i) adhere to posted speed limits or other required travelling speeds;
  - (ii) adhere to designated transport routes and travel times; and
  - (iii) implement safe and quiet driving practices; and
- (e) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct.

B46. The Applicant must not commence quarrying operations until the Traffic Management Plan is approved by the Planning Secretary.

B47. The Applicant must implement the approved Traffic Management Plan.

## BIODIVERSITY

### Biodiversity Offset Strategy

B48. The Applicant must retire the biodiversity Ecosystem Credits specified in Table 6 prior to commencing vegetation clearing under the consent.

The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offset Scheme of the BC Act<sup>1</sup>.

**Table 6:** Biodiversity ecosystem credit requirements

<b>Credit Type</b>	<b>Disturbance Area (ha)</b>	<b>Number of Credits</b>
<b>Ecosystem Credits</b>		
PCT 599 - Blakeley's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion_medium	0.64	21
PCT 599 – Blakeley's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion_other	1.25	37
PCT 599 – Blakeley's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion_poor	1.18	24
PCT 599 – Blakeley's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion_Derived Native Grass	2.75	45
6 Paddock trees assigned to the PCT 599 – Blakeley's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	NA	5
<b>Total</b>	<b>5.82</b>	<b>132</b>

<sup>1</sup> The available credit retirement options for the development include purchase and retirement of open market available biodiversity credits, payment into the Biodiversity Conservation Fund or establishment of a Biodiversity Stewardship Site.

### Biodiversity Management Plan

B49. The Applicant must prepare a Biodiversity Management Plan for the development. The plan must:

- (a) be prepared by suitably qualified and experienced person/s approved by the Planning Secretary;
- (b) be prepared in consultation with BCD;
- (c) describe the short, medium, and long-term completion criteria to:
  - (i) implement the Biodiversity Offset Strategy required under condition B48;
  - (ii) manage any remnant vegetation and fauna habitat; and
  - (iii) manage biodiversity values within existing and future rehabilitation areas;
- (d) include a detailed description of the management measures to be implemented on the site to:
  - (i) enhance the quality of existing vegetation, vegetation connectivity and fauna habitat, including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub-canopy, understorey and ground strata;
  - (ii) maximise the salvage of resources, including tree hollows and soil resources, for beneficial reuse including fauna habitat enhancement;
  - (iii) minimise impacts on tree hollows where reasonable and feasible;
  - (iv) minimise impacts on fauna, including undertaking pre-clearance surveys;
  - (v) manage potential indirect impacts on threatened plant and animal species, endangered ecological communities; and
  - (vi) control unrestricted access, weeds and feral pests, with consideration of actions identified in relevant threat abatement plans;
  - (vii) minimise the amount of clearing within the approved disturbance area where reasonable and feasible;
  - (viii) protect vegetation and fauna habitat outside the approved disturbance area;
  - (ix) protecting the Eulomogo Creek riparian vegetation;

- (x) establish and/or retain vegetation screening to minimise the visual impacts of the development on surrounding receivers;
  - (xi) control erosion;
  - (xii) manage the collection and propagation of seed; and
  - (xiii) manage bushfire hazards;
  - (e) include a seasonally-based program to monitor and report on the effectiveness of the above measures and to progressively include improvements in the program that could be implemented to improve biodiversity outcomes;
  - (f) include remedial actions when the monitoring shows the completion criteria are not being met or when management measures are not being effectively implemented; and
  - (g) include details of who would be responsible for monitoring, reviewing, and implementing the plan.
- B50. The Applicant must not commence construction or quarrying operations under the consent until the Biodiversity Management Plan is approved by the Planning Secretary.
- B51. The Applicant must implement the approved Biodiversity Management Plan.

## **HERITAGE**

### **Protection of Aboriginal Heritage**

- B52. The Applicant must ensure that the development does not cause any direct or indirect impact on any identified Aboriginal object located outside the approved disturbance areas, beyond those predicted in the document/s listed in condition A2(c).
- B53. If any previously unknown Aboriginal object or Aboriginal place is discovered on the site, or suspected to be on the site:
- (a) all work in the immediate vicinity of the object or place must cease immediately;
  - (b) a 10-metre buffer area around the object or place must be cordoned off; and
  - (c) Heritage NSW and the Department must be contacted immediately.
- B54. Work in the immediate vicinity of any newly discovered Aboriginal object or place may only recommence if:
- (a) the potential Aboriginal object or place is confirmed by Heritage NSW in consultation with the Registered Aboriginal Parties, not to be an Aboriginal object or Aboriginal place; or
  - (b) the Planning Secretary is satisfied as to the measures to be implemented in respect of the Aboriginal object or place and makes a written direction in that regard.
- B55. The Applicant must ensure:
- (a) salvage of known Aboriginal objects within the disturbance footprint occurs in accordance with the procedures and commitments detailed in the document/s listed in condition A2(c);
  - (b) that all known Aboriginal objects or Aboriginal places on the site are properly recorded, those records are kept up to date and are reported to the Aboriginal Heritage Information Management System;
  - (c) all workers receive suitable Aboriginal cultural heritage training/inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or places, and that suitable records are kept of these inductions;
  - (d) that the Applicant facilitates ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site; and
  - (e) the appropriate care, control and storage of Aboriginal objects salvaged on the site, both during the life of the development and in the long-term occurs in consultation with Registered Aboriginal Parties.

## **REHABILITATION**

### **Rehabilitation Objectives**

- B56. The Applicant must rehabilitate the site to the satisfaction of the Planning Secretary. This rehabilitation must be consistent with the rehabilitation strategy set out in the EIS and the conceptual final landform plan in Appendix 5, and must comply with the objectives in Table 7.

**Table 7: Rehabilitation objectives**

<b>Feature</b>	<b>Objective</b>
All areas of the site affected by the development	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Hydraulically and geotechnically stable</li> <li>• Non-polluting</li> <li>• Fit for the intended post-quarrying operations land use(s)</li> <li>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land</li> </ul>
Surface infrastructure areas	<ul style="list-style-type: none"> <li>• All infrastructure decommissioned and removed, unless otherwise agreed by the Planning Secretary</li> </ul>
Quarry pits and benches	<ul style="list-style-type: none"> <li>• Long term stable</li> <li>• Landscaped and vegetated using native species described in the EIS.</li> <li>• Designed and managed to withstand flooding</li> </ul>
Final voids	<ul style="list-style-type: none"> <li>• Minimise the size, depth and slope of the batters of the final voids</li> <li>• Managed to protect water quality and reduce salinity impacts</li> </ul>

### **Progressive Rehabilitation**

B57. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.

**Note:** *It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*

### **Rehabilitation Management Plan**

B58. Within 12 months of the date of commencement of development under this consent, the Applicant must prepare a Rehabilitation Management Plan for the development. This plan must:

- (a) be prepared:
  - (i) by suitably qualified and experienced person/s, with relevant experience in final landform hydrology and ecology and approved by the Planning Secretary; and
  - (ii) in consultation with Council and DPE Water;
- (b) provide detailed plans of the final landform, that demonstrates that the development will be consistent with the objectives in Table 7 and the nominated land uses;
- (c) include a conceptual closure plan that considers the hydrological and hydraulic impacts of the final void/s;
- (d) include detailed plans for scheduling of the progressive rehabilitation;
- (e) include detailed performance and completion criteria for evaluating the performance of rehabilitation of the site;
- (f) describe the measures needed to achieve the criteria in clause (e), including triggers for remedial action, where these performance or completion criteria are not met; and
- (g) include a program to monitor, independently audit and report on progress against the criteria in clause (e) and the effectiveness of the measures in clause (f).

B59. The Applicant must implement the Rehabilitation Management Plan as approved by the Planning Secretary.

### **Rehabilitation Bond**

B60. Within 6 months of the approval of the Rehabilitation Management Plan, the Applicant must lodge a Rehabilitation Bond with the Department to ensure that the rehabilitation of the site is undertaken in accordance with the performance and completion criteria set out in the plan and the relevant conditions of this consent. The sum of the bond must be an amount agreed to by the Planning Secretary and determined by:

- (a) calculating the cost of rehabilitating all existing and immediately proposed disturbed areas of the site (taking into account likely surface disturbance over the next 3 years of quarrying operations); and
- (b) employing a suitably qualified, independent and experienced person to verify the calculated costs.

- B61. The calculation of the Rehabilitation Bond must be submitted to the Department for approval at least 1 month prior to the proposed lodgement of the bond.
- B62. The Rehabilitation Bond must be reviewed and if required, an updated bond must be lodged with the Department within 3 months following:
- (a) any update or revision to the Rehabilitation Management Plan;
  - (b) completion of an Independent Environmental Audit in which recommendations relating to rehabilitation have been made; or
  - (c) in response to a request by the Planning Secretary,
- B63. If rehabilitation of this site is completed generally in accordance with the relevant performance and completion criteria, to the satisfaction of the Planning Secretary, the Planning Secretary will release the bond.
- B64. If rehabilitation of the site is not completed generally in accordance with the relevant performance and completion criteria, the Planning Secretary will call in all, or part of, the bond, and arrange for the completion of the relevant works.

#### **VISUAL**

- B65. The Applicant must:
- (a) take all reasonable steps to minimise the visual and off-site lighting impacts of the development;
  - (b) ensure that all external lighting associated with the development complies with relevant Australian Standards including *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*;
  - (c) ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape; and
  - (d) take all reasonable steps to shield views of quarrying operations and associated equipment from users of public roads and privately-owned residences.

#### **WASTE**

- B66. The Applicant must:
- (a) manage onsite sewage treatment and disposal in accordance with the requirements of an applicable EPL and/or Council approval;
  - (b) classify all waste in accordance with the *Waste Classification Guidelines* (EPA, 2014);
  - (c) minimise the waste generated by the development;
  - (d) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and
  - (e) monitor and report on waste minimisation and management in the Annual Review referred to in condition D9.
- B67. Except as expressly permitted in an applicable EPL, specific resource recovery order or exemption under the *Protection of the Environment Operations (Waste) Regulation 2014*, the Applicant must not receive waste at the site for storage, treatment, processing, reprocessing or disposal.

#### **LIQUID STORAGE**

- B68. The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.

#### **DANGEROUS GOODS**

- B69. The Applicant must ensure that the storage, handling, and transport of dangerous goods is done in accordance with the latest version of the Australian Standards, particularly *AS 1940-2004 The storage and handling of flammable and combustible liquids* (Standards Australia, 2004) and *AS/NZS 1596:2014 The storage and handling of LP Gas* (Standards Australia, 2014), and the *Australian Dangerous Goods Code*.

#### **BUSHFIRE MANAGEMENT**

- B70. The Applicant must:
- (a) ensure that the development provides for asset protection in accordance with the relevant requirements in the *Planning for Bushfire Protection* (RFS, 2019) guideline and ensure that there is suitable equipment to respond to any fires on the site; and
  - (b) assist the RFS and emergency services to the extent practicable if there is a fire in the vicinity of the site.

## PART C ADDITIONAL PROCEDURES

### ADDITIONAL MITIGATION UPON REQUEST

- C1. Upon receiving a written request for mitigation from the owner of any residence on the privately-owned land listed in Table 8, 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, 2018). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise impacts of the development. The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of quarrying operations.

**Table 8:** Land subject to mitigation upon request

<b>Mitigation Basis</b>	<b>Land</b>
Noise	Receiver R2, as shown on the figure in Appendix 3
Noise	Receiver R3, as shown on the figure in Appendix 3

- C2. If within 3 months of receiving a request for additional mitigation from the owner, 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 Planning Secretary for resolution.
- C3. For the life of the development, the Applicant must continue to contribute to reasonable maintenance and recurrent operating costs associated with the mitigation measures installed at privately-owned residences under the development.

### NOTIFICATION OF LANDOWNERS/TENANTS

Within one month of the date of this consent, the Applicant must notify in writing the owner of the residences on the land listed in Table 8 that they are entitled to ask the Applicant to install additional mitigation measures at the residence.

### NOTIFICATION OF EXCEEDANCES

- C4. As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in PART B of this consent, the Applicant must:
- provide to any affected landowners and tenants; and
  - publish on its website
- the full details of the exceedance.
- C5. For any exceedance of any air quality criterion in PART B of this consent, 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).

### INDEPENDENT REVIEW

- C6. If a landowner considers the development to be exceeding any noise, blasting or air quality criterion in PART B of this consent, they may ask the Planning Secretary in writing for an independent review of the impacts of the development on their land.
- C7. If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.
- C8. If the Planning Secretary is satisfied that an independent review is warranted, within 3 months of the Planning Secretary’s decision, or as otherwise agreed by the Planning Secretary and the landowner, the Applicant must:
- commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:
    - consult with the landowner to determine their concerns;
    - conduct monitoring to determine whether the development is complying with the relevant criteria in PART B of this consent; and
    - if the development is not complying with any relevant criterion, identify measures that could be implemented to ensure compliance with that criterion;
  - give the Planning Secretary and landowner a copy of the independent review; and
  - comply with any written requests made by the Planning Secretary to implement any findings of the review.

## PART D ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

### ENVIRONMENTAL MANAGEMENT

#### Environmental Management Strategy

- D1. An Environmental Management Strategy must be prepared for the development to the satisfaction of the Planning Secretary. This strategy must:
- (a) provide the strategic framework for environmental management of the development;
  - (b) identify the statutory approvals that apply to the development;
  - (c) set out the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
  - (d) set out the procedures to be implemented to:
    - (i) keep the local community and relevant agencies informed about the operation and environmental performance of the development;
    - (ii) receive record, handle and respond to complaints;
    - (iii) resolve any disputes that may arise during the course of the development;
    - (iv) respond to any non-compliance and any incident;
    - (v) respond to emergencies; and
  - (e) include:
    - (i) references to any strategies, plans and programs approved under the conditions of this consent; and
    - (ii) a clear plan depicting all the monitoring to be carried out under the conditions of this consent.
- D2. The Applicant must not commence construction or quarrying operations until the Environmental Management Strategy is approved by the Planning Secretary.
- D3. The Applicant must implement the approved Environmental Management Strategy.

#### Management Plan Requirements

- D4. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:
- (a) a summary of relevant background or baseline data;
  - (b) details of:
    - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
    - (ii) any relevant limits or performance measures and criteria; and
    - (iii) 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 to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;
  - (d) a program to monitor and report on the:
    - (i) impacts and environmental performance of the development; and
    - (ii) effectiveness of the management measures set out pursuant to condition A2(c);
  - (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:
    - (i) incident, non-compliance or exceedance of the impact assessment criteria or performance criteria;
    - (ii) complaint; or
    - (iii) failure to comply with statutory requirements; and
  - (h) a protocol for periodic review of the plan.

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

### REVISION OF STRATEGIES, PLANS AND PROGRAMS

- D5. Within three months of:
- (a) the submission of an incident report under condition D7;
  - (b) the submission of an Annual Review under condition D9;

- (c) the submission of an Independent Environmental Audit under condition D11;
- (d) the approval of any modification of the conditions of this consent; or
- (e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review,

the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.

- D6. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.

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

## REPORTING AND AUDITING

### Incident Notification

- D7. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing through the Department's Major Projects website and identify the development (including the development application number and name) and set out the location and nature of the incident.

### Non-Compliance Notification

- D8. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to through the Department's Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

**Note:** *A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

### Annual Review

- D9. By the end of March in each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:
- (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
  - (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:
    - (i) relevant statutory requirements, limits or performance measures/criteria;
    - (ii) requirements of any plan or program required under this consent;
    - (iii) monitoring results of previous years; and
    - (iv) relevant predictions in the documents listed condition A2;
  - (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
  - (d) evaluate and report on:
    - (i) the effectiveness of the noise and air quality management systems; and
    - (ii) compliance with the performance measures, criteria and operating conditions in this consent;
  - (e) identify any trends in the monitoring data over the life of the development;
  - (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
  - (g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.
- D10. Copies of the Annual Review must be submitted to Council and DPE Water and made available to the CCC and any interested person upon request.

### Independent Environmental Audit

- D11. Within one year of the commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:
- (a) be led and conducted by a suitably qualified, experienced and independent team of experts, whose appointment has been approved by the Planning Secretary;



- (b) be carried out in 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, water licences and EPL for the development (including any assessment, strategy, plan or program required under these approvals);
- (d) review the adequacy of any approved strategy, plan or program required under this consent and the other abovementioned approvals;
- (e) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under this consent and the other abovementioned approvals; and
- (f) be conducted and reported to the satisfaction of the Planning Secretary.

D12. Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.

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

### **Monitoring and Environmental Audits**

D13. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

For the purposes of this condition, as set out in the EP&A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.

D14. Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in PART B of this consent, providing that these representative monitoring locations are set out in the respective management plan/s.

### **ACCESS TO INFORMATION**

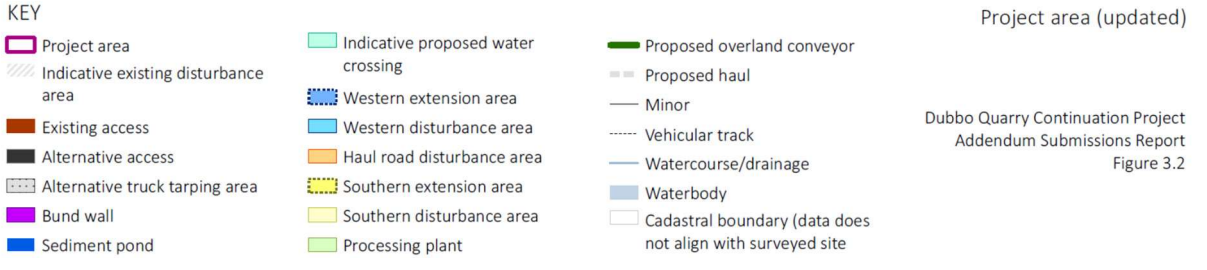
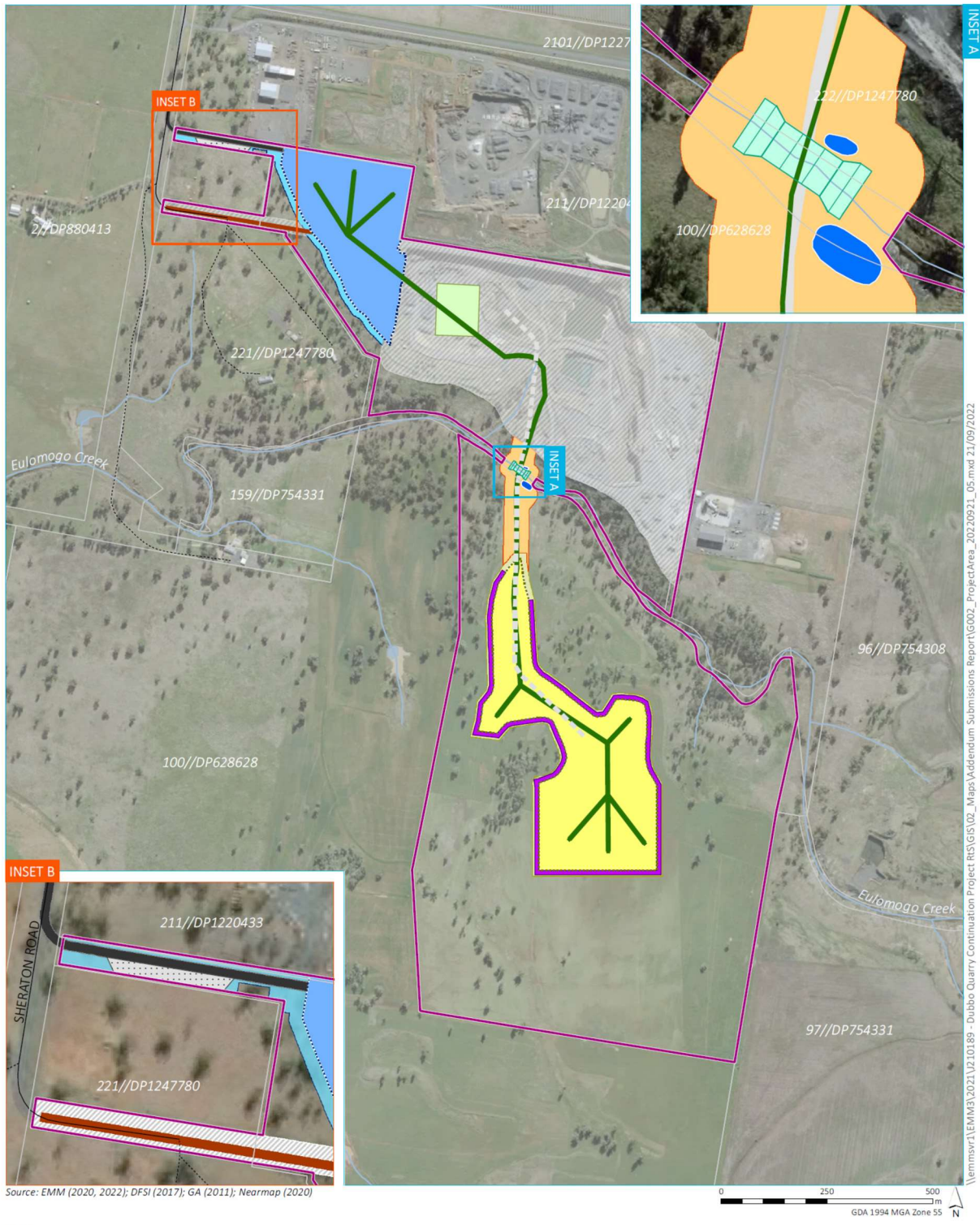
D15. Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must:

- (a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:
  - (i) the document/s listed in A2;
  - (ii) all current statutory approvals for the development;
  - (iii) all approved strategies, plans and programs required under the conditions of this consent;
  - (iv) minutes of CCC meetings;
  - (v) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;
  - (vi) 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;
  - (vii) a summary of the current stage and progress of the development;
  - (viii) contact details to enquire about the development or to make a complaint;
  - (ix) a complaints register, updated monthly;
  - (x) the Annual Reviews of the development;
  - (xi) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant’s response to the recommendations in any audit report;
  - (xii) any other matter required by the Planning Secretary; and
- (b) keep such information up to date, to the satisfaction of the Planning Secretary.

**APPENDIX 1: SCHEDULE OF LAND**

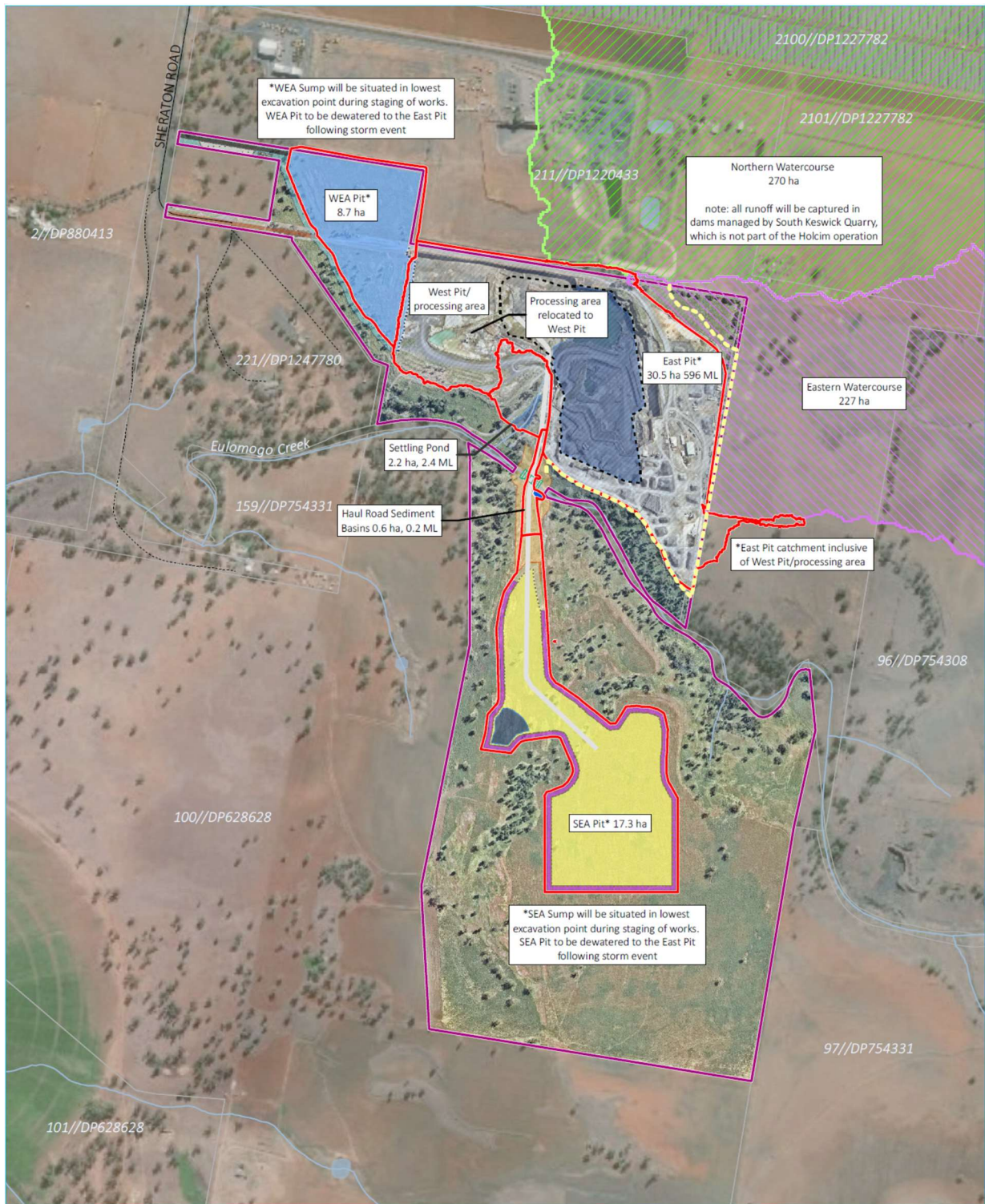
<b><i>Lot</i></b>	<b><i>DP</i></b>
222	1247780
Part of 100	628628
Part of 221	1247780
<b><i>Natural Feature</i></b>	
Part of Eulomogo Creek, shown in Appendix 2	

## APPENDIX 2: DEVELOPMENT LAYOUT



**Figure 1: Development layout (note for culvert design refer to condition B37)**





Source: EMM (2020, 2023); DFSI (2017); Nearmap (2020)

**KEY**

- |                                      |                                |  |
|--------------------------------------|--------------------------------|--|
| Project area                         | Alternative access road        | Southern disturbance area  |
| Proposed sub catchment               | Alternative truck tarping area | Early schematic diversion drain consideration (other drain options are under consideration and may be pursued) |
| The Eastern Watercourse - 227 ML     | Existing access road           | Minor road   |
| The Northern Watercourse - 270 ML    | Proposed haul road             | Vehicular track  |
| Proposed water management dams       | Western extension area         | Watercourse/drainage line  |
| Proposed sedimentation pond          | Western disturbance area       | Waterbody  |
| Indicative existing disturbance area | East pit (extraction boundary) | Cadastral boundary (data does not align with surveyed site boundary)   |
| Indicative proposed water crossing   | Haul road disturbance area     |  |
| Bund wall                            | Southern extension area        |  |

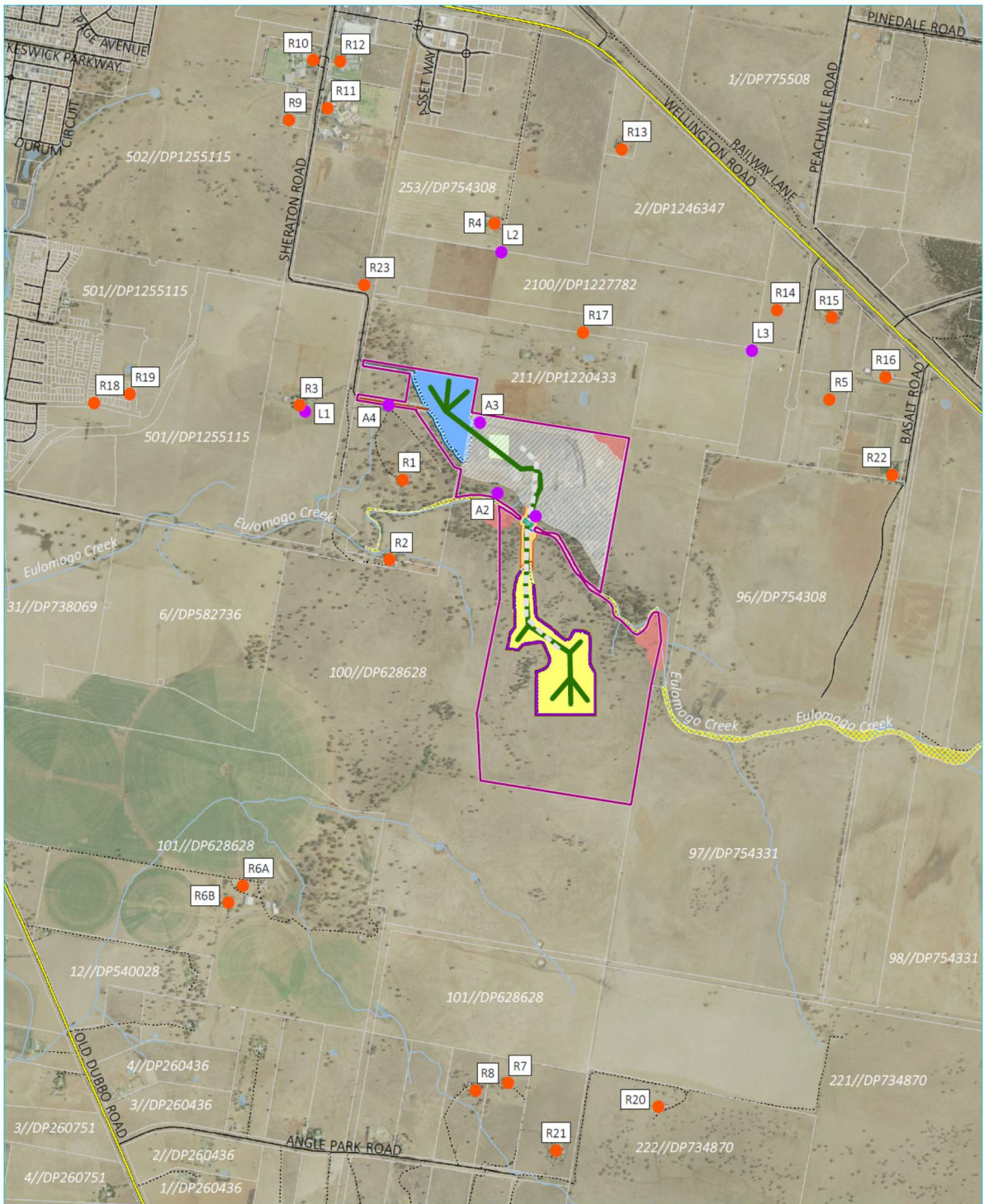
**Proposed water management system layout**

Dubbo Quarry Continuation Project  
Surface water assessment  
Figure 5.2

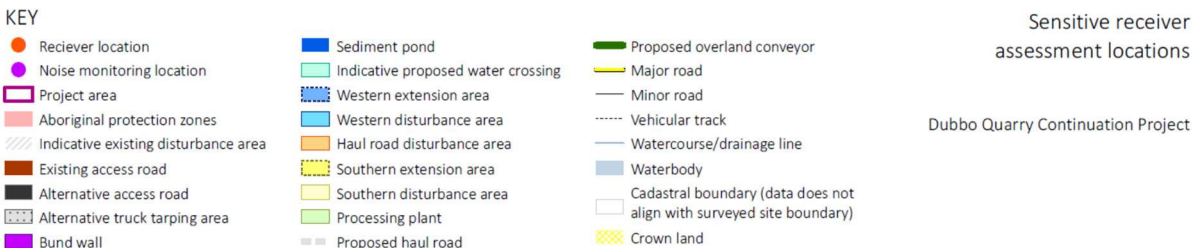
**Figure 2: Water management system with surface water diversion**



### APPENDIX 3: SENSITIVE RECEIVER ASSESSMENT LOCATIONS



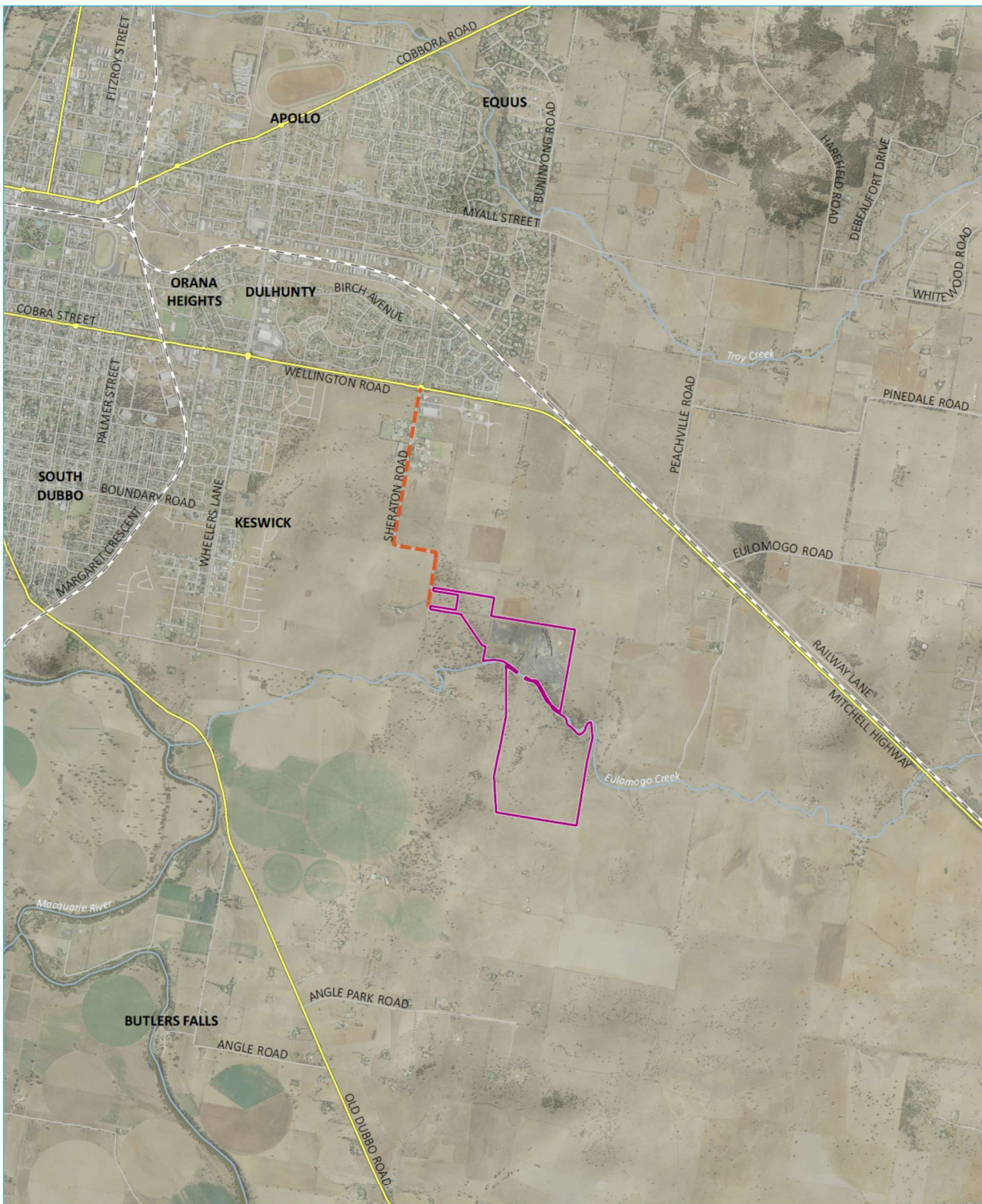
Source: EMM (2023); DCSSS (2023); DFSI (2017); GA (2011)



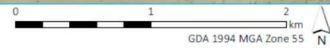
**Figure 1: Sensitive receiver locations**



APPENDIX 4: PRODUCT TRANSPORT ROUTE



Source: EMM (2023); DFSI (2017, 2023)



- KEY**
- Project area
  - Transport route
  - Rail line
  - Major road
  - Minor road
  - Named watercourse

Transport route

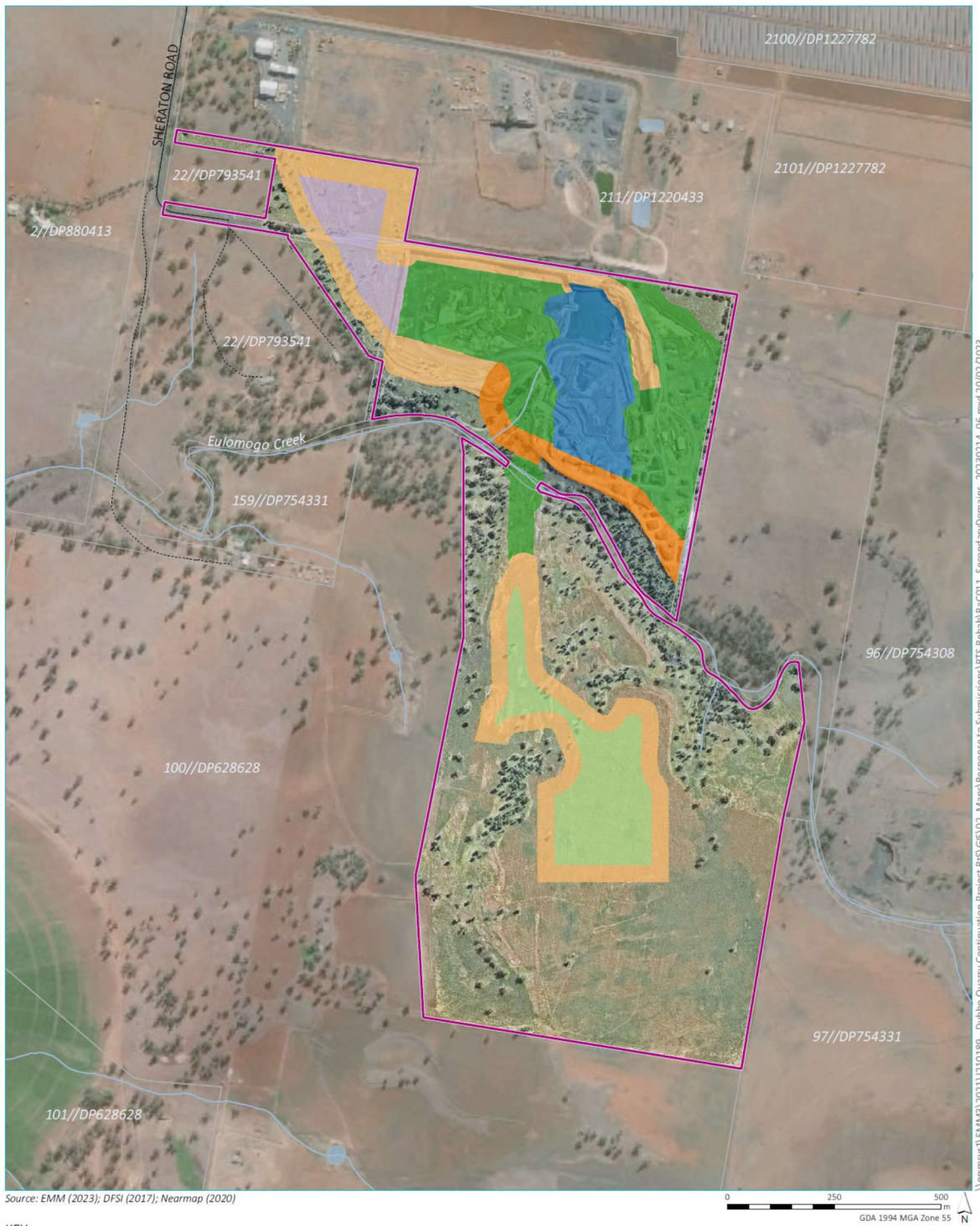
Dubbo Quarry Continuation Project

Figure 1

**Figure 1: Product transport route**



## APPENDIX 5: CONCEPTUAL REHABILITATION PLAN



<p><b>KEY</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid purple; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Project area</li> <li><span style="border-bottom: 1px solid black; width: 20px; margin-right: 5px;"></span> Minor road</li> <li><span style="border-bottom: 1px dashed black; width: 20px; margin-right: 5px;"></span> Vehicular track</li> <li><span style="border-bottom: 1px solid blue; width: 20px; margin-right: 5px;"></span> Watercourse/drainage line</li> <li><span style="background-color: lightblue; width: 15px; height: 10px; margin-right: 5px;"></span> Waterbody</li> <li><span style="border: 1px solid black; width: 15px; height: 10px; margin-right: 5px;"></span> Cadastral boundary (data does not align with surveyed site boundary)</li> <li>Secondary domains</li> <li><span style="background-color: #90EE90; width: 15px; height: 10px; margin-right: 5px;"></span> A. Rehabilitation pasture - LSC Class 5</li> </ul>	<ul style="list-style-type: none"> <li><span style="background-color: #3CB371; width: 15px; height: 10px; margin-right: 5px;"></span> B. Rehabilitation pasture - LSC Class 6</li> <li><span style="background-color: #1E90FF; width: 15px; height: 10px; margin-right: 5px;"></span> C. Water storage</li> <li><span style="background-color: #FFD700; width: 15px; height: 10px; margin-right: 5px;"></span> D. Biodiversity - Blakely's Red Gum - Yellow Box grassy tall woodlands on flats and hills in the Brigalow Belt South Bioregion and Mandawar Bioregion (walls)</li> <li><span style="background-color: #FF8C00; width: 15px; height: 10px; margin-right: 5px;"></span> E. Biodiversity - Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion</li> <li><span style="background-color: #9370DB; width: 15px; height: 10px; margin-right: 5px;"></span> F. Rehabilitation pasture - LSC Class 2</li> </ul>	<p style="text-align: center;"><b>Conceptual final landform</b></p> <p style="text-align: center;">Dubbo Quarry Continuation Project</p>
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**Figure 1: Conceptual Final Landform including native revegetation areas**

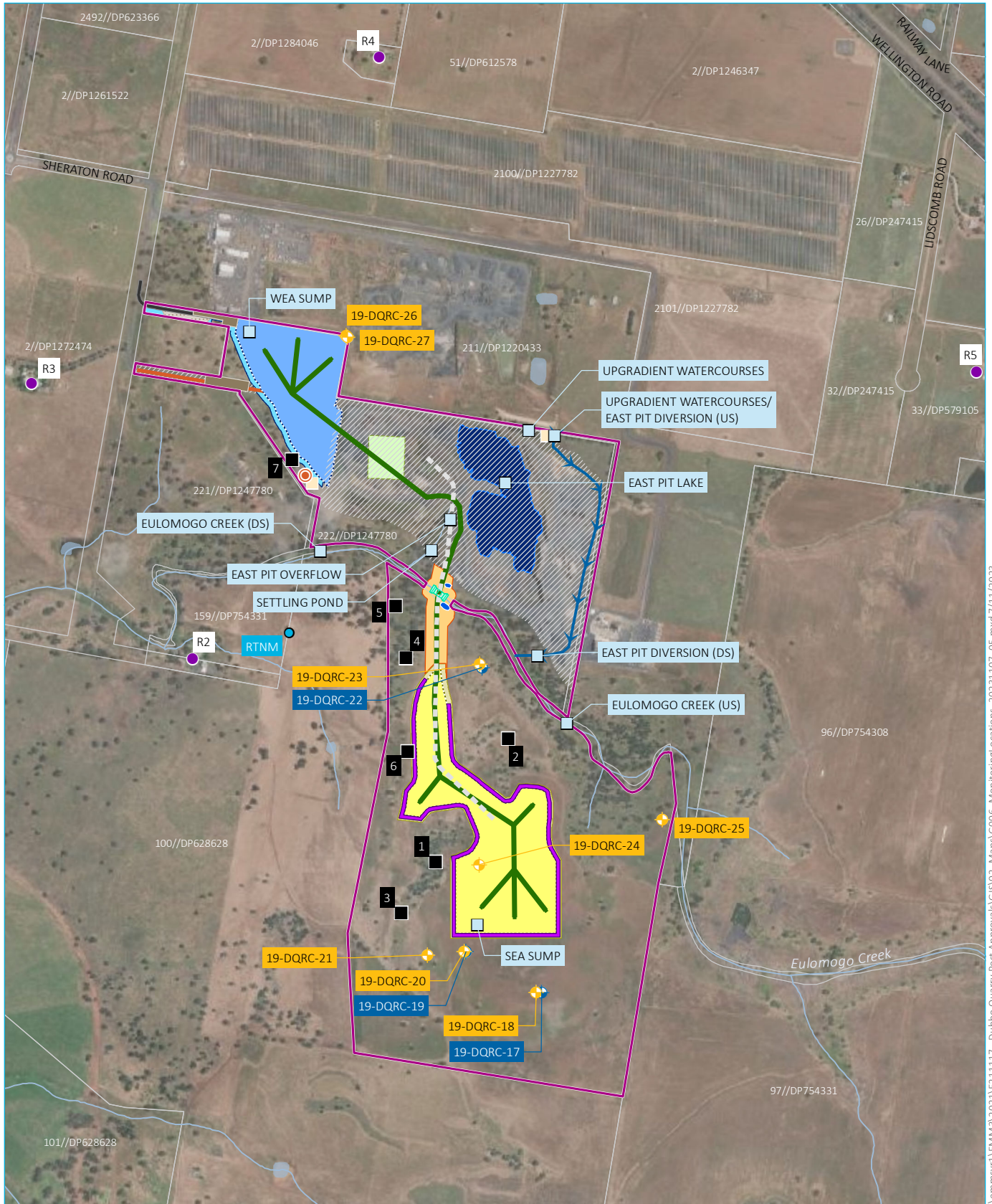
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# Appendix C

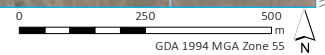
## Monitoring locations

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Source: EMM (2023); ESRI (2023); DCSSS (2023); DFSI (2017); GA (2011)



**KEY**

- |  |                                      |                           |
|--|--------------------------------------|---------------------------|
| Project area   | Proposed haul road                   | Sediment pond             |
| BAM Plots  | Proposed overland conveyor           | Southern extension area   |
| Real-time noise monitoring location  | Alternative access road              | Southern disturbance area |
| Groundwater monitoring bore - basalt (monitoring until extracted where relevant) | Alternative truck tarping area       | Weigh bridge              |
| Groundwater monitoring bore - palaeochannel                                      | Bund wall                            | Western extension area    |
| Noise monitoring location  | Existing access road                 | Western disturbance area  |
| Proposed meteorological station  | Indicative existing disturbance area | Watercourse/drainage line |
| Proposed PM <sub>10</sub> monitor  | Haul road disturbance area           | Waterbody                 |
| Surface water monitoring location  | Indicative proposed water crossing   | Cadastral boundary        |
| Potential watercourse diversion (post June 2025)                                 | Proposed water management storage    |                           |
|  | Processing plant                     |                           |

**Dubbo Quarry monitoring locations**

Dubbo Quarry Continuation Project  
Environmental Management Strategy  
Appendix C



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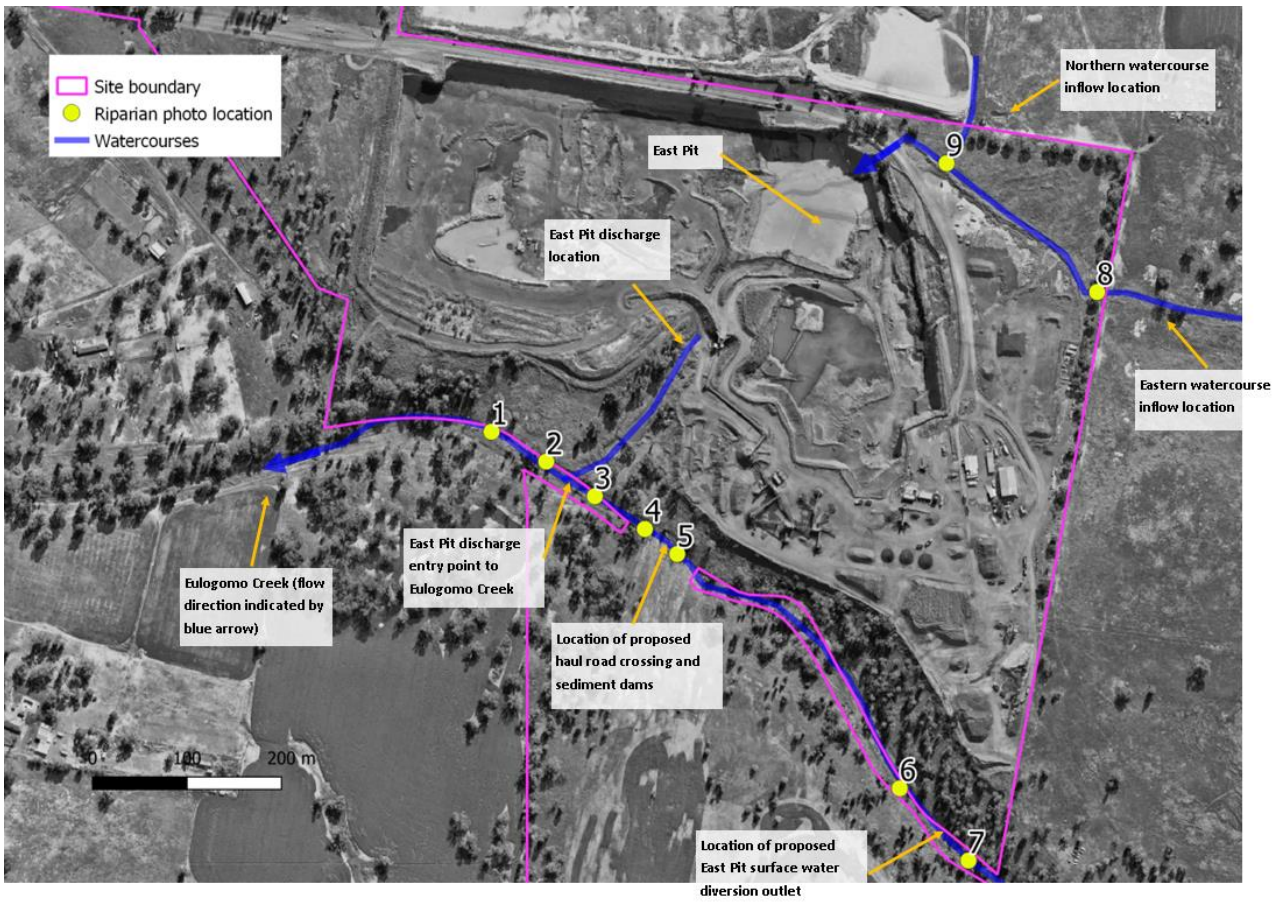


Figure C.2 Stream and riparian condition monitoring locations

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# Appendix D

Summary of management and mitigation measures

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## D.1 Summary of management and mitigation measures

A summary of the management and mitigation measures outlined in the post-approval management plans is provided below, as follows:

- Noise management plan (Table D.1)
- Traffic management plan (Table D.2)
- Air quality management plan (Table D.3)
- Biodiversity management plan (including biodiversity offset strategy) (Table D.4)
- Water management plan (Table D.5)
- Rehabilitation management plan (Table D.6).

**Table D.1 Summary of management and mitigation measures (noise)**

<b>Hours of operation</b>	
1	Holcim will notify the Department and affected residents prior to undertaking the out of hours activities detailed in CoA A13, or as soon as is practical thereafter.
<b>Feasible and reasonable mitigation measures</b>	
2	Use of noise barrier (screening) targeting nearest residence (R2).
3	Proposed modular plant – locate in the west pit (shielding).
4	Enclose crusher equipment.
5	Use of polyurethane and rubber deck for screens.
6	Proposed tracked mobile plant – locate in the west pit (shielding).
7	Use of noise barrier (screening).
8	Use of polyurethane and rubber deck for screens.
9	Use of noise barrier (screening) targeting nearest residence (R2).
10	Jaw crusher – locate near quarry face (shielding).
11	Use of Komatsu D375 dozer (or equivalent in sound power level).
12	Use of covers and ‘quieter’ systems (e.g. varied rollers).
13	If required, a further assessment of noise impacts will be undertaken during the overland conveyor construction design process to provide Holcim with noise mitigation inputs. Additional factors to be considered during this process will be the practicality of attenuation measures and potential operational issues (e.g. access and safety) that could arise. Control options such as the use of covers and ‘quieter’ systems (e.g. varied rollers) will be considered.
14	Construction of a 4 m high bund on the boundaries of the SEA. If the construction of the full SEA bund is not warranted (i.e. it is reduced in size/scale) for the purpose of mitigating noise impacts, this will be determined with additional noise modelling/monitoring assessment.

**Table D.1 Summary of management and mitigation measures (noise)**

**Best practice management measures**

- 15 strict compliance with the approved hours of operations.
- 16 ensuring plant and equipment are properly maintained and serviced in accordance with original equipment manufacturer requirements to ensure rated noise emission levels are not exceeded.
- 17 installing frequency modulated reversing alarms to all mobile plant and equipment.
- 18 ensuring that all truck drivers are trained properly to minimise road traffic noise impacts during transportation on-site and offsite.
- 19 ensuring noise awareness information is provided to Holcim employees and contractors during inductions.
- 20 maintaining an open dialogue with the surrounding community and neighbours to ensure any concerns related to noise are addressed.
- 21 If necessary, alternative engineered noise controls (e.g. substitution, elimination, management, or mitigation) will be implemented during operations, including but not limited to constructing or purchasing enclosures or barriers around 'noisy' equipment to minimise emissions.
- 22 Contractors are required to provide suitable and well-maintained equipment for use at the quarry that complies with original manufacturers specifications. Holcim controls the type of plant and equipment supplied and will review any relevant documentation.
- 23 Practical recommendations to assist in managing construction noise emissions are provided in AS 2436-2010 – Guide to noise and vibration control on construction, maintenance and demolition sites. The recommendations in AS 2436-201 include operational strategies, source noise control strategies, noise barrier controls, and community consultation.
- 24 Detailed noise management and mitigation measures will be reviewed once the construction activities are clearly defined and contractors for the work have been engaged.
- 25 Meteorological forecasts are considered and discussed at daily pre-start meetings. The Quarry Manager considers this information when planning activities for the day

**Complaints**

- 25 A noise complaint management system to engage in active community consultation and maintain positive relations with local residents in relation to quarry noise will be implemented.
- 26 Any enquiries or complaints made by a member of the public to site personnel in relation to quarry noise will be directed to the Quarry Manager.

**Table D.1 Summary of management and mitigation measures (noise)**

- 
- 27 Noise complaints may be made to the quarry’s complaints hotline during business hours (or) or to the Quarry Manager’s mobile phone outside of business hours or for emergencies. These numbers will be provided on a sign at the site entrance and on the quarry website.
- 
- 28 Any noise complaint received regarding quarry noise will be acted on (initial response within 24-hours) in the following manner:
- details of the complaint (date, time, specifics, complainants contact details) will be recorded
  - activities that occurred at the time of the complaint will be investigated (for example via review of real-time noise monitoring data)
  - findings of the complaint investigation will be recorded in a complaints register (refer to Section 4.4.3)
  - relevant mitigation measures and management practices will be reviewed where necessary
  - findings of the review will be communicated to the complainant.
- 
- 29 Details of a noise complaint will be recorded in a complaints register, as well as investigation findings and actions taken to manage the complaint, as well as investigation findings and actions taken to manage the complaint.
- 
- 30 Records will be kept for at least four years after the complaint was made/received.
- 
- 31 Records will be provided to any authorised officer of the EPA upon request.
- 
- 32 Records will be provided to any authorised officer of the EPA upon request.
- 
- 33 A summary of the complaints register will be made available on the quarry website and will be updated monthly.
- 
- 34 Should the complaint be relevant to any of the conditions of the consent, it will be handled as per the consent conditions where relevant.
- 
- 35 All acoustic instrumentation used for monitoring under the noise monitoring program shall have current NATA or manufacturer calibration certificates.
- 
- 36 The noise monitoring program is to be reviewed at a minimum every three years to evaluate its efficacy and to ensure it remains adequate to fully assess noise from current quarry activities.

**Attended noise monitoring**

- 37 Attended noise monitoring is to be completed on an annual basis at a minimum to verify that noise emissions from the facility satisfy the relevant noise limits at all privately-owned residences.
-

**Table D.1 Summary of management and mitigation measures (noise)**

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38 The attended noise monitoring will be undertaken by a competent person as defined in the EPA’s Approved Methods; that is a person appropriately qualified and experienced in acoustics to a standard sufficient to accurately interpret and apply the advice set out in acoustics standards, guidelines and policies.

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39 The attended noise monitoring will be completed during the day (7:00 am–6:00 pm) and night (4:00 am–6:00 am) periods.

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40 Attended noise monitoring will consist of a 15 minute measurement at each monitoring location.

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41 All information required under the EPA’s Approved Methods will be recorded.

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**Noise exceedance protocol**

42 If attended noise monitoring identifies that any of the relevant noise limits has been exceeded, the person conducting the attended noise monitoring shall follow the noise exceedance protocol.

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43 Holcim has developed the following noise exceedance protocol that is followed if attended noise measurements show that quarry noise levels are above the relevant noise limits:

1. Noise monitoring personnel to notify the Quarry Manager and advise of quarry noise level and applicable limits. The Quarry Manager to confirm if operational activities can be modified relatively efficiently.
  2. Operational changes are to be made as soon as practicable (target within 30 minutes) of receiving notification. The Quarry Manager is responsible for conveying a response back to the person conducting the attended noise monitoring.
  3. The person conducting the attended noise monitoring re-monitors (additional 15 minute measurement) and contacts Quarry Manager with follow-up results as soon as practicable.
  4. If measured quarry noise remains above the relevant limit, additional re-monitoring (following steps 1 to 3) is to be conducted on two more occasions for a total of up to three follow-up 15 minute measurements.
  5. If necessary, stop operations or the activity causing the exceedance to ensure compliance with the relevant noise limits.
- 

44 The Quarry Manager is to document any actions implemented following the notification of the noise exceedance.

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45 The exceedance is required to be reported to DPE and EPA by the Quarry Manager (or delegate) as soon as practicably possible upon Holcim becoming aware of the exceedance.

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46 An additional attended noise monitoring survey shall be completed within one week if quarry noise could not be effectively reduced to achieve the relevant limits at the time of the survey.

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**Table D.1 Summary of management and mitigation measures (noise)**

- 47 As required by conditions C4 and D8 of the consent, within seven days of becoming aware of a non-compliance (i.e. noise exceedance of the limits), Holcim will submit a report to DPE through the Department’s Major Projects website detailing the non-compliance. The report will:
- identify the quarry application number and name
  - describe the date, time, and nature of the exceedance/incident
  - identify the cause (or likely cause) of the exceedance/incident
  - describe what actions have been taken to date to address the exceedance/incident
  - describe the proposed measures to address the exceedance/incident.

48 Attended noise monitoring reports will be made available upon request.

**Real-time noise monitoring**

- 49 RTNM consists of using one noise monitor to measure ambient noise and estimate quarry noise contribution. The noise monitor is located immediately to the east of the R2 property as shown in Figure 3.1.
- 50 The RTNM system will be configured so that when the trigger levels have been reached, alarm notifications are sent to the Quarry Manager. Alarm trigger levels will be based on noise limits at the relevant residence(s) and modelled site noise levels at the RTNM location, as established during the validation process.
- 51 The RTNM Trigger Action Response Plan (TARP) presented in Table 5.2 of the NMP will be implemented.
- 52 The RTNM system will be calibrated and validated with the attended noise monitoring results over time to ensure the effectiveness of site noise controls is maintained. The RTNM location may change in the future, such as in the event of on-going community complaints related to noise from quarry operations. The effectiveness of the RTNM system will be reviewed every three years when updates to the plan are required (refer to Section 6.3), or earlier if necessary.

**Noise monitoring report**

- 53 All routine attended noise monitoring results are documented and reported initially on an annual basis. The report will consist of:
- summary of attended noise monitoring methodology and results
  - measured, calculated and/or operator-estimated site Laeq,15min and Lmax noise levels for each monitoring location
  - statement of compliance/non-compliance.

**Table D.1** Summary of management and mitigation measures (noise)

Review	
54	The NMP (including the noise monitoring program) is to be reviewed at least every three years, when updates to the plan are required, or as directed by the Planning Secretary in consultation with other agencies
55	Any modifications to the NMP will be undertaken in consultation with the appropriate government agencies.

**Table D.2 Summary of management and mitigation measures (traffic)**

<b>Environmental performance program</b>	
1	A copy of the Traffic Management Plan (TMP) is to be made available on Holcim's website.
2	Heavy vehicle movements from the site will be recorded at the weighbridge by the weighbridge operator.
3	Where hourly limits are reached, the weighbridge operator will notify the Site Manager and the weighbridge operator will instruct product trucks to remain within the site until the hour is reached.
4	Where daily limits are reached, the weighbridge operator will notify the Site Manager, the weighbridge operator will instruct any vehicles approaching the site to return to their destination.
5	The volume of quarry products transported and fly-ash/concrete washout materials received at the site will be recorded by the Site.
6	The cumulative total will be tracked each month to ensure that projected volumes required to be transported or received for the calendar year will remain within limits. If required to remain within calendar year limits, projected volumes will be revised.
7	These monitoring records are to be included in the Annual Review (period of one calendar year) and Independent Environmental Audit (period of three calendar years or more).
8	Monitoring records are to be retained for a period of no less than four years.
9	In the event that a traffic related complaint is received at the Quarry, the complaints management process described in the Quarry's Environmental Management Strategy will be implemented.
10	The TMP is to be reviewed to monitor its effectiveness after the first 12 months, with the frequency of subsequent reviews to be determined following the outcome of the first review.
11	Minor adjustments to the TMP required during operation of the Quarry may be made by Holcim However, adjustments will not remove those procedures which are requirements for satisfying the Consent Conditions. If substantial modification to the procedures satisfying the Consent Conditions are proposed then the updated TMP would be submitted to DPE for its consideration and approval.
12	The Site Manager identifies and implements control measures to prevent people being injured by moving vehicles.

**Table D.2 Summary of management and mitigation measures (traffic)**

**Responsibilities (all personnel – including contractors and sub-contractors)**

- 13 Observe, understand and comply with the requirements of the TMP at all times including but not limited to parking areas internal and external to the site, pedestrian access to the office areas, neighbouring businesses, plants and equipment, and loading and unloading areas.
- 14 Report any traffic management hazards, unsafe acts or incidents immediately to the site manager/site supervisor.
- 15 Implement the monitoring procedures in Section 3.1 of the TMP.
- 16 Implement, comply and monitor the requirements of the TMP for the site.

**Responsibilities (site manager)**

- 17 Ensure the overall implementation of, and compliance with, the TMP.
- 18 Ensure the timely communication of the contents and requirements of the TMP to all relevant employees, delivery drivers and contractors.
- 19 Ensure that all hazards, unsafe acts or incidents involving traffic movement or pedestrians at the site are reported (including in accordance with any legislative requirements) and corrective action(s) are promptly implemented.
- 20 Provide adequate support, clarification and guidance to all personnel conducting operational activities in mitigating traffic management risks.
- 21 Ensure that the TMP is reviewed to monitor its effectiveness after the first 12 months, and at subsequent periods as determined under Section 3.23 of the TMP.
- 22 Implement the monitoring procedures in Section 3.1 of the TMP.
- 23 Conduct training and communication of the TMP to all personnel, delivery drivers and contractors.
- 24 Ensure drivers are trained in the requirements of the Divers Code of Conduct and conduct regular audits of compliance with the Code.

**Responsibilities (site supervisor)**

- 25 Implement, comply and monitor the requirements of the TMP for the site.

**Table D.2 Summary of management and mitigation measures (traffic)**

- |    |  |
|----|--|
| 26 | Conduct training and communication of the TMP to all personnel, delivery drivers and contractors.  |
| 27 | Ensure drivers are trained in the requirements of the Divers Code of Conduct and conduct regular audits of compliance with the Code.   |
| 28 | Ensure loading and unloading activities are safe and efficient, and co-ordinate the arrival and dispatch of material from designated loading/unloading areas.  |
| 29 | Ensure that any hazards, unsafe acts or incidents involving traffic movement are reported (including reporting according to any legislative requirements), and corrective action(s) are implemented. |
| 30 | Provide support and guidance to all personnel conducting operational activities in mitigating traffic management risks.  |

**Responsibilities (load shifting equipment/delivery vehicles)**

- |    |   |
|----|---|
| 31 | Not be under the influence of drugs or alcohol while operating any vehicle.   |
| 32 | Not use mobile phones or other mobile devices while operating any vehicle.  |
| 33 | Not exceed the speed limit in the area while operating any vehicle.   |
| 34 | Maintain the appropriate licence(s) for the operation of the load shifting equipment.   |
| 35 | Undertake pre-operational checks on load shifting equipment prior to use.   |
| 36 | Report any load shifting equipment hazards or faults to the direct manager or site manager.   |
| 37 | Keep a safe distance (approximately 5–10 m or whatever is reasonably practicable) from weighbridge operators interacting with moving equipment.                                       |
| 38 | Always ensure Ultra High Frequency (UHF) Radio is on and be able to hear all safety communications from weighbridge operators and equipment operators.                                |
| 39 | Observe and comply with the requirements of this TMP at all times including but not limited to safety warning signage, communication devices, and loading and unloading requirements. |
| 40 | Report any traffic management hazards, unsafe act or incidents immediately to the relevant site manager/site supervisor.  |

**Table D.2 Summary of management and mitigation measures (traffic)**

**Responsibilities (environment manager)**

- 41 Incident management and notification.
- 42 Non-compliance reporting.
- 43 Review of the TMP at the specified review points.
- 44 Maintain the current version of the TMP on Holcim’s website.
- 45 Consult with Council in relation to transport management investigations.

**Responsibilities (drivers of heavy vehicles on public roads)**

- 46 Are aware of and comply with the Drivers Code of Conduct.

**Responsibilities (weighbridge operator)**

- 47 Record and monitor hourly and daily laden heavy vehicles leaving the site against the transportation limits. Where heavy vehicle limits are reached, implement the procedure in Section 3.1 of the TMP.

**Traffic management (car and truck parking)**

- 48 Cars are to be parked in the designated parking area(s).
- 49 Car parking spaces are to be always line-marked and kept clear of obstructions.
- 50 Car parking will be located outside of the heavy vehicular path so that there is no interaction between pedestrian travel path (from/to parked cars and site office) and heavy vehicular path within the site.
- 51 Designated truck parking spaces are provided on site for the purpose of loading during operating hours.
- 52 Heavy vehicles are not to be parked on local roads in the vicinity of the site.

**Table D.2 Summary of management and mitigation measures (traffic)**

53 Car parking will always remain onsite, and within the approved disturbance footprint.

54 The internal manoeuvring areas will be kept clear during operating hours to allow for efficient site operations.

**Traffic management (visitors)**

55 All visitors must report to the site office before entering the site.

56 Visitor access within the site is to be restricted to the light vehicle carparks, site office and amenities building, unless accompanied by site personnel.

**Traffic management (weighbridge)**

57 Laden heavy vehicles leaving the site will be recorded by the weighbridge operator.

58 In the event that the hourly limit detailed in Section 4.1 (of the TMP) is reached, the weighbridge operator will instruct drivers to wait within the site until the end of the hour.

59 In the event that the daily limit is reached, the weighbridge operator will advise heavy vehicles entering the site to exit without being loaded.

60 Constant communication on UHF radio is required between weighbridge operator and all load shifting plant/equipment, as well as heavy vehicles waiting to progress into the site.

**Traffic management (site safety)**

61 The site access road is signposted at 60 km/h while the road vehicle speed limit for the remainder of the site is restricted to 20 km/h.

62 All Holcim staff, equipment operators and truck drivers shall have access to UHF radio when working on site.

63 All site safety procedures including procedures for trucks and light vehicles, will be signposted near the entrance to the site, near the site office.

64 Drivers of Heavy Mobile Equipment (HME) and drivers of light vehicles must abide by the 10/20/30 rule which states that vehicles should be clear of HME by the following distances:

- 10 m in front of the HME
- 20 m to the sides of the HME
- 30 m behind the HME.

**Table D.2 Summary of management and mitigation measures (traffic)**

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65	It is a requirement that all drivers are trained in the requirements of the Driver's Code of Conduct.
66	It is a requirement that all drivers are trained in the requirements of the Code and audits of compliance with the Code are to be regularly conducted.
67	All drivers reported or found to be acting in a manner contrary to the Code will be subject to disciplinary action.
68	All site staff must receive compulsory training in relation to the requirements of the TMP.
69	Training should be provided during the person's initial induction and then regularly thereafter in toolbox talks and staff meetings.
70	In the event that Holcim are requested by Council to participate in transport management investigations initiated by Council, the request will be forwarded to Holcim's Environment Team. If the request is relevant to the Quarry, Holcim will consult with Council as to the level of participation required.

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**Signage**

71 Holcim vehicles:

Appropriate signage will be displayed on Holcim heavy vehicles used to transport quarry products from the site so they can be easily identified by other road users.

Contractor's vehicles:

Where Holcim has an exclusive contractual arrangement (Tier 1) with a heavy vehicle contractor/company, Holcim will require identification on the vehicle which indicates it is a quarry-related vehicle (this may be via the form of branding/logos).

Where Holcim does not have an exclusive contractual arrangement with a heavy vehicle contractor/company, Holcim will provide identification for the vehicle which would indicate it is a quarry-related vehicle.

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**Table D.3 Summary of management and mitigation measures (air quality)**

**Routine requirements (conveyors and transfer points)**

- 1 Watering will be applied at conveyor transfer points.
- 2 Scrapers will be used to clean conveyor belts and spillages will be minimised.

**Routine requirements (drilling)**

- 3 Water, for dust suppression, to be injected in drill holes.
- 4 Dust extraction cyclones to be used.

**Routine requirements (blasting)**

- 5 Blast shots will be delayed during unfavourable weather (where practical).
- 6 Blast areas will be designed to minimise the number of blasts needed per year.

**Routine requirements (dozers)**

- 7 Dozer travel speeds and distance will be minimised where possible.
- 8 Water carts will be used to keep dozer routes moist.

**Routine requirements (wheel-generated dust from trucks)**

- 9 Water carts to be used on unpaved haul routes.
- 10 Road surfaces will be gravel.
- 11 Access road to the quarry will be partially sealed.
- 12 Truck travel speeds will be maintained below 20 km/h on operational areas other than haul routes.

**Table D.3 Summary of management and mitigation measures (air quality)**

13 Larger vehicles will be used to minimise the number of trips where possible.

14 Conveyors will be used instead of hauling in the processing area of the existing pit as much as practicable.

**Routine requirements (wind erosion from stockpiles)**

15 Stockpiles will be watered when in use.

16 Water carts will be used to water exposed areas when possible.

17 Exposed areas will be progressively rehabilitated.

18 A bund will be erected in the WEA.

**Routine requirements (loading and dumping rock)**

19 Wherever possible, material drop heights will be minimised when unloading trucks.

**Routine requirements (crushing and screening)**

20 Water sprays will be applied at crushing areas.

21 The silo is to be fitted with a baghouse or filter.

**Routine requirements (vehicle exhaust emissions)**

22 Maintenance of plant equipment to ensure good working conditions and minimise visible smoke.

23 Vehicles with excessive smoke to be sent for maintenance.

24 Minimise truck idling.

25 Any vehicle or item of plant or machinery which emits visible and constant air pollutants will not be permitted on-site

**Table D.3** Summary of management and mitigation measures (air quality)

26 Performance of pre-start checks.

27 Ensure that all vehicles and machinery are fitted with appropriate emission-control equipment.

**Routine requirements (general)**

28 Prevailing wind conditions and weather forecasts will be monitored to provide warnings of any adverse meteorological conditions that may give rise to dust dispersal.

29 No materials, including waste, will be burnt on-site.

30 In dry and windy conditions, minimise as far as possible any dust-generating activities, increase use of watering systems and stop work if nuisance dust is excessive.

31 Real-time monitoring for the management of dust emissions.

32 Visual monitoring of air quality will be undertaken daily, including the monitoring of dust generating activities and emissions from plant and equipment.

33 Non-essential electrical appliances, including lights, will be switched off when not in use. Energy and fuel usage per tonne of product will be monitored with a goal to continually improve efficiencies.

**Proactive management measures**

34 Discussion of the weather conditions and dust considerations at daily pre-shift meetings.

35 Modifying or suspending the planned activities, as appropriate, to minimise dust impacts.

36 Quarry design, including progressive rehabilitation, use of gravel roads and paving the access road.

37 Water sprays on stockpiles and exposed areas.

**Actions during adverse weather conditions**

38 In the event of adverse weather conditions, the quarry manager is required to maintain vigilance for visual dust emissions leaving quarry boundary and implement appropriate additional mitigation strategies.

**Table D.3 Summary of management and mitigation measures (air quality)**

39 Additional mitigation measures will include the targeted use of water sprays at the quarry to the identified contributing dust emission sources, or the temporary restriction and/or cessation of the activity until adverse weather conditions have eased.

**Responsibilities (quarry foreperson)**

40 Regular visual monitoring of the dust levels at the quarry.

41 Managing vehicle speed movements.

42 Restricting operations during periods of strong wind.

43 Utilising spray systems where applicable.

44 Cleaning of the material storage/processing areas.

45 Completion of a complaint form if dust complaint is received.

46 Coordinating with the quarry manager to ensure the complaint is investigated.

**Responsibilities (quarry manager)**

47 Implementing this procedure.

48 Reviewing the site on a regular basis to ensure compliance with condition B21 for air pollutant emissions.

49 Coordinating investigation of the dust incidents or complaints.

50 Documenting the results of the investigation and actions taken.

51 Maintaining the records of any dust complaints.

52 Liaison with the complainant regarding the steps to be taken to minimise further air pollution emissions, where appropriate.

53 Ensuring that the nominated personnel have been trained in the requirements of this procedure.

**Table D.3 Summary of management and mitigation measures (air quality)**

<b>Performance measures</b>	
54	Successful implementation of the control measures in accordance with B21 of the development consent conditions.
55	No air quality exceedances due to Holcim’s quarry operations of the annual and 24 hour total impact PM10 criteria (25 µg/m3 and 50 µg/m3 respectively).
56	No confirmed air quality-related complaints from the operation of the quarry.
<b>Greenhouse gas</b>	
57	Use of equipment that incorporate best-practice emissions reduction technologies (e.g. high efficiency motors).
58	Perform pre-start inspections at each shift on mobile plant and vehicles.
59	Maintain the equipment in good operating order (e.g. routine servicing).
60	Minimise engine idle time.
61	Optimise the design of roads to minimise the distance travelled by construction equipment.
62	Track electricity bills and fuel usage.
63	Install energy-efficient electrical equipment where possible (e.g. lighting).
64	GHG emissions will be tracked and reported annually in the Annual Review, prepared in accordance with condition D9 of the development consent.
<b>Review and improvement</b>	
65	The air quality monitoring program will be reviewed at least every three years, when updates to the plan are required, or as directed by the Secretary in consultation with other agencies.
66	As soon as Holcim becomes aware of an air quality incident, the DPE and any other relevant agencies will be notified.

**Table D.3 Summary of management and mitigation measures (air quality)**

Managing exceedances	
67	A TARP will be used in conjunction with the monitoring program to identify exceedances of the air quality criteria and to allow the appropriate site personnel to respond with additional management and mitigation measures.
68	<p>Non-compliance notifications will be addressed in accordance with the requirements of condition D8 of the development consent.</p> <p>Within seven days of becoming aware of a non-compliance, Holcim will notify DPE of the non-compliance.</p> <p>The notification will be made in writing through DPE's Major Projects website and will:</p> <ul style="list-style-type: none"><li>• identify the development (including the application number and name)</li><li>• set out the condition of the development consent that has not been complied with</li><li>• explain why it does not comply</li><li>• provide the reasons for non-compliance (if known)</li><li>• state the actions that have been or will be undertaken to address the non-compliance.</li></ul> <p>It is noted that a non-compliance that has been notified as an incident does not also need to be notified as a non-compliance under condition D8 of the development consent.</p>

**Table D.4 Summary of management and mitigation measures (biodiversity)**

<b>Revelation areas</b>	
1	Management Zone 2 and 3 will be revegetated to enhance biodiversity and provide a screen between the quarry and sensitive receivers.
2	Using species characteristic of PCT 599, MZ 2 will be revegetated with native groundcovers only.
3	Using species characteristic of PCT 599, MZ 3 will be revegetated with canopy, sub-canopy, understorey and ground strata.
<b>Habitat Salvage (Tree Hollow and Soil)</b>	
4	Before clearing commences, all habitat trees (e.g. trees with hollows or nests) are to be checked and assessed by a trained ecologist to ensure that threatened fauna are not harmed. The ecologist is to consider breeding/ habitat periods for the specific hollow when providing advice.
5	Fallen timber would be left in place or moved to a nearby area (MZ 3 or 4) to retain fauna habitat.
6	Where practical, removed hollow bearing trees or individual hollow- bearing sections (whichever is most suitable or achievable) will be remounted in retained areas. The locations of remounted hollows will be undertaken with the assistance of an ecologist and documented, and will not be placed within 100 metres of the disturbance area.
7	In the event habitat tree removal cannot be avoided, clearance should occur outside of identified breeding seasons wherever possible, to be determined by a trained ecologist.
8	Remounted hollow trees or sections would be inspected to check the adequacy of the mounting.
9	Relocate frog habitat (e.g. rocks and logs) from within the riparian zone to nearby riparian areas.
10	Stripped topsoil will be placed in stockpiles in depths of up to approximately three metres and will be seeded with a cover crop of locally-native grasses if they are to remain in place for longer than approximately six months.
11	Where possible, stripped topsoil may be used to facilitate revegetation efforts in MZ 2 and 3.
<b>Marking Disturbance Boundaries</b>	
12	Installation of the disturbance boundary fencing or flagging to be undertaken prior to vegetation disturbance activities. Reference to the relevant map (e.g. environmental sensitivities control map) to be utilised by workforce. The Work Supervisor or Quarry Manager must conduct regular inspections (e.g. fortnightly) of the disturbance boundary fencing or flagging to ensure all fencing is in place and is clearly visible as per the environmental sensitivities control map.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

13	Discuss the disturbance boundaries and any environmental controls with the work crew and operators, and document the outcomes of the discussion in the SWMS.
14	Ensure all biodiversity related risks and controls are clearly communicated and understood by all.
15	Complete a pre-start checklist and ensure a pre-disturbance document has been completed prior to commencing work in a given area.
16	All pre-disturbance documents must be completed in accordance with the project's document management requirements.
<b>Collection and Propagation of Seed</b>	
17	A variety of indigenous native seed shall be collected from within the disturbance area prior to clearing activities, for propagation and use in MZ 2 and 3. The objective for seed picking is to collect seed colonising shrubs, forbs and grasses from the disturbance area. The scope will be limited by the available seed stock at the time of collection. For staged clearing, all seed collection is to be undertaken prior to vegetation clearing of the area to be cleared.
18	Seed collection (and propagation) should commence as soon as practicable (when grasses are in seed). If native seeds cannot be sourced from within the disturbance area, local nurseries can be used. Information including location, date, species collected will be recorded at the time of collection.
<b>Weed Management</b>	
19	Bi-annual (twice a year) control of African Boxthorn until performance criteria are met (Table 6).
20	Flagging or management signs will be erected at strategic locations prior to any clearing activities to restrict access to infested areas and ensure personnel use designated access tracks.
21	Ensure that the location of biosecurity risks and control requirements are communicated to all personnel in the site induction.
22	Manage the potential spread and/ or any existing infestations on-site through the establishment of biosecurity controls.
23	Where applicable (e.g. soil or vegetation laden plant), contractors must declare in writing all vehicles and machinery are thoroughly washed to remove all soil/ mud and plant material prior to entering site.
24	Weed free declarations will be procured from all suppliers of offsite fill material used during operation or revegetation.



**Table D.4 Summary of management and mitigation measures (biodiversity)**

<b>Control of Pest Species</b>	
25	Monitoring will be undertaken every two years and consist of six baited camera traps deployed within MZ 3 and 4, across seven nights.
26	Pest species abundance will be measured by total number of detections. Detections are defined as the presence of a pest species on a given camera in a night. This will avoid counting multiple presences of the same individual on the same camera in the same night.
<b>Identification of Unexpected TECs or Threatened Species</b>	
27	All quarry staff/ contractors (undertaking cleaning/ stripping activities) will be made aware of potentially occurring threatened species during their site induction. If any threatened species or threatened ecological community is unexpectedly encountered during clearing activities the 'Unexpected Threatened Species Finds Procedure' provided in APPENDIX C will be followed and advice sought from the BCD. Advice from the Quarry Manager or Project Ecologist can be sought if status (threatened or protected) of encountered species is unknown.
<b>Fauna Protection</b>	
28	Personnel are not permitted to intentionally feed, harass, harm, injure or kill fauna.
29	Fauna will only be handled by approved and trained handlers (see APPENDIX D).
30	All vegetation and habitat to be cleared will be completed following pre-clearing surveys by an ecologist (see APPENDIX B).
31	All vegetation and habitat removal will be undertaken under the supervision of an ecologist (see APPENDIX B).
32	Place spoil, from works in the riparian zone, in a manner that allows opportunity for any burrowing frog species to survive and self-relocate.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

**Enhancing Biodiversity**

- 33 Existing vegetation, vegetation connectivity and fauna habitat will be improved throughout the project area through (Figure 3 – Figure 5):
- Control and management of all priority weeds.
  - Relocation of hollow logs and coarse woody debris from within the disturbance footprint.
  - Use of salvaged hollows for fauna habitat.
  - Revegetation areas:
    - Vegetating the bund with native grasses.
    - Establishment of vegetation screening, which consists of canopy, sub-canopy, understorey and ground strata.
    - Sowing and planting of propagated seeds within MZ 2 and 3.
  - Monitoring the condition of retained vegetation (Vegetation Zones 1 – 5) and continued improvement of actions proposed in the BMP.

**Vegetation and Habitat Removal**

- 34 No vegetation is to be impacted beyond what has been approved and specifically identified for removal. All effort must be made to minimise the amount of clearing where possible. Vegetation removal can be minimised by adequate demarcation of disturbance boundaries, the use of the same tracks for ingress and egress and using existing cleared/ degraded areas for laydown and stockpiling.

**Bushfire hazards**

- 35 No vegetation is to be impacted beyond what has been approved and specifically identified for removal. All effort must be made to minimise the amount of clearing where possible. Vegetation removal can be minimised by adequate demarcation of disturbance boundaries, the use of the same tracks for ingress and egress and using existing cleared/ degraded areas for laydown and stockpiling.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

36	<p>Ongoing monitoring of bushfire hazards will be incorporated into the Emergency Management Plan (EMP) for the site. Mitigation measures for managing bushfire hazards are detailed in Appendix C of the EIS (2021) and include:</p> <ul style="list-style-type: none"> <li>• safe access to / from the public road system for fire fighters</li> <li>• adequate services of water for the protection of buildings</li> <li>• location of electricity services away from bushland</li> <li>• landscaping that is designed and managed to minimise flame contact</li> <li>• consideration of asset protection measures when relocating habitat</li> <li>• adequate storage of hazardous materials.</li> </ul>
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**Vegetation Screening**

37	<p>Vegetation screening will be retained, or established where currently lacking, surrounding the project area, beyond the bund. The flora assemblage used in vegetation screening will consist of species characteristic of WBYB and PCT 599. Plants propagated from seed collection will be used where possible to maintain the genetic integrity of the remnant vegetation community. When establishing the vegetation screening (MZ 3), it must be a minimum width of 20m and consist of canopy, sub-canopy, understorey and ground strata. The composition and structure of the vegetation within the screening area must not exceed the benchmark values applied to PCT 599.</p>
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**Indirect Impacts to Threatened Flora and Fauna, and TECs**

38	<p>Appropriate erosion and sedimentation controls will be put in place within the disturbance area and monitored regularly (see Water Management Plan (EMM, 2023)).</p>
39	<p>Weed infestations will be monitored and managed as described in APPENDIX E and Table 6.</p>
40	<p>Vehicle washdown procedures will be put in place for vehicles travelling from weed infested areas.</p>
41	<p>Feral species monitoring and control programs will be implemented (see Table 6).</p>
42	<p>The condition of vegetation within the project area will be monitored, with corrective actions implemented where required (Table 6).</p>
43	<p>A seasonally based monitoring program will be implemented to assess the efficacy of the biodiversity management measures and improve if required.</p>

**Table D.4 Summary of management and mitigation measures (biodiversity)**

<b>Unpredicted Impacts to Biodiversity</b>	
44	Any unpredicted impacts to biodiversity must be managed in accordance with the appropriate controls outlined in this table, and monitored/remedied following the measures in Table 6.
45	Advice must be sought from BCD, and if relevant the Project Ecologist, for all unpredicted impacts. Where relevant, remedial actions proposed in Table 6 are to be followed to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible.
<b>Completion of Quarrying</b>	
46	Upon completion of quarrying, the Environment Officer must be consulted before removing the disturbance boundary fencing or flagging.
47	All disturbance boundary fencing must be removed upon completion of the project. Advice will be obtained from an ecologist prior to the removal of the fencing.
48	A final review of the BMP and all monitoring sessions will be undertaken to assess the performance of the mitigation and management measures.
<b>Inspections</b>	
49	Inspections of terrestrial biodiversity aspects will occur for the duration of the project.
50	Regular processes including daily (informal) visual inspections and documented weekly inspections by site staff will be used to inform mitigation measures and environmental controls during the quarrying phase.
51	Where deficiencies in controls or systems are identified, the issue and required action will be managed as described in the EMS (non-construction activities) and a record maintained to demonstrate timely action and close out.
52	Reviews/ audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this management plan and other relevant approvals, licenses and guidelines.
53	The planned audit process will be detailed within the relevant EMS.
<b>Indirect impacts to Threatened Entities</b>	
54	Reporting requirement: Inclusion of any indirect impacts and corrective actions in the annual monitoring report (spring).

**Table D.4 Summary of management and mitigation measures (biodiversity)**

Habitat salvage		Activity/area	Phase/timing
55	The Project Ecologist will mark all habitat to be salvaged prior to vegetation removal works (Figure 3 – Figure 5).	MZ 1 and 2	During clearing.
56	All marked habitat for salvage will either be relocated as part of the pre-clearing survey or stockpiled for later relocation.		
57	As part of the Pre-clearing Survey Report, the Project Ecologist will identify the location of all habitat to be salvaged for the clearing program as well as possible relocation areas.		
58	The location, and date of storage, of all stored top soil will be recorded.		
59	10m of hollow logs or coarse woody debris salvaged and placed within Management Zone 3 or 4, or, installation of artificial hollows at a ratio of 1:1 (from what was removed during clearing) within Management Zone 4.	MZ 3 and 4	Within one year from the commencement of quarrying operations having commenced after a campaign clearing activity.
60	Marked habitat items salvaged from clearing/ disturbance footprint.	MZ 1 and 2	During clearing
61	Marked habitat was not salvaged from clearing/ disturbance footprint.	MZ 1 and 2	Until completion criteria met after a campaign clearing event.
62	A review of the habitat salvage procedure should be undertaken and alternative habitat compensation measures should be investigated (e.g. artificial hollows).	N/A	Within six months of trigger point.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

63	Alternative habitat compensation measures implemented within one year from the commencement of operations. Where artificial hollows are installed as a compensation measure corrective action, they should be maintained (i.e. ensure they are able to function as habitat) for five years.	MZ 3 and 4	Within one year from the commencement of quarrying operations having commenced after a campaign clearing activity.
64	All habitat identified for salvage by the Project Ecologist will be detailed in a Pre-clearing Survey Report (following completion of pre-clearing surveys). Relocated habitat will be detailed (e.g. habitat type, location) within the annual monitoring report.	MZ 3 and 4	Annually until completion criteria met.
<b>Weed management (compliance)</b>		<b>Activity/area</b>	<b>Phase/timing</b>
65	Baseline data are to be collected prior to commencement of operations. Baseline data will be collected as part of the seven (7) BAM monitoring plots (see 'Vegetation Screening' and 'Enhancing Biodiversity' below). Level of infestation within the vegetation zones, shown in <b>Figure 3 – Figure 5</b> (showing the 7 monitoring locations), is to be categorised from the BAM plot data as Very Low (<1%); Low (1-10%); Moderate (11-30%); High (31-60%); and Very High (>60%).	MZ 2, 3 and 4	Collected once prior to completion of clearing campaign.
66	Cover of existing priority weeds for vegetation zones with a baseline moderate infestation (or higher) reduced to very low or low categories within one year following the commencement of clearing.	MZ 2, 3 and 4	Within one year from commencement of quarrying operations.
67	Cover of priority weeds in BAM VI plots.	MZ 2, 3 and 4	Within one year from commencement of quarrying operations.
68	Cover of existing priority weeds is less than 10% in each vegetation zone with a baseline moderate infestation (or higher) and no new incursions at the end of life for the quarry.	MZ 2, 3 and 4	End of life for the quarry.
69	All priority weed cover in the very low or low category ( $\leq 10\%$ ). No establishment of new priority weeds.	MZ 2, 3 and 4	Annually (spring).
70	Priority weed cover increases by more than 50% on baseline data or exceeds 10% within a vegetation zone.	MZ 2, 3 and 4	Until completion criteria met.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

71	Review weed control procedures. Consider increasing intensity of weed control for the target weed. Conduct weed mapping survey of the project area within three months of implementation of corrective actions to assess the efficacy.	MZ 2, 3 and 4	Within three months of trigger point.
72	Reduction of priority weed cover to baseline levels for the vegetation zone or below 10% (depending on trigger).	MZ 2, 3 and 4	Within three months of corrective actions.
73	All weed monitoring (undertaken in spring), management and control will be recorded and form part of the annual monitoring report.	MZ 2, 3 and 4	Annually (spring).
<b>Pest species management</b>		<b>Activity/area</b>	<b>Phase/timing</b>
74	Camera trapping undertaken as part of the EIS (Appendix F) recorded five detections of <i>Vulpes vulpes</i> (Red Fox) and eight detections of <i>Rattus rattus</i> (Black Rat) within the project area. It is likely that other pest mammal species such as <i>Oryctolagus cuniculus</i> (European Rabbit) or <i>Mus musculus</i> (House Mouse) use the project area habitually or opportunistically.	MZ 3 and 4	Completed.
75	No more than eight detections of previously unrecorded pest mammal species. No more than 10 detections of <i>Vulpes vulpes</i> (Red Fox) and 16 detections of <i>Rattus rattus</i> (Black Rat).	MZ 3 and 4	First round of monitoring (spring 2025).
76	Number of detections during a monitoring session.	MZ 3 and 4	Every two years (spring).
77	Less than 50% increase in detections of known pest mammal species (number of nights detected summed across all camera traps) from baseline levels.	MZ 3 and 4	End of life for the quarry.
78	Less than 100% increase in detections of known pest mammal species (number of nights detected summed across all camera traps) from baseline levels. No more than eight detections of previously unrecorded pest mammal species.	MZ 3 and 4	Every two years (spring).
79	Equal to, or greater than, 100% increase in detections of known pest mammal species (number of nights detected summed across all camera traps) from baseline levels. More than eight detections of previously unrecorded pest mammal species during a monitoring session.	MZ 3 and 4	Every two years (spring) until completion criteria met.



**Table D.4 Summary of management and mitigation measures (biodiversity)**

80	Re-sample (undertake monitoring) within 12 months to determine whether the increase is a result of natural population fluctuation or changes in behaviour. If results of re-sampling still meet the trigger point, contact a pest species officer for advice (e.g. active control). If an increase in herbivorous pest species (e.g. rabbits, pigs) are detected in MZ 3, fortification or replacement of plant guards is to be implemented.	MZ 3 and 4	Within 12 months of trigger point.
81	Reduction of pest mammal species below trigger point.	MZ 3 and 4	Within 12 months of corrective actions.
82	Results of monitoring and any corrective actions to be included in the annual monitoring report for the year the pest monitoring was undertaken.	MZ 3 and 4	Every two years (spring).
<b>Collection and Propagation of Seeds</b>		<b>Activity/area</b>	<b>Phase/timing</b>
83	N/A	N/A	N/A
84	Native seeds collected from a minimum of three native species representative of PCT 599.	MZ 1 and 2	Prior to completion of clearing campaign.
85	Native species representative of PCT 599.	MZ 1 and 2	Prior to completion of clearing campaign.
86	Use of propagated/ locally sourced seeds within vegetation screening areas and/ or bund walls within two years of completion of clearing activities.	MZ 2 and 3	Within two years of completion of clearing campaign.
87	Collection and propagation of native seeds.	MZ 1 and 2	Annually (summer).
88	Seeds unable to be collected or propagated.	MZ 1 and 2	N/A
89	Native seed consisting of characteristic PCT 599 species will be sourced from a local nursery or community group.	N/A	Within six months of trigger point.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

90	Native seeds sown within the revegetated areas.	MZ 2 and 3	Within three months of corrective actions.
91	All seed collection and propagation information will form part of the annual monitoring report.	MZ 1, 2 and 3	Annually (spring)
<b>Vegetation Screening</b>		<b>Activity/area</b>	<b>Phase/timing</b>
92	No baseline data. Baseline data will consist of a vegetation condition score (measured by VI) achieved by the establishment of two BAM plots (numbers 6 and 7) (Figure 3 – Figure 5).	MZ 3	Once in spring (prior to commencement of quarrying operations)
93	90% survival rate of all plantings after one year.	MZ 3	Prior to commencement of quarrying operations
94	Gradual and continual increase in VI score.		
95	Revegetation efforts must not cause the benchmarks for the mid and upper stratum of community (PCT 599) to be exceeded (see Table 4).		
96	Survival of plantings and VI score.	MZ 3	Annually (spring).
97	Vegetation Integrity score >50% at the end of life for the quarry.	MZ 3	End of life for the quarry.
98	Vegetation Integrity score increase >5% over 12 months.	MZ 3	Annually (spring)
99	Decline in species abundance such that it reduces their overall cover (measured by the BAM plot). Decline in species diversity.	MZ 3	Annually (spring)
100	Review the relevant management actions. Consider infill planting with species characteristic of PCT 599 sourced from a local nursery or local educational/ land care group. If certain species exceeds the benchmark threshold, advice will be sought from a qualified ecologist for the best course of action.	MZ 3	Within three months of trigger point.
101	Increase in species diversity and cover above baseline levels.	MZ 3	Within 12 months of trigger

**Table D.4 Summary of management and mitigation measures (biodiversity)**

102	All vegetation condition data will be collected annually in spring and detailed within the annual monitoring report.	MZ 3	Annually (spring)
<b>Enhancing Biodiversity (condition of retained vegetation)</b>		<b>Activity/area</b>	<b>Phase/timing</b>
103	No baseline data. Baseline data will consist of an updated vegetation condition score (measured by Vegetation Integrity (VI) score) calculated by the re-sampling of BAM plots (number 1 – 4) and establishment of one (1) new BAM plot (number 5) shown in Figure 3 – Figure 5.	MZ 4	
104	No decline in vegetation condition within each vegetation zone.	MZ 4	
105	VI score.	MZ 4	
106	Vegetation Integrity score increased by 5% (or more) within each vegetation zone at the end of life for the quarry. If abiotic factors such as drought or flood (i.e. not quarry related) are shown to have impacted the condition of the vegetation, the completion criteria will be that exotic species abundance and cover is less than 50% of baseline levels after 5 years.	MZ 4	
107	No decrease in VI score.	MZ 4	
108	Quarry related cause of VI decline below baseline levels.	MZ 4	
109	Efforts to enhance biodiversity (e.g. weed and pest management, habitat salvage) must be reviewed with consideration given to increased efforts for the specific biodiversity components that are lacking or in decline. Should abiotic factors such as drought or flood cause the decline in VI score, consideration should be given to obtaining new baseline VI scores for each zone.	MZ 4	
110	Vegetation Integrity score within 5% of baseline levels, within 12 months.	MZ 4	
111	All vegetation condition data to be detailed within the annual monitoring report.	MZ 4	

**Table D.4 Summary of management and mitigation measures (biodiversity)**

<b>Additional reporting requirements</b>		
112	Pre-clearing survey reports will be prepared following pre-clearing surveys of the disturbance area	Following pre-clearing surveys (pre-clearing survey report) and clearing supervision (post-clearing report)
113	Pre-clearing survey reports will include information on fauna observed and relocated	Following pre-clearing surveys (pre-clearing survey report) and clearing supervision (post-clearing report)
114	A report documenting all information regarding encountered fauna will be prepared following vegetation clearing.	Following pre-clearing surveys (pre-clearing survey report) and clearing supervision (post-clearing report)
115	A review of the BMP and all monitoring sessions data will be undertaken to assess the performance of the mitigation and management measures.	Once, at the completion of quarrying activities.
<b>Review and improvement</b>		
116	Review of this BMP will also take place if biodiversity monitoring results indicate that it is warranted or in the event of any significant change to biodiversity management procedures at the quarry.	

**Table D.4 Summary of management and mitigation measures (biodiversity)**

Pre-clearing Procedure	
117	This procedure shall be read and used in conjunction with the EMS and the BMP. The following is to occur prior to clearing:
118	An ecologist will be engaged for the project
119	A clearing and grubbing Environmental Work Method Statement (EWMS) will be developed
120	Clearing limits/ Exclusion Zones will be established at least one day prior to clearing commencing and will include the following:
121	<ul style="list-style-type: none"> <li>The clearing limits will be delineated using signage or highly visible barriers or tape such as flagging, bunting, nightline or other similarly robust and durable material.</li> </ul>
122	<ul style="list-style-type: none"> <li>Tree protection zones (TPZs) (determined by the Project Arborist) will be set up around all trees retained within and adjacent to the disturbance footprint using signage or highly visible barriers or tape such as flagging, bunting, nightline or other similarly robust and durable material.</li> </ul>
123	<ul style="list-style-type: none"> <li>Delineation will be installed consistently through the project to mark boundaries and sensitive areas to reduce the risk of error or misinterpretation of boundaries. This may not be possible in some circumstances due to safe site access requirements.</li> </ul>
124	Consultation with the ecologist will occur to determine suitable locations for fauna release.
125	An ecologist will undertake a pre-clearing survey along the proposed clearing areas prior to the commencement of clearing. The ecologist will:
126	<ul style="list-style-type: none"> <li>check for the evidence of presence of threatened flora and fauna species</li> </ul>
127	<ul style="list-style-type: none"> <li>assess the habitat to be removed and the breeding requirements/period of Grey-crowned Babbler (breeds between July and February) and Yellow-Bellied Sheathtail Bat (December to mid-March)</li> </ul>
128	<ul style="list-style-type: none"> <li>flag habitat features, including (but not limited to) nests, hollow bearing trees or large logs using highly visible barriers or tape such as flagging, bunting, nightline or other similarly robust and durable material. As noted above in some circumstances this may not be possible due to site safe access requirements. GPS coordinates for all habitat trees identified will be recorded during the pre-clearing survey.</li> </ul>
129	A check to ensure clearing limits and other delineation required to be installed prior to clearing, is in place.
130	Where possible, the project ecologist should capture and/ or remove fauna that have the potential to be disturbed as a result of clearing activities.
131	Relocate identified fauna into pre-determined habitat identified for fauna release.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

132	Inform clearing contractors of any changes to the sequence of clearing if required.
133	Prior to any disturbance of waterway banks, a thorough inspection by a qualified ecologist will be undertaken for aquatic fauna and frogs.
134	Where possible, existing trees and other vegetation should be retained within 15 metres of waterways and drainage lines until immediately before clearing commences in the area.
135	The supervisor, operator and environmental advisor are to walk the clearing footprint prior to commencing clearing.
<b>Clearing Procedure – Stage 1 – Non-habitated vegetation/tree removal</b>	
136	In areas where no habitat has been identified, clearing can be undertaken in a single-stage process. This includes the under-scrubbing of non-habitat trees, shrubs and other vegetation. These areas will be rapidly inspected by the project ecologist immediately prior to clearing, to:
137	Obtain updated information on fauna and fauna habitat resources present: <ul style="list-style-type: none"> <li>inspection of trees for any new nests constructed since the pre-clearing surveys.</li> </ul>
138	Identify any fauna that may have moved into the project area since the initial pre-clearing inspection.
139	Capture and relocate non-mobile fauna, such as reptiles and frogs and key habitat features such as active bird nests.
140	If not already collected, record the details for all new Hollow Bearing Trees (HBTs) and trees containing threatened fauna and include GPS location, species, type of habitat feature, size of hollow and type of hollow.
141	The timing between Stage 1 and Stage 2 clearing should be 24-48 hours (but no longer than 72 hours).
<b>Clearing Procedure – Stage 2 – Habitat Removal</b>	
142	Nests and on-ground logs will be carefully inspected by an ecologist. Logs should be carefully rolled and inspection beneath the log undertaken.
143	The project ecologist will be present during removal of all habitat features to capture and relocate any encountered fauna.
144	Habitat trees (trees with hollows or nests) will be knocked either manually or with machine and then carefully lowered to the ground using a claw attachment (with minimal impact) and nests and hollows inspected by the ecologist.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

145	Any fauna species are to be relocated to habitat identified during the pre-clearing process or, if injured, transported to a veterinarian or wildlife carer.
146	Where works are undertaken when frogs are active they should be relocated to the nearest area of retained riparian habitat.
147	Hollow bearing trees and any other cleared vegetation regarded as valuable for relocation and habitat creation/ enrichment are to be salvaged for re-use.
148	Records are to be kept of all fauna rescue events including locations to where fauna have been relocated. Provide GPS coordinates for such events.
149	Stockpiling/ storage of cleared timber are to be in designated areas and outside the critical root zone of remaining trees.
<b>Clearing Procedure – Post-clearing Report</b>	
150	Post clearing reports will be compiled progressively during the clearing phase of the project and submitted to Holcim. The completed reports will include:
151	The name and qualifications of the ecologist present during clearing
152	An assessment of the habitat and handling of fauna
153	Information on clearing operations, dates, procedures, areas
154	Live animal sightings, captures, any releases or injured/ shocked wildlife
155	Any dead animals located, and
156	Photographs of rescued fauna.
<b>Rescue Procedure</b>	
157	If wildlife are identified within the project area during clearing or quarrying activities that may harm, or has resulted in harm, to the animal or that poses risk to site personnel, the following steps will be taken: <ol style="list-style-type: none"> <li>1. Stop all work in the vicinity of the fauna and immediately notify the Site Supervisor/ Environmental Advisor who is to notify the Environmental Manager and/ or Project Ecologist if the latter is present on site.</li> <li>2. Preferably allow any fauna individuals to leave the area without intervention.</li> </ol>



**Table D.4**      **Summary of management and mitigation measures (biodiversity)**

3. Use a qualified ecologist or wildlife carer with specific animal handling experience to carry out any fauna handling.
4. Where necessary to minimise stress to native fauna and/or remove the risk of further injury before the Project Ecologist or wildlife handler arrives on site, the Environmental Officer may implement the Handling Procedure.
5. If the animal cannot be handled (i.e. venomous reptiles, raptors, bats):
  - a) exclude all personnel from the vicinity with fencing and/or signage
  - b) record the exact location of the animals to be provided to the Project Ecologist or appropriate wildlife handler.
6. Call the Project Ecologist or appropriate rescue agency (refer to contact details provided in below and follow any advice provided. Once the Project Ecologist or wildlife carer arrives at site, they are responsible for the animal and any decisions regarding the care of the animal will be made by that person.
7. In the event that wildlife carers, and/or local veterinary Services cannot be contacted, the injured animal shall be delivered to the relevant agency as soon as possible.
8. If an animal is injured, it will be kept in a quiet, warm and dark place until it can be transferred to a wildlife carer or vet.
9. If any fauna are to be euthanized, it will be undertaken using a suitable technique (e.g. cervical dislocation for small mammals) by a trained and competent personnel (i.e. suitably qualified Project Ecologist or wildlife handler) or will be taken to a veterinarian for euthanasia. The Project Ecologist will consider methods that are humane, painless and rapid.
10. If the fauna species is identified as a threatened species that is not a species for the specific work site identified in the Unexpected Threatened Species Find Procedure, workers must follow the protocol specified in that procedure, including:
  - a) immediately cease all work likely to affect the threatened species
  - b) inform the Environmental Manager and the Project Ecologist
  - c) following consultation with all relevant stakeholders, the Project Ecologist/Environmental Manager will implement any corrective actions and additional safeguards
  - d) following confirmation by the Project Ecologist/ Environmental Manager that all appropriate safeguards have been implemented, quarrying works can recommence.
11. Release of fauna captured during quarrying works, including clearing and associated works, will be undertaken by the Project Ecologist or wildlife handler. If the animal is not injured or stressed, it should be released to an area that is not to be disturbed by the Project quarrying works, in accordance with the following:
  - a) sites identified as suitable release points by the Project Ecologist or wildlife rescuer
  - b) release site will contain similar habitat and occur as close to the original capture location as possible
  - c) if the species is nocturnal, release will be carried out at dusk
  - d) if the species is arboreal, release will be onto the trunk of a suitable tree
  - e) release would generally (except in the case of aquatic fauna and amphibians) not be undertaken during periods of heavy rainfall

**Table D.4 Summary of management and mitigation measures (biodiversity)**

- f) non-native fauna will not be released and will be euthanised
- g) if the animal has been placed into care due to injury, age (i.e. young) or stress, upon its rehabilitation it will be released in an area that is not to be disturbed by the Project quarrying works, at the discretion of the Project Ecologist or wildlife rescuer.

**Reporting requirements**

- 158 12. Details of captured and relocated fauna will be recorded either in the Post-clearing Report or on the 'Fauna Rescue Event Record', including:
- a) species
  - b) location and time captured
  - c) location and time released
  - d) behaviour and condition upon capture
  - e) behaviour and condition upon release
  - f) contact details of wildlife carer or vet if the animal was transferred into their care.

**Handling procedure**

- 159 The Handling Procedure will be implemented only if intervention is necessary (i.e. where fauna is injured or otherwise unable to leave the site without intervention, or to minimise stress to native fauna and/ or remove the risk of further injury. The Project Ecologist will implement the following procedures:
- 160 1. Cover larger animals (including their head) with a towel or blanket and, if feasible, place in a cardboard box or cloth/hessian bag.
- 161 2. Place smaller animals (mammals, birds, reptiles) separately in a cotton bag, tied at the top.
- 162 3. Place frogs/tadpoles separately in a single use zip lock plastic bag with a small amount of water and/or the litter /vegetation in which they were found.
- 163 4. Fish and other aquatic life (i.e. turtles) place in plastic aquaria or plastic container with sufficient water.
- 164 5. For terrestrial fauna keep the animal in a quiet, warm, ventilated and dark place away from noisy quarrying activities.
- 165 6. For aquatic fauna species ensure sufficient amount of water and ensure adequate.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

166	7. Gloves will be worn when handling mammals to protect against scratches and bites.
167	8. The Hygiene Protocol for the control of disease in frogs (DECCW, 2009) must be followed for all frog handling to prevent pathogen spread amongst individuals and between catchments: <ul style="list-style-type: none"> <li>a) single use, non-latex, non-powdered (i.e. nitrile) disposable gloves to be worn when handling individuals if gloves are not available, then avoid touching the frog with bare hands by using implements to transfer to a container</li> <li>b) healthy frogs are to be placed in separate single-use plastic bags which should be partially inflated and include a small amount of leaf litter or clean (i.e. washed in a 0.1% concentration of a benzalkonium chloride based disinfectant solution such as F10SC at 1:250 dilution and not re-used) damp cloth bag containing a small amount of leaf litter</li> <li>c) sick or injured individuals would be euthanized immediately, unless there is a high probability of recovery, in which case treatment would be as for healthy frogs</li> <li>d) handling equipment, hands and boots to be cleaned of all soil and sprayed with a 0.1% concentration of a benzalkonium chloride based disinfectant solution (i.e. F10SC at 1:250 dilution) or a Chlorhexidine based product (e.g. Halamid©) and rinsed when moving between waterbodies</li> <li>e) frogs and tadpoles are not to be moved between catchments</li> <li>f) dead frogs would be handled only using single-use gloves and buried in situ to avoid movement of pathogens.</li> </ul>
168	9. Snake handling must be as follows: <ul style="list-style-type: none"> <li>a) handling of snakes must only be undertaken by a qualified ecologist or wildlife carer with experience in snake handling</li> <li>b) no contact handling techniques (i.e. use a snake hook and bag in opposed to manually handling the snake) are recommended.</li> </ul>
169	10. All handling of bats must be as follows: <ul style="list-style-type: none"> <li>a) bats must only be handled by a qualified ecologist or wildlife carer experienced in bat handling and vaccinated against the Australian Bat Lyssavirus (ABLV)</li> <li>b) gloves must be worn when handling bats</li> <li>c) larger bats would be wrapped in a large towel and handled with wearing elbow length puncture proof gloves.</li> </ul>

<b>We1ed control and inspection</b>		<b>Activity/area</b>	<b>Phase/timing</b>
170	Table 9 – Priority weed recorded within, and immediately adjacent to, the development footprint – <i>Lycium ferocissimum</i> – African boxhorn. Must not be imported into the state, sold, bartered, exchanged or offered for sale.		

**Table D.4 Summary of management and mitigation measures (biodiversity)**

171	Table 9 – Priority weed recorded within, and immediately adjacent to, the development footprint – <i>Lycium ferocissimum</i> – African boxhorn. Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/ or social value.		
172	All site personnel and subcontractors will be inducted in the existence of priority weed(s) within the disturbance area, their biosecurity requirements and reporting procedures. This training will occur on site during the project Induction and as required in toolbox talks.		
173	Weed inspections will occur within the disturbance area prior to the following works: <ul style="list-style-type: none"> <li>• clearing and grubbing</li> <li>• drainage works that may facilitate the distribution of weed seeds (including installation of stormwater drainage channels), and</li> <li>• when a new weed infestation has been identified.</li> </ul>		
174	Mechanical control methods for weed management on site include:		
175	Pushing out the plants is the cheapest way to control mature thickets. Remove as many of the roots as possible and burn. Removal of the roots is much easier and more effective when the soil is moist.		
176	Destroy all plant material after physical removal.		
177	An infestation might be valuable habitat for native fauna. In this case, use a staged control program. Gradually replace the African Boxthorn with suitable native species.		
178	Follow-up: In autumn when new seedlings appear. Use other methods to control regrowth or wait until regrowth is over 50 cm high (approximately 18 months old) to repeat spraying.	Foliar spray:	Usually in spring, after rain when the plant is actively growing.
179	Foliar spraying is the most common method of control. Spray the whole bush when the plant is actively growing. This will vary depending on the location and rainfall.	Foliar spray:	Usually in spring, after rain when the plant is actively growing.

**Table D.4 Summary of management and mitigation measures (biodiversity)**

180	Do not spray during hot, dry periods or when the plant is stressed from drought, waterlogging, or cold. Foliar sprays are more effective when plants have more leaves.	Foliar spray:	Usually in spring, after rain when the plant is actively growing.
181	For large bushes it is very costly and difficult to obtain good coverage with the herbicide. Consider bulldozing thickets of large bushes and spraying the regrowth.	Foliar spray:	Usually in spring, after rain when the plant is actively growing.
182	Follow-up: If regrowth appears and in autumn when new seedlings emerge.	Basal bark treatment:	Year-round
183	Use basal barking for plants with stems up to 5 cm in diameter at the base. Liberally spray the bark around the stem from ground level to 30 cm high, wetting thoroughly to the point of runoff.	Basal bark treatment:	Year-round
184	Follow-up: When regrowth appears and in autumn when new seedlings emerge.	Cut stump treatment:	Year-round
185	This technique is also appropriate for small infestations in environmentally sensitive locations. It is suitable for plants with small stems and stems over 5 cm diameter at the base.	Cut stump treatment:	Year-round
186	Cut each stem off 15 cm above the soil surface. Cover the cut surface with herbicide within 30 seconds. If herbicide is not applied immediately the plant will heal and the herbicide won't work.	Cut stump treatment:	Year-round
187	Follow-up: Revegetate when the residual period is over.	Root application	Year-round
188	Take great care when using this technique. This method uses a residual herbicide that will remain active in the soil for some time. Many desirable trees, e.g. eucalyptus, are susceptible to the residual herbicides. Do not use this method within a distance of at least twice the height of adjacent desirable trees or shrubs.	Root application	Year-round

**Table D.4 Summary of management and mitigation measures (biodiversity)**

189	<p>Apply the residual herbicide:</p> <ul style="list-style-type: none"> <li>• directly under the plant, towards the edge of the canopy</li> <li>• under the soil to stop degradation by sunlight and rain washing the herbicide away</li> <li>• when the soil is moist, usually in spring or autumn.</li> </ul>	Root application	Year-round
<b>Stockpiling and Disposal</b>			
190	Weed infested materials will not be stockpiled to native vegetation wherever possible during topsoil stripping operations		
191	All topsoil and mulch containing potential weed propagules will be used only in areas that contained the weed species prior to clearing		
192	Weed material and weed contaminated topsoil will be stockpiled during the clearing and grubbing program. The stockpiles will be regularly monitored by the Environmental Advisor and treated for weeds prior to being used in site rehabilitation or landscaping works		
193	All classified weed material will be handled and disposed of lawfully.		
194	All imported material is obtained from a source that is validated as weed and plant pathogen free.		
<b>Vehicle, Plant &amp; Equipment Hygiene</b>			
195	<p>The weed inspection is a two-stage inspection process, specifically:</p> <ul style="list-style-type: none"> <li>• plant, vehicles and equipment are to be inspected by the subcontractor prior to coming to site</li> <li>• plant, vehicles and equipment are to be inspected by the site representative when machinery is onsite.</li> </ul> <p>Designated inspection areas will be at the site entrance to prevent the spread of weeds</p>		
<b>Monitoring and inspections</b>			
196	Weed monitoring will be undertaken on an annual basis during spring.		

**Table D.4**      **Summary of management and mitigation measures (biodiversity)**

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197	The HSE inspections will include the review of weeds species in the work area inspected. If a new declared species is identified, the extent of the infestation will be determined immediately, and appropriate controls put in place as soon as practicable. The potential sources will be investigated and if possible, mitigation measures to avoid further infestations will be put in place. If required, quarantine measures will be put in place to stop the spread of the infestation.
198	The following will be included as a minimum in weed management reporting: <ul style="list-style-type: none"><li>• locations and approximate areas where weed management was carried out</li><li>• treatment methods applied in each area</li><li>• species targeted.</li></ul>
199	The works shall be regularly reviewed by the HSE to ensure compliance with this strategy. This will identify inappropriate weed and pathogen management actions and identify more suitable control measures.

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**Table D.5 Summary of management and mitigation measures (water)**

<b>Water management system description</b>		<b>Phase/timing</b>
1	The water management system for the two expansion areas will be integrated with the quarry's existing water management system.	Life of the project
2	The water management system will be constructed and operated to achieve the water management objectives described in Table 4.1 and include	Construction and operation
3	Dewatering of the East Pit will cease, and the East Pit Lake will be allowed to fill to the equilibrium level range, which is estimated to be between 274 and 279 m AHD (see Section 3.4.4), below the safe spill level (280.2 m AHD).	Construction and operation
4	A piped drainage system will be installed through the fill embankment to enable the East Pit Lake to overflow to the Sediment Pond if the lake levels exceed the safe spill level (280.2 m AHD).	Construction and operation
5	By June 2025, the East Pit surface water diversion will be constructed which will minimise inflows into the East Pit from the upgradient watercourses.	Construction and operation
6	The surface water system will be expanded to manage runoff from the WEA and SEA and associated connecting haul roads.	Construction and operation
7	The East Pit Lake will continue to be utilised as a central storage that will receive water pumped from other surface water storages and supply water for operational uses.	
<b>Water management measures (from Table 4.2 of WMP)</b>		
8	Condition A8 requires that extraction must not be undertaken below a level of 285 m AHD in the WEA and 288.5 m AHD in the SEA and must be 2 m above the regional alluvial aquifer. Holcim will undertake a drilling program to validate the levels and extent of the palaeochannel in proximity to the extraction areas. This data will be used to ensure that the pit floor is at least 2 m above the top of the paleochannel (the regional alluvial aquifer).	
9	Dewatering of the East Pit Lake to Eulomogo Creek will cease, and the lake will be allowed to fill to the equilibrium level range (see Section 3.4).	
10	A piped drainage system will be installed through the fill embankment to enable the East Pit Lake to overflow to Eulomogo Creek if the lake levels exceed the safe spill level (280.2 m AHD). A potential location of piped drainage system is indicated in Figure 4.1 and Figure 3.6.	
11	The Sediment Pond is to be configured so that any overflows from the East Pit bypass the pond and flow into Eulomogo Creek.	



**Table D.5** Summary of management and mitigation measures (water)

12	Drainage works will be constructed to divert runoff from the upgradient watercourses around the East Pit, into Eulomogo Creek. A potential alignment for the diversion works is shown in Figure 4.1.
13	A preliminary design of the drainage works will be provided to DPE separately to this WMP.
14	The approved concept will be constructed, and any maintenance and monitoring requirements established during the consultation process will be implemented.
15	Drainage will be constructed and maintained such that:
16	<ul style="list-style-type: none"><li>• surface runoff does not drain away from the pit sump during intense rainfall events</li></ul>
17	<ul style="list-style-type: none"><li>• the drains do not become significantly eroded.</li></ul>
18	Where practical, the use of viaducts or fill embankments to direct water to a pit sump will be avoided.
19	The WEA and SEA pit sumps will be either dewatered to the East Pit or managed in a way that does not require discharge of surplus water. For example, water could be used to fill water carts.
20	Examples include the Settling Pond and Haul Road sedimentation dams (see Figure 4.1).
21	<ul style="list-style-type: none"><li>• Drainage, erosion and sediment controls will be constructed and maintained in all areas disturbed by the quarry that do not drain to a quarry pit. The controls will be designed, constructed and operated in accordance with the methods recommended in <i>Managing Urban Stormwater Soils and Construction: Volume 1 (Landcom 2004) and Volume 2E Mines and Quarries (DECC 2008)</i>.</li></ul>
22	<ul style="list-style-type: none"><li>• The sediment treatment volume in sedimentation dams will be dewatered to a quarry pit within 5 days following the cessation of rainfall to ensure capacity is available to capture runoff from the next event.</li></ul>
23	Operational water will be sourced from the East Pit Lake (which is a reliable water supply) or from the WEA and SEA pit sumps or sedimentation dams when water is available.
24	Chemical products, including fuels and oils will be stored and handled in accordance with relevant Australian Standard AS1940:2004 and the Bunding and spill management guidelines: Storing and Handling Liquids: Environmental Protection: Participant's Manual (DECC 2007).

**Table D.5 Summary of management and mitigation measures (water)**

25 The WEA is located on a high point in the terrain that only receives upgradient runoff from a small area that is part of the South Keswick Quarry operation. Runoff from this area is managed in the South Keswick Quarry's water management system. Hence, no clean water diversions are required for the WEA.

The SEA receives sheet flow from a 27 ha catchment located to the south-east of the extraction area, and from minor areas (1-2 ha) near the centre of the SEA. Runoff from these catchments will be diverted around the extraction area using the bunds that will be established around the perimeter of the pit. Drainage along the toe of the bunds will have a positive gradient and will therefore be free draining (ie no head water dams, earthworks or pumping will be required). The bund drains are indicated in Figure 4.1 of the WMP.

26 An erosion and sediment control plan will be prepared for any earthworks that:

- have a disturbance area greater than 0.25 ha; and
- are in an area that does not drain to a quarry pit sump.

27 Examples include, construction of the East Pit surface water diversion, construction of haul roads and initial development of the SEA and WEA.

28 Each plan will be prepared in accordance with the methods described in Managing Urban Stormwater Soils and Construction: Volume 1 (Landcom 2004) and Volume 2E Mines and Quarries (DECC 2008).

29 The ESC will be implemented during the duration of the construction works.

30 A detailed design of the Eulomogo Creek crossing, haul road sedimentation basins and the adjoining haul road areas will be prepared in consultation with DPE Water as a separate process to this WMP.

31 The approved design will be constructed, and any maintenance and monitoring requirements established during the consultation process will be implemented.

#### **Sedimentation dam overflows**

32 Runoff from quarry areas that do not drain to a quarry pit will be managed in sedimentation dams that will be sized using the methods recommended in Managing Urban Stormwater: Volume 1 (Landcom 2004) and Volume 2E (DECC 2008).

33 The sediment treatment volume within the dams will be dewatered to a quarry pit within 5 days following the cessation of rainfall to ensure capacity is available to capture runoff from the next event.

#### **Water monitoring plan**

**Table D.5 Summary of management and mitigation measures (water)**

34	Continuous water level monitoring (water level loggers).
35	Six-monthly monitoring (manual measurements).
36	Continuous water level monitoring (water level loggers).
37	Six-monthly monitoring (manual measurements).
38	Water extracted from the East Pit for operational water use.
39	Six-monthly water quality monitoring that is preferentially undertaken shortly after wet weather that results in surface water runoff.
40	Monthly water quality monitoring undertaken when overflows from the East Pit occur. When an overflow event commences, initial monitoring is to occur within three days followed by monthly monitoring until the overflow event ceases.

**Monitoring analytes and methods**

41	Analysis of Physio-chemical parameters is to be undertaken using a calibrated water quality meter OR by a NATA-certified laboratory.
42	Analysis of metals is to be undertaken by a NATA-certified laboratory. Samples are to be field-filtered using a 0.45 µm filter.

**Review and reporting**

43	<p>This WMP will be updated and revised with 12 months following the commissioning of the East Pit surface water diversion (ie by June 2026). The updated plan will address Condition B35 (Discharge Characterisation Report) and B39 (Water Management Plan) and will be prepared in consultation with the EPA and DPE Water. It will include updated modelling and will be informed by approximately 30 months of additional data, including:</p> <ul style="list-style-type: none"> <li>at least 15 months of data collected following the cessation of East Pit dewatering, which will occur during the Consent Transition Period (November 2023 to November 2024)</li> <li>approximately 9 months of data collected following both the cessation of East Pit dewatering and the commissioning of the clean water diversion.</li> </ul>
44	The trigger action plan will be addressed each year as part of the annual water management review process as seen in table 6.3.

**Table D.5 Summary of management and mitigation measures (water)**

45	Holcim will prepare an annual water management review that will include:
46	<ul style="list-style-type: none"><li>• all data from water monitoring completed over the period. The data will be reported against relevant DGVs and compared to historic trends (where available)</li></ul>
47	<ul style="list-style-type: none"><li>• an updated site water balance model informed by measured groundwater level, pit inflow and surface water data</li></ul>
48	<ul style="list-style-type: none"><li>• the outcomes from the stream and riparian condition monitoring (Section 6.1.2 of the WMP)</li></ul>
49	<ul style="list-style-type: none"><li>• calculated water take volumes for each water year (using the methodologies described in Chapter 7 of the WMP)</li></ul>
50	<ul style="list-style-type: none"><li>• information on any East Pit overflows that occurred over the period</li></ul>
51	<ul style="list-style-type: none"><li>• assessment of the trigger thresholds in the trigger action plan (Table 6.3 of the WMP)</li></ul>
52	<ul style="list-style-type: none"><li>• any proposed actions.</li></ul>
53	The review will be included in the Annual Environmental Management Report (AEMR).
54	Holcim will notify Council when East Pit discharges or overflows occur. The notification will be provided within 24 hours of a discharge occurring and will include information on the reason for the discharge and expected discharge duration.

**Water licencing approach**

55	Holcim will seek to hold water entitlements for the actual water take in each water year. If inflows to the pit occur, water take will be calculated annually using Method 1. It is noted that water take is not expected once the East Pit surface water diversion is constructed (by June 2025).
56	Holcim will seek to hold water entitlements for the actual water take in each water year. Groundwater inflows from the paleochannel to the East Pit will be calculated annually using Method 2.
57	Holcim will seek to hold water entitlements for the actual water take in each water year. Groundwater inflows from the Basalt into the East Pit will be calculated annually using Method 3.

**Annual water licence review**

**Table D.5 Summary of management and mitigation measures (water)**

58	An annual water licencing review will be completed each water year.
59	The following approach will be applied to calculate water licensing (see Section 7.6 of the WMP).
60	The following information will be included in the annual water return and management review (see section 7.6 of the WMP).
<b>Stream and riparian condition monitoring</b>	
61	Holcim will inspect the riparian condition at each location every year. During the inspection photographs will be taken to record the riparian condition.
62	Further investigations will be undertaken if the following conditions are encountered at the inspection locations or in nearby sections of watercourse: <ul style="list-style-type: none"> <li>• new significant erosion of creek bed or banks</li> <li>• new accumulation of sediment, gravel or cobbles upstream of the Haul Road culverts or downstream of quarry discharge locations.</li> </ul>
63	TARP 9 (see Table 6.3 of WMP) will be implemented if an investigation concludes that a change (ie new erosion or accumulation of alluvial material) is associated with the quarry.

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

<b>Final land use options assessment</b>		<b>Phase/timing</b>
1	Soil will be stripped and preserved prior to quarrying to ensure sufficient subsoil and topsoil volume resources to ensure pre-quarrying LSC's can be established.	Pre-quarrying
2	soils would be formed into safety bund walls around the perimeter of the WEA and SEA for future use in rehabilitation activities.	Operation
3	The final land use for the project is to reinstate the previous agricultural grazing land-use as much as possible while enhancing biodiversity values lost due to past agricultural clearing.	End of life
<b>Water management</b>		<b>Phase/timing</b>

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

RMP will be revised to address, changes to, and progression of, the quarry's future water management system.	Rehabilitation
<p>The rehabilitation water management strategy includes:</p> <ul style="list-style-type: none"> <li>• Pit walls will be recontoured via blasting and dozing to have safe and stable gradients (1 vertical to 3 horizontal).</li> <li>• The southern extension area pit floor will be regraded to drain towards Eulomongo Creek.</li> <li>• The western extension area pit floor will be regraded to drain to Pond 1 at the eastern end of the pit.</li> <li>• The existing quarry pit will be left to recharge to a maximum height of 280.18 where earthworks and associated reshaping works will enable the pit to spill into Eulomongo Creek. Timing for when the water body in the pit might reach its maximum height is further discussed in the Water Management Plan. Earthworks and reshaping works may require the removal of road embankments between the existing quarry pit and the creek at the completion of operations. These requirements will be confirmed prior 12 months prior to the operations ceasing.</li> <li>• The crest of the western and southern extension pits are to be situated above the 1% AEP flood level.</li> </ul>	Construction
<b>Land and soil capability</b>	
During quarrying the pit walls will have gradients of between 70° and 80° depending on the orientation of the walls with joints and faults.	Construction
<b>Dust and noise</b>	
Air quality and noise management plans will be implemented during operations and will be updated to include the rehabilitation phase of the project prior to rehabilitation activities commencing.	Operation and Rehabilitation
Dust management to be used during rehabilitation and closure may include those in Section 3.2.5.	Rehabilitation
Noise control during rehabilitation and closure may include those in Section 3.2.5.	Rehabilitation
<b>Weeds</b>	
Weeds will be managed through a series of control measures including those listed in Section 3.2.6.	Rehabilitation
<b>Hydrocarbons, chemicals and wastes</b>	

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

waste management practices in accordance with the quarry's Environmental Management System will continue to be implemented during rehabilitation	Operation and Rehabilitation
There is a low risk that hydrocarbon spills may also occur during soil spreading associated with rehabilitation (e.g. a burst hydraulic hose), but the impact would be isolated and spill-clean-up procedures would mitigate any potential impacts.	Operation and Rehabilitation
<b>Bushfire</b>	
To prevent or manage bushfire risks, the site bushfire management plan will continue to be implemented	Operation and Rehabilitation
A hot work permit system will be used during rehabilitation works which will take into account the risk factors for bush fires.	Rehabilitation
Machinery working on site will have spark arrestors fitted to their exhaust systems	Rehabilitation
<b>Socio-economic</b>	
Relevant stakeholders will be engaged in the rehabilitation and closure planning and implementation process	Rehabilitation
including in the development of a detailed closure plan as the project progresses towards completion	Operation and Rehabilitation
The closure plan will address socio-economic impacts at closure, post-quarrying land use and rehabilitation objectives	Operation and Rehabilitation
<b>Key rehabilitation tasks – Domain 1 Infrastructure areas</b>	
At the completion of quarrying the diversion bank will be removed and the fill batter recontoured to blend in with the profile of the existing creek bank.	Rehabilitation
Any excess fill from the recontouring works will be used to back fill water management areas or used as subsoil for rehabilitation of the quarry pits.	Rehabilitation
All buildings, plant, machinery, tanks, footings, slabs, pipelines, power lines and road pavements will be removed unless required for an alternate post-quarrying land use to be determined later in the project's life.	Rehabilitation

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

Land contamination assessments will be undertaken, and any contaminated materials will either be bioremediated on site or transported to a suitable off-site facility.	Rehabilitation
Hardstand areas will be contour ripped and soils will be ameliorated to support improved pastures.	Operation and Rehabilitation
Slopes steeper than 1(v):4(h) will be contour scarified and hydro-mulched.	Operation and Rehabilitation
Blakely's Red Gum -Yellow Box grassy tall woodlands on flats and hills in the Brigalow Belt South Bioregion and Mandewar Bioregion and Western Grey Box – cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion community species will be planted within the re-contoured fill batter on the creek bank via hydro-seeding and hydro-mulching to enhance biodiversity values.	Rehabilitation
<b>Key rehabilitation tasks – Domain 2 Water management areas</b>	
All water management areas will be rehabilitated apart from Pond 1 that will remain as a water storage and the clean water diversion drain constructed to divert upslope water around the exiting pit.	Rehabilitation
All pumps, foot-valves and pipelines will be removed.	Rehabilitation
All other water management structures will be backfilled, using embankment material and soil generated from recontouring Domain 1, and revegetated.	Rehabilitation
The highwall above Pond 1 will be recontoured via blasting and dozing in accordance with the rehabilitation practices for pit walls.	Rehabilitation
Soil stockpiles will be removed as progressive rehabilitation is undertaken.	Rehabilitation
In-situ soils in the footprint of the stockpiles will be contour scarified, ameliorated if required and direct seeded with pasture species.	Rehabilitation
<b>Key rehabilitation tasks – Domain 4 pits</b>	
Once extraction has been completed in a pit, the pit walls will be recontoured via blasting and dozing to have an overall gradient of approximately 1(v):3(h) or 18° consistent with rehabilitation undertaken to date on the south-western wall of the west pit.	Rehabilitation



**Table D.6 Summary of management and mitigation measures (rehabilitation)**

The blasted rock will be mixed with soil to form a rock/soil matrix to facilitate slope stability and a suitable growing media for the Blakely's Red Gum -Yellow Box grassy tall woodlands on flats and hills in the Brigalow Belt South Bioregion and Mandewar Bioregion and Western Grey Box – cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion communities.	Rehabilitation
This will be direct seeded via hydro-seeding and then protected with a hydro-mulch.	Rehabilitation
Subsoil and topsoil will be respread on the pit floors at sufficient depth to re-establish the pre-quarrying LSC class.	Rehabilitation
If there is a soil deficit, soil or other suitable materials with applicable waste exemptions will be imported for the purpose.	Rehabilitation
During the operation of the quarry the materials will be imported and stockpiled on the west pit for this purpose.	Operation
The floor of the WEA will be shaped so that it free drains to Pond 1.	Construction
A contamination assessment will be undertaken in the pits and extension areas and any contaminated materials either bioremediated on site or taken to an appropriate disposal facility.	Operation
Soils in the floor of the pits will be contour scarified, ameliorated if required, and seeded with pasture species.	Rehabilitation
<b>Soil management</b>	
Topsoil and subsoil stripping plans will be developed for each area prior to soil disturbance.	Construction
As part of this process, a Land Disturbance Permit system will be implemented for personnel, to ensure that stripping activities are managed appropriately.	Construction
Soil stripping and stockpiling will involve disturbance and mixing of soil; therefore, reduction in soil stability and fertility can be expected.	Construction
Where required, gypsum will be applied to the soil during stripping to reduce the potential for dispersion and reduce soil pH where high alkalinity exists.	Construction
Prior to stripping, topsoil and subsoil will be sampled to identify the soil resource prior to stripping.	Pre construction
Prior to stripping, topsoil and subsoil will be sampled to assist with the preparation of a soil balance or inventory to assist with rehabilitation planning.	Pre construction
Prior to stripping, topsoil and subsoil will be sampled to determine if the soil requires amelioration.	Pre construction

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

Soil sampling will determine if the soil requires amelioration to ensure the soils physical and chemical characteristics are within ranges necessary to address any erosion or revegetation constraints posed by the soils.	Operation
Soil exchangeable sodium levels, soil exchangeable magnesium levels and potential for clay dispersion will be assessed, with data on exchangeable cations used to calculate gypsum requirements to reduce Exchangeable Sodium Percentage (ESP) to <4% and Exchangeable Magnesium Percentage (EMP) to <20% (presence of dispersive clays will drastically increase erosion risk, and also reduce vegetation establishment and growth.)	life of the project
Additional assessment of topsoil for the presence of weeds will be undertaken as part of soil sampling.	Life of the project
Soil sampling will be undertaken at a sampling frequency of one sample per 0.8 to 4 hectares (1:10,000 scale) and will include an assessment of topsoil depth and analysis of soil characteristics as detailed in Table 5.1.	life of the project
A soil stripping and placement plan will be incorporated into the Land Disturbance Permit for each stripping event.	Life of the project
During the clearing and grubbing process grub out stumps and roots $\geq 100$ mm in diameter to a depth of 0.5 m to minimise subsoil contamination of the topsoil.	Pre construction
During the clearing and grubbing process, minimise mixing of topsoil and subsoil during grubbing.	Pre construction
Soil testing as discussed previously will be undertaken to determine amelioration requirements and rates.	Life of the project
Some ameliorants may be mixed in with the topsoil and subsoil as part of the stripping operation, irrespective if the topsoil or subsoil is to be placed in bunds around the extraction areas or directly applied to a rehabilitation area.	Pre construction
The quarry soils will require amelioration with agricultural gypsum to treat dispersion, and improve the structure, water holding capacity.	Pre construction
Fertilisers will be applied following respreading to compensate for nutrients lost from the soil when stored in the extraction area bunds.	Pre construction
Topsoil stockpiles will require amelioration and/or good mixing of the anaerobic and aerobic layers when returned to rehabilitated areas.	Pre construction
A soil stripping and placement plan will be developed for each area that is to be stripped as part of the Land Disturbance Permit process.	Pre construction
All staff and contractors will be required to obtain the relevant permit prior to clearing activities.	Pre construction
The responsible environmental personnel will advise on permits required and authorise permits prior to commencement of works.	Pre construction

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

The following process for stripping topsoil will be followed:	
the area to be stripped of topsoil will be clearly demarcated and surveyed	Pre construction
topsoil will not be stripped during excessively wet or dry conditions	Pre construction
grading or pushing soil into bunds with graders or dozers will be undertaken to form visual and noise amenity bunds around the extraction areas	Pre construction
a record will be kept of the nature and quantities of salvaged bush rocks, timber etc to ensure that the salvage of these items is maximised, in accordance with protocols outlined in the Rehabilitation Management Plan.	Pre construction
Due to the soil volume limitations for rehabilitation, all subsoil resources will be stripped and stockpiled from the footprint of the quarry area	Pre construction
the area to be stripped of topsoil will be clearly demarcated and surveyed	Pre construction
topsoil will not be stripped during excessively wet or dry conditions	Pre construction
grading or pushing soil into bunds with graders or dozers will be undertaken to form visual and noise amenity bunds around the extraction areas	Pre construction
a record will be kept of the nature and quantities of salvaged bush rocks, timber etc to ensure that the salvage of these items is maximised, in accordance with protocols outlined in the Rehabilitation Management Plan.	Pre construction
Due to the soil volume limitations for rehabilitation, all subsoil resources will be stripped and stockpiled from the footprint of the quarry area.	Pre construction
All stripped topsoil and subsoil will be used to form visual amenity and acoustic bunds around the extraction areas.	Pre construction
The topsoil will be stripped first and temporarily pushed into a windrow just beyond the outer tow of the proposed bund.	Pre construction
Soil ameliorants (most likely gypsum) will be broadcast over the exposed subsoil and will be mixed when the subsoil is pushed up to form the bund.	Pre construction
The bund will be compacted via track rolling with a bulldozer and then the topsoil will be spread over the bund and hydro-mulched with cover crops and appropriate grass species to minimise erosion and weed infestation.	Pre construction
Subsoil will respread prior to topsoil in order to re-establish an appropriate soil profile that approximates the pre-disturbance profile.	Pre construction

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

Prior to re-spreading of stockpiled topsoil, an assessment of weed infestation will be undertaken to determine if individual stockpiles require burial due to their unsuitability as a result of weed infestation.	Pre construction
The soil management process will be monitored through each step to ensure that the health of the soil is maintained, and the rehabilitation and biodiversity objectives can be achieved.	Pre construction
The Rehabilitation Management Plan will detail the testing, witness and hold points requirements for each step of the soil management process.	Pre construction
All stripped topsoil and subsoil will be used to form visual amenity and acoustic bunds around the extraction areas.	Pre construction
The topsoil will be stripped first and temporarily pushed into a windrow just beyond the outer tow of the proposed bund.	Pre construction
Soil ameliorants (most likely gypsum) will be broadcast over the exposed subsoil and will be mixed when the subsoil is pushed up to form the bund.	Pre construction
The bund will be compacted via track rolling with a bulldozer and then the topsoil will be spread over the bund and hydro-mulched with cover crops and appropriate grass species to minimise erosion and weed infestation.	Pre construction
Subsoil will respread prior to topsoil in order to re-establish an appropriate soil profile that approximates the pre-disturbance profile.	Pre construction
Prior to re-spreading of stockpiled topsoil, an assessment of weed infestation will be undertaken to determine if individual stockpiles require burial due to their unsuitability as a result of weed infestation.	Pre construction
The soil management process will be monitored through each step to ensure that the health of the soil is maintained, and the rehabilitation and biodiversity objectives can be achieved.	Pre construction
The Rehabilitation Management Plan will detail the testing, witness and hold points requirements for each step of the soil management process.	Life of the project
<b>Establishment of vegetation</b>	
On the pit walls and western side of Eulomogo Creek, native seed will be sowed using a hydro-seeder followed by the application of a straw-based hydro-mulch and hydro-colloid binder to protect the seed and soil from compact and erosion by rainfall and erosion from overland flow.	Life of the project
Cover crops will be used with all seeding activities to provide erosion protection and minimise the potential for weed invasion.	Construction

**Table D.6 Summary of management and mitigation measures (rehabilitation)**

An environmental work method statement including an erosion and sediment control plan will be prepared prior to undertaken these rehabilitation work to ensure risks are identified and appropriately managed and mitigated.	Operation
<b>Erosion and sediment control</b>	
The floor of the WEA will drain to Pond 1 in the western pit and will ultimately be contained.	Construction
A sump will be excavated in the floor of the SEA to contain turbid runoff and this will be retained until approximately 60% soil surface cover has been achieved.	Construction
A water management plan will be prepared for the project that will include an overarching erosion and sediment control plan.	Construction
<b>Rehabilitation monitoring</b>	
Rehabilitation monitoring will be undertaken annually once rehabilitation commences, using analogue sites and Landscape Function Analysis (LFA) to assess rehabilitation progress and success and an annual rehabilitation report will be prepared.	Rehabilitation
A summary or Rehabilitation monitoring will be provided in the Annual Review.	Rehabilitation
<b>Rehabilitation implementation</b>	
rehabilitation sites will be monitored simultaneously to the reference sites over time to account for changes in:	Rehabilitation
1. seasonal variations	Rehabilitation
2. climatic conditions	Rehabilitation
3. management practices	Rehabilitation
4. unexpected disturbance events such bushfire.	Rehabilitation
All domains will have all or part grazing post-mining land use.	Rehabilitation
Holcim will include grazing productivity parameters in the rehabilitation monitoring program.	

**Table D.6**      **Summary of management and mitigation measures (rehabilitation)**

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Rehabilitated areas will be assessed against performance indicators and regularly (at least on an annual basis) inspected for the following aspects:

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evidence of any erosion or sedimentation

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success of initial establishment cover

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natural regeneration of improved pasture

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weed infestation (primarily noxious weeds, but also where rehabilitation areas are dominated by other weeds)

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integrity of drainage, erosion and sediment control structures

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general stability of the rehabilitation areas.

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Where rehabilitation criteria have not been met, maintenance works will be undertaken.

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The spread of declared noxious weeds (and other invasive weeds that could impact revegetation success and/or plants that are undesirable to grazing stock) will be managed across the project area through a series of control measures listed in Section 5.5.2.

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tracks will be kept to a practical minimum and will be designated prior to the completion of the project.

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Controls will be implemented to minimise the potential for impacts on public safety, and may include maintenance of fencing and warning signs around areas that have the potential to cause harm and are that are accessible to the public.

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An assessment of the regraded pit walls will be undertaken to determine if there are any large rocks present that may provide a safety risk post closure of the quarry.

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A rehabilitation management plan will be developed to provide a structured and documented process for managing and improving rehabilitation activities at the quarry.

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**Table D.6 Summary of management and mitigation measures (rehabilitation)**

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The rehabilitation management plan will have two focus areas:

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1. The integration of rehabilitation activities between the various departments within the quarry organisational structure through all stages of the rehabilitation process. To achieve this, the rehabilitation management plan will separate the rehabilitation process into different phases and outline responsibilities at each stage with hold and witness points.
  2. The second focus is on establishing effective and robust monitoring methods with clear guidelines on the process to be followed to achieve quarry rehabilitation objectives, and a means to record the process followed and results obtained.
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A review of the monitoring frequency will be undertaken based on the performance of the revegetation and an appropriate monitoring frequency determined.

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The frequency will be determined by a suitably qualified person(s) and in consultation with the relevant regulatory authorities.

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Informal monitoring of rehabilitation by quarry personnel will also be undertaken.

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Representative analogue sites will be established for grazing areas and woodland communities prior to commencement in the SEA and WEA.

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Permanent transects and quadrats will be established for rehabilitation monitoring in analogue and rehabilitation areas over time.

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Soil samples will be taken using a core sampler within a monitoring quadrat at each rehabilitation monitoring site and soil samples will be sent to a National Association of Testing Authorities (NATA) accredited laboratory for analysis.

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Soil samples are analysed for the following parameters: pH, electrical conductivity, available calcium, magnesium, potassium, ammonia, sulphur, organic matter, exchangeable sodium, calcium, magnesium, potassium, hydrogen, aluminium, cation exchange capacity, available and extractable phosphorus, micronutrients (zinc, manganese, iron, copper, boron) and total carbon and nitrogen.

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Exchangeable sodium percentages will be calculated to determine sodicity and soil dispersion.

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For the native woodland and riparian rehabilitation, various biodiversity components will be assessed to monitor the successional phases/changes of plant development and to identify the requirements for ameliorative measures and guide adaptive management.

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Rapid ecological assessment techniques will be used to provide quantitative data to monitor changes listed in Section 7.1.4.

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**Table D.6 Summary of management and mitigation measures (rehabilitation)**

As large portions of the site will be returned to a grazing post-mine land use, rehabilitation monitoring will also include indicators of grazing productivity, such as those listed in 7.1.4.

**Rehabilitation research and continual improvement**

Periodic review of this plan will be undertaken in response to:

- any of the events identified in condition D5 of SSD 10417
- substantial changes in industry related rehabilitation practices.

Rehabilitation

**Intervention and adaptive management**

If rehabilitation monitoring identifies that rehabilitation has not achieved necessary performance standards, the trigger action response plan (Table 9.1) will be used to guide remedial actions.

Rehabilitation



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# Appendix E

## Summary of monitoring program

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## E.1 Summary of monitoring programs

A summary of the various monitoring programs outlined in the post-approval management plans is provided below, as follows:

- Noise management plan (Table E.1)
- Traffic management plan (Table E.2)
- Air quality management plan (Table E.3)
- Biodiversity management plan (including biodiversity offset strategy) (Table E.4)
- Water management plan (Table E.5)
- Rehabilitation management plan (Table E.6).

Holcim also has an Aboriginal cultural heritage management plan, however there are no monitoring requirements associated with this plan.

**Table E.1 Summary of monitoring program (noise)**

<b>Attended noise monitoring</b>	
Objective	To verify that noise emissions from the facility satisfy the relevant noise limits at all privately-owned residences.
Where	R2, R3, R4, R5 (see Appendix C of this EMS)
Frequency	At least annually
When	During the day (7:00 am–6:00 pm) and night (4:00 am–6:00 am) periods.
What	Attended noise monitoring will consist of a 15-minute measurement at each monitoring location.
Noise Monitoring Standards	<p>The attended noise monitoring will be undertaken by a competent person as defined in the EPA's Approved Methods.</p> <p>Noise monitoring shall be undertaken in accordance with the relevant Australian standards and EPA guidelines including:</p> <ul style="list-style-type: none"> <li>• AS 1055.1-2018</li> <li>• AS IEC 61672.1-2019</li> <li>• Npfl</li> <li>• EPA's Approved Methods.</li> </ul> <p>All acoustic instrumentation shall have current NATA or manufacturer calibration certificates.</p>
<b>Real time noise monitoring</b>	
Objective	To determine the potential noise impacts from the quarry.
Where	At the RNTM location (see Appendix C of this EMS).
Frequency	During operation of the quarry

**Table E.1 Summary of monitoring program (noise)**

When	24-hour continuous data
What	One Real Time Noise Monitor (RTNM) provides 24-hour continuous data, including LA1, LA10, LA90, LAmin, LAeq, LAmax recorded at 15-minute intervals. The RTNM unit Noise loggers for unattended noise monitoring will have one-third octave frequency bands and audio recording capabilities to help qualify the acoustic environment (identify source characteristics). A filtered (low-pass) LAeq has been included to exclude data influenced by insects, birds and other noise sources above 1000 Hz. The RTNM unit has directional capabilities, which will aid in excluding extraneous sources (unrelated to operational sources from site) outside the angle of interest set for the site.
Noise Monitoring Standards	<p>Noise monitoring shall be undertaken in accordance with the relevant Australian standards and EPA guidelines including:</p> <ul style="list-style-type: none"> <li>• AS 1055.1-2018</li> <li>• AS IEC 61672.1-2019</li> <li>• NPfl</li> <li>• EPA's Approved Methods.</li> </ul> <p>All acoustic instrumentation shall have current NATA or manufacturer calibration certificates.</p>

**Review of noise monitoring program**

The noise monitoring program is to be reviewed at a minimum every three years to evaluate its efficacy and to ensure it remains adequate to fully assess noise from current quarry activities.

**Noise exceedance protocol**

Applicability	If attended noise monitoring identifies that any of the relevant noise limits has been exceeded.
Protocol	<p>Noise monitoring personnel to notify the Quarry Manager and advise of quarry noise level and applicable limits. The Quarry Manager to confirm if operational activities can be modified relatively efficiently.</p> <p>Operational changes are to be made as soon as practicable (target within 30 minutes) of receiving notification. The Quarry Manager is responsible for conveying a response back to the person conducting the attended noise monitoring.</p> <p>The person conducting the attended noise monitoring re-monitors (additional 15 minute measurement) and contacts Quarry Manager with follow-up results as soon as practicable.</p> <p>If measured quarry noise remains above the relevant limit, additional re-monitoring (following steps 1 to 3) is to be conducted on two more occasions for a total of up to three follow-up 15 minute measurements.</p> <p>If necessary, stop operations or the activity causing the exceedance to ensure compliance with the relevant noise limits.</p>

**Table E.1 Summary of monitoring program (noise)**

	<p>The Quarry Manager is to document any actions implemented following the notification of the noise exceedance.</p> <p>The exceedance is required to be reported to DPE and EPA by the Quarry Manager (or delegate) as soon as practicably possible upon Holcim becoming aware of the exceedance.</p> <p>An additional attended noise monitoring survey shall be completed within one week if quarry noise could not be effectively reduced to achieve the relevant limits at the time of the survey.</p>
	<p>Holcim will submit a report to DPE through the Department’s Major Projects website detailing the non-compliance. This report will:</p> <ul style="list-style-type: none"> <li>• identify the quarry application number and name</li> <li>• describe the date, time, and nature of the exceedance/incident</li> <li>• identify the cause (or likely cause) of the exceedance/incident</li> <li>• describe what actions have been taken to date to address the exceedance/incident</li> <li>• describe the proposed measures to address the exceedance/incident.</li> </ul> <p>Attended noise monitoring reports will be made available upon request.</p>
Noise monitoring reports	<p>The noise monitoring report will be prepared annually and will include:</p> <ul style="list-style-type: none"> <li>• summary of attended noise monitoring methodology and results</li> <li>• measured, calculated and/or operator-estimated site LAeq,15min and LAmax noise levels for each monitoring location</li> <li>• statement of compliance/non-compliance.</li> </ul>

**Table E.2 Summary of monitoring program (traffic)**

Records to be kept	<p>All laden heavy vehicle movements from the site (including hourly and daily heavy vehicle movements). Heavy vehicle movements from the site will be recorded at the weighbridge by the weighbridge operator. Where hourly limits are reached, the weighbridge operator will notify the site manager and the weighbridge operator will instruct product trucks to remain within the site until the hour is reached. Where daily limits are reached, the weighbridge operator will notify the site manager, the weighbridge operator will instruct any vehicles approaching the site to return to their destination.</p> <p>Note, Holcim must limit heavy vehicles leaving the site to:</p> <ul style="list-style-type: none"> <li>• 20 laden truck movements per hour</li> <li>• 121 laden truck movements per day.</li> </ul> <p>The volume of quarry products transported from the site per calendar year.</p> <p>The cumulative total will be tracked each month to ensure that projected volumes required to be transported or received for the calendar year will remain within limits. If required to remain within calendar year limits, projected volumes will be revised.</p> <p>Note, Holcim must not transport more than 500,000 tonnes of quarry products by road from the site in any calendar year.</p>
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**Table E.2 Summary of monitoring program (traffic)**

	<p>The volumes of fly-ash and concrete washout materials received at the site per calendar year.</p> <p>The cumulative total will be tracked each month to ensure that projected volumes required to be transported or received for the calendar year will remain within limits. If required to remain within calendar year limits, projected volumes will be revised.</p> <p>Note, Holcim must not receive at the site:</p> <ul style="list-style-type: none"> <li>• more than 3,000 tonnes of fly ash in any calendar year</li> <li>• more than 3,000 tonnes of concrete washout materials in any calendar year.</li> </ul>
Monitoring records	<p>The traffic management plan monitoring records are to be included in the Annual Review (period of one calendar year) and Independent Environmental Audit (period of three calendar years or more).</p> <p>Monitoring records are to be retained for a period of no less than four years.</p>
Review of monitoring program	<p>The TMP is to be reviewed to monitor its effectiveness after the first 12 months, with the frequency of subsequent reviews to be determined following the outcome of the first review.</p>

**Table E.3 Summary of monitoring program (air quality)**

Objective	To confirm air pollutant concentrations near the quarry are below the air quality criteria.
Where	<p>Monitoring will be undertaken using the PM<sub>10</sub> monitors at the quarry (Appendix C):</p> <ul style="list-style-type: none"> <li>• PM<sub>10</sub> monitor 1 – on the north-eastern boundary</li> <li>• PM<sub>10</sub> monitor 2 – on the south-western boundary.</li> </ul>
Frequency	<p>Continuous (hourly or sub-hourly).</p> <p>At the end of a 12-month period, demonstrated compliance with the development consent air quality criteria for PM<sub>10</sub> (see Table 3.1 of the AQMP) will represent a key performance measure for the quarry (see Section 4.1.6 of the AMMP).</p>
When	Commencement of operations
Monitoring equipment and method	<p>PM<sub>10</sub> concentrations will be measured using a Tapered Element Oscillating Microbalance (TEOM) or an equivalent monitor in accordance with the methods in the <i>Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales</i> (NSW EPA 2022b).</p> <p>Data from the real-time monitors will be compared with concurrent real-time onsite meteorological monitoring data from the quarry to determine the source(s) of recorded concentrations. Monitoring will be in accordance with AS/NZS 3580.1.1:2016: <i>Methods for sampling and analysis of ambient air - Part 1.1: Guide to siting air monitoring equipment</i>; and Australian Standard AS 3580.14-2014 <i>Methods for sampling and analysis of ambient air Part 14: Meteorological monitoring for ambient air quality monitoring applications</i>.</p>

**Table E.3 Summary of monitoring program (air quality)**

<p>Total suspended particulate matter (TSP) and PM<sub>2.5</sub> concentrations</p>	<p>The air quality monitoring program described in the AQMP relates to real-time monitoring of PM<sub>10</sub> concentrations. This is considered appropriate on the basis of the model predictions in the AQIA (EMM 2021a), which show that PM<sub>10</sub> represents the key air pollutant with regards to compliance with relevant air quality impact assessment criterion.</p> <p>In order to determine compliance with the relevant consent air quality criteria (of the AQMP) for TSP and PM<sub>2.5</sub>, the following will be applied:</p> <ul style="list-style-type: none"> <li>• Consistent with Section 4.3.3 of the AQIA (EMM 2021a), annual average TSP concentrations will be derived by <u>dividing</u> the recorded annual average PM<sub>10</sub> concentrations by 0.4.</li> <li>• The regional DPE PM<sub>10</sub> and PM<sub>2.5</sub> datasets referenced in Section 4.3.1 and Section 4.3.2 of the AQIA (EMM 2021a) return a PM<sub>2.5</sub>:PM<sub>10</sub> ratio of 0.48. To infer 24-hour average and annual average PM<sub>2.5</sub> concentrations, the recorded PM<sub>10</sub> concentrations will be <u>multiplied</u> by a factor of 0.48.</li> </ul>
<p>Managing exceedances</p>	<p><b>Identifying exceedances</b></p> <p>To be identified using the air quality monitoring network and trigger action response plan (TARP) outlined in Appendix B of the AQMP. Exceedances of the criteria will be addressed in accordance with the requirements of condition D8 of the development consent.</p> <p>Exceedances of air quality criteria will be identified using the proposed air quality monitoring network (see the AQMP) and the criteria listed in the AQMP. An investigation of the exceedance will be completed using information relevant to the time of the exceedance such as quarry operations and meteorological conditions. This will be used to determine whether the exceedance was the result of the quarry or not.</p> <p>A TARP will be used in conjunction with the monitoring program to identify exceedances of the air quality criteria and to allow the appropriate site personnel to respond with additional management and mitigation measures.</p> <p><b>Non-compliance notification</b></p> <p>Non-compliance notifications will be addressed in accordance with the requirements of condition D8 of the development consent.</p> <p>Within seven days of becoming aware of a non-compliance, Holcim will notify DPE of the non-compliance.</p> <p>The notification will be made in writing through DPE’s Major Projects website and will:</p> <ul style="list-style-type: none"> <li>• identify the development (including the application number and name)</li> <li>• set out the condition of the development consent that has not been complied with</li> <li>• explain why it does not comply</li> <li>• provide the reasons for non-compliance (if known)</li> <li>• state the actions that have been or will be undertaken to address the non-compliance.</li> </ul> <p>It is noted that a non-compliance that has been notified as an incident does not also need to be notified as a non-compliance under condition D8 of the development consent.</p>
<p>Review of monitoring program</p>	<p>The air quality monitoring program will be reviewed at least every three years, when updates to the plan are required, or as directed by the Secretary in consultation with other agencies. The review process is to reflect changes in environmental legislation and guidelines, and changes in technology or operational procedures.</p>

**Table E.4 Summary of monitoring program (biodiversity management plan (including biodiversity offset strategy))**

Biodiversity monitoring will be undertaken to monitor and report on the effectiveness of the measures included in the biodiversity management plan, and to progressively include improvements in the program that could be implemented to improve biodiversity outcomes. Further detail can be found in Table 6 of the biodiversity management plan.

Reporting	An annual monitoring report will be prepared with the results of the year’s biodiversity monitoring outcomes.
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Review of monitoring program	The biodiversity monitoring program will be reviewed with the review of the biodiversity management plan.
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**Habitat salvage**

Objective	Salvage and maintenance of habitat within the project area
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Performance criteria/ target	<ul style="list-style-type: none"> <li>• The Project Ecologist will mark all habitat to be salvaged prior to vegetation removal works.</li> <li>• All marked habitat for salvage will either be relocated as part of the pre-clearing survey or stockpiled for later relocation.</li> <li>• As part of the Pre-clearing Survey Report, the Project Ecologist will identify the location of all habitat to be salvaged for the clearing program as well as possible relocation areas.</li> <li>• The location, and date of storage, of all stored top soil will be recorded.</li> </ul>
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Performance/ completion measure	10 m of hollow logs or coarse woody debris salvaged and placed within Management Zone 3 or 4, or, installation of artificial hollows at a ratio of 1:1 (from what was removed during clearing) within Management Zone 4.
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Annual target	Marked habitat items are salvaged from clearing/ disturbance footprint.
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Frequency and timing	Identification and salvage of habitat elements will occur prior to clearing activities.
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Triggers, corrective actions and response	<p>If marked habitat was not salvaged from clearing/ disturbance footprint, a review of the habitat salvage procedure should be undertaken and alternative habitat compensation measures should be investigated (e.g. artificial hollows).</p> <p>Alternative habitat compensation measures implemented within one year from the commencement of operations. Where artificial hollows are installed as a compensation measure corrective action, they should be maintained (i.e. ensure they are able to function as habitat) for five years.</p>
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Reporting	All habitat identified for salvage by the Project Ecologist will be detailed in a Pre-clearing Survey Report (following completion of pre-clearing surveys). Relocated habitat will be detailed (e.g. habitat type, location) within the annual monitoring report.
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**Weed management**

Objective	To monitor weeds and ensure there is no increase in weed abundance as a result of project activities. The annual target is that all priority weed cover is in the very low or low category ( $\leq 10\%$ ), with no establishment of new priority weeds.
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Performance criteria/ target	Cover of existing priority weeds for vegetation zones with a baseline moderate infestation (or higher) reduced to very low or low categories within one year following the commencement of clearing.
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**Table E.4 Summary of monitoring program (biodiversity management plan (including biodiversity offset strategy))**

Performance/ completion measure	Cover of priority weeds in BAM VI plots.
Annual target	All priority weed cover in the very low or low category ( $\leq 10\%$ ). No establishment of new priority weeds.
Frequency and timing	Cover of priority weeds to be monitored within one year from commencement of quarrying operation to be undertaken in spring. Priority weed monitoring to be undertaken annually (in spring) thereafter.
Triggers, corrective actions and response	If weed cover increases past the trigger point of 50% more than baseline data or exceeds 10% within a vegetation zone, weed control procedures will be reviewed. Increasing intensity of weed control for the target weed will be considered and weed mapping survey of the project area will be conducted within three months of implementation of corrective actions to assess the efficacy.
Reporting	Management and control will be recorded and will form part of the annual monitoring report.
<b>Pest species management</b>	
Objective	To monitor pest species abundance and ensure there is no increase in weed abundance as a result of project activities
Performance criteria/ target	No more than eight detections of previously unrecorded pest mammal species. No more than 10 detections of <i>Vulpes vulpes</i> (Red Fox) and 16 detections of <i>Rattus rattus</i> (Black Rat).
Performance/ completion measure	Number of detections during a monitoring session.
Two-year target	Less than 100% increase in detections of known pest mammal species (number of nights detected summed across all camera traps) from baseline levels. No more than eight detections of previously unrecorded pest mammal species.
Frequency and timing	Every two years (spring), with the first round of monitoring to occur in spring 2025.
Triggers, corrective actions and response	If there are more than eight detections of previously unrecorded pest mammal species during a monitoring session, or there is equal to, or greater than 100% increase in detections of known pest mammal species from baseline, then repeat monitoring within 12 months to determine whether increase is a result of natural population fluctuation or changes in behaviour. If results of re-sampling still meet the trigger point, contact a pest species officer for advice (e.g. active control). If an increase in herbivorous pest species (e.g. rabbits, pigs) are detected in MZ 3, fortification or replacement of plant guards is to be implemented.
Reporting	Results of monitoring and any corrective actions to be included in the annual monitoring report for the year the pest monitoring was undertaken.
<b>Collection and propagation of seeds</b>	
Objective	Seeds from native species representative of PCT 599 will be collected prior clearing to be sown within revegetated areas.
Performance criteria/ target	Native seeds collected from a minimum of three native species representative of PCT 599.



**Table E.4 Summary of monitoring program (biodiversity management plan (including biodiversity offset strategy))**

Performance measure	Native species representative of PCT 599.
Annual target	Collection and propagation of native seeds.
Frequency and timing	Collection and propagation of seeds will occur annually during summer.
Triggers, corrective actions and response	If seeds are unable to be collected or propagated, within 6 months, native seed consisting of characteristic PCT 599 species will instead be sourced from a local nursery or community group.
Reporting	All seed collection and propagation information will form part of the annual monitoring report.
<b>Vegetation screening</b>	
Objective	To ensure a Vegetation Integrity (VI) score >50% at the end of life for the quarry.
Performance criteria/target	90% survival rate of all plantings after one year, and Gradual and continual increase in VI score.  Revegetation efforts must not cause the benchmarks for the mid and upper stratum of community (PCT 599) to be exceeded.
Performance measure	Survival of plantings and VI score.
Annual target	Vegetation Integrity score increase >5% over 12 months.
Frequency and timing	Baseline VI score will be determined in spring prior to the commencement of quarrying operations. Monitoring of plantings and VI score will occur annually in spring thereafter.
Triggers, corrective actions and response	If there is a decline in species abundance such that it reduces their overall cover (measured by the BAM plot) and/or a decline in species diversity, then relevant management actions will be reviewed. Infill planting with species characteristic of PCT 599 sourced from a local nursery or local educational/ land care group will be considered. If certain species exceeds the benchmark threshold, advice will be sought from a qualified ecologist for the best course of action.
Reporting	All vegetation condition data will be collected annually in spring and detailed within the annual monitoring report.
<b>Enhancing biodiversity (condition of retained vegetation)</b>	
Objective	Vegetation Integrity (VI) score increased by 5% (or more) within each vegetation zone at the end of life for the quarry. If abiotic factors such as drought or flood (i.e. not quarry related) are shown to have impacted the condition of the vegetation, the completion criteria will be that exotic species abundance and cover is less than 50% of baseline levels after 5 years.
Performance criteria/target	No decline in vegetation condition within each vegetation zone.
Performance measure	VI score.
Annual target	No decrease in VI score.

**Table E.4 Summary of monitoring program (biodiversity management plan (including biodiversity offset strategy))**

Frequency and timing	Baseline VI score will be determined in spring prior to the commencement of quarrying operations. Monitoring of vegetation and VI score will occur annually in spring thereafter.
Triggers, corrective actions and response	Should there be a quarry-related cause of VI decline below baseline levels, efforts to enhance biodiversity (e.g. weed and pest management, habitat salvage) must be reviewed with consideration given to increased efforts for the specific biodiversity components that are lacking or in decline. Should abiotic factors such as drought or flood cause the decline in VI score, consideration should be given to obtaining new baseline VI scores for each zone.
Reporting	All vegetation condition data to be detailed within the annual monitoring report.

**Table E.5 Summary of monitoring program (water)**

The water monitoring program includes groundwater and surface water monitoring at key locations and metering of operational water use. The monitoring data will be used to:

- inform the calculation of surface and groundwater take each water year for water licensing purposes
- characterise any East Pit overflows that occur following the commencement of the Continuation Project.

The data can also be used to inform future calibration of the water balance model and water management studies, should they be required.

<b>Water level monitoring</b>			
Where	Paleochannel	Surface water	Basalt
Objective	To monitor the groundwater level regime in the paleochannel and collect data that can be used to assess connectivity with the East Pit	To monitor changes in lake levels and to collect data that can be used to calculate groundwater and surface water take volumes and overflow durations and volumes. Upgradient watercourses will also be monitored to identify periods that runoff occurs.	To monitor the groundwater level
Where	<ul style="list-style-type: none"> <li>• DQRC-17 – bore south of southern extension area</li> <li>• DQRC-22 – bore between east pit and southern extension area and east of haul road</li> </ul>	<ul style="list-style-type: none"> <li>• East Pit Lake</li> <li>• Upgradient watercourse</li> </ul>	<ul style="list-style-type: none"> <li>• Around southern extension area: Bores DQRC- 18, 20, 21, 23, 24, 25,</li> <li>• Around western extension area: Bores DQRC- 26, 27</li> </ul>
Frequency	<ul style="list-style-type: none"> <li>• Continuous water level monitoring (water level loggers)</li> <li>• Six-monthly monitoring (manual measurements)</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous water level monitoring (water level loggers)</li> </ul>	<ul style="list-style-type: none"> <li>• Six-monthly monitoring (manual measurements)</li> </ul>

**Table E.5 Summary of monitoring program (water)**

<b>Water metering</b>			
Objective	To measure the volume of water extracted from the East Pit for operational use (plant and dust suppression)		
Where	Water meter with the reticulation line between the extraction and use points		
Frequency	Continuous		
<b>Water quality</b>			
What	Paleochannel	Surface water (regular)	Surface water (overflow)
Objective	To characterise the water quality in the paleochannel, at key locations in the water management system	To characterise the water quality in Eulomogo Creek, at key locations in the water management system	To characterise the quality of overflows from the East Pit and any changes to the water quality in Eulomogo Creek.
Where	<ul style="list-style-type: none"> <li>• DQRC-17</li> <li>• DQRC-22</li> </ul>	<ul style="list-style-type: none"> <li>• East Pit Lake</li> <li>• WEA Sump</li> <li>• SEA Sump</li> <li>• Settling Pond</li> <li>• Upgradient watercourses<sup>1</sup> / East Pit Diversion (US)<sup>2</sup></li> <li>• East Pit Diversion (DS)<sup>2</sup></li> <li>• Eulomogo Creek (US)</li> <li>• Eulomogo Creek (DS)</li> </ul>	<ul style="list-style-type: none"> <li>• East Pit overflow</li> <li>• Eulomogo Creek (US)</li> <li>• Eulomogo Creek (DS)</li> </ul>
Frequency / timing	Six-monthly water quality monitoring that is preferentially undertaken shortly after wet weather that results in surface water runoff.	Six-monthly water quality monitoring that is preferentially undertaken shortly after wet weather that results in surface water runoff.	Monthly water quality monitoring undertaken when overflows from the East Pit occur. When an overflow event commences, initial monitoring is to occur within three days followed by monthly monitoring until the overflow event <sup>3</sup> ceases.
<b>Riparian condition</b>			
Objective	To monitor riparian condition.		
Where	Riparian condition monitoring locations (see figure C.2 in Appendix C).		
Frequency/ timing	Annual inspections and photographs of riparian condition at monitoring locations.		
Notes:	<ol style="list-style-type: none"> <li>1. Monitoring location applies to prior to the construction of the East Pit surface water diversion.</li> <li>2. Monitoring location applies to after to the construction of the East Pit surface water diversion.</li> <li>3. An overflow event could comprise overflows that occur intermittently for an extended period of time during wet conditions.</li> </ol>		

**Table E.6 Summary of monitoring program (rehabilitation management plan)**

Objective	<p>To provide meaningful information of rehabilitation trajectories and when intervention is required. Monitoring results will be used to assess whether rehabilitation areas are on a trajectory towards a self-sustaining landscape.</p> <p>Monitoring will be conducted in rehabilitation areas with the following final land use:</p> <ul style="list-style-type: none"> <li>• Infrastructure</li> <li>• Grazing</li> <li>• Biodiversity</li> <li>• Final voids</li> </ul>
Frequency	<p>Monitoring will be undertaken annually during operations and for approximately five years following quarry closure (or less if the rehabilitation criteria have been met)</p>
Reporting	<p>Rehabilitation activities, monitoring and progress towards achieving agreed rehabilitation criteria will be included within an annual rehabilitation report.</p>
What	<p>Rehabilitation monitoring will be undertaken annually once rehabilitation commences, using analogue sites and Landscape Function Analysis (LFA) to assess rehabilitation progress and success.</p> <p>Permanent transects and quadrats will be established for rehabilitation monitoring in analogue and rehabilitation areas over time. These will include permanent photo monitoring points.</p> <p>A variety of parameters will be monitored depending on the expected final land use.</p>
<b>Soil sampling</b>	
	<p>Soil samples will be taken using a core sampler within a monitoring quadrat at each rehabilitation monitoring site.</p> <p>The following analytes will be test: pH, electrical conductivity, available calcium, magnesium, potassium, ammonia, sulphur, organic matter, exchangeable sodium, calcium, magnesium, potassium, hydrogen, aluminium, cation exchange capacity, available and extractable phosphorus, micronutrients (zinc, manganese, iron, copper, boron) and total carbon and nitrogen. Exchangeable sodium percentages are also calculated to determine sodicity and soil dispersion.</p> <p>The parameters to be tested will be reviewed and may reduce over time as a better understanding of project soils and the key parameters are understood</p>
<b>Erosion and landform</b>	
	<p>Survey and inspections will be undertaken to determine:</p> <ul style="list-style-type: none"> <li>• any evidence of erosion or sedimentation</li> <li>• integrity of drainage, erosion and sediment control structures</li> <li>• general stability of the rehabilitation areas.</li> </ul>

**Table E.6 Summary of monitoring program (rehabilitation management plan)**

<b>Biodiversity and ecology sampling</b>	
<p>Rapid ecological assessment techniques will be used to provides quantitative data that measures changes in:</p> <ul style="list-style-type: none"> <li>• floristic diversity using full floristic sampling</li> <li>• ground cover diversity and abundance</li> <li>• vegetation structure and habitat characteristics</li> <li>• understorey density and growth</li> <li>• overstorey characteristics</li> <li>• other habitat attributes such as the presence of hollows, mistletoe and the production of buds, flowers and fruit.</li> </ul> <p>Permanent transects and photo-points will be established to record changes in these attributes over time.</p>	<p>Applicable to:</p> <ul style="list-style-type: none"> <li>• Final land use domain – Biodiversity</li> </ul>
<b>Grazing productivity</b>	
<p>As large portions of the site will be returned to a grazing post-mine land use, rehabilitation monitoring will also include indicators of grazing productivity such as:</p> <ul style="list-style-type: none"> <li>• stock carrying capacity</li> <li>• pasture crude protein levels</li> <li>• digestibility</li> <li>• dry matter content.</li> </ul>	<p>Applicable to:</p> <ul style="list-style-type: none"> <li>• Final land use domain – Grazing</li> </ul>
Trigger Action Response Plan	<p>If rehabilitation monitoring identifies that rehabilitation has not achieved necessary performance standards, the trigger action response plan (Table 9.1 in the RMP) will be used to guide remedial actions.</p>
Review of monitoring program	<p>Specific monitoring methods applied will be determined in the rehabilitation management plan and will be flexible in consideration of advancing technologies and changes to industry best practice.</p> <p>Review of the rehabilitation management plan will be undertaken in response to:</p> <ul style="list-style-type: none"> <li>• any of the events identified in condition D5 of SSD 10417</li> <li>• substantial changes in industry related rehabilitation practices.</li> </ul> <p>Review of the monitoring program will occur with the review of the RMP.</p> <p>Monitoring frequency will be reviewed approximately five years following quarry closure (or less if the rehabilitation criteria have been met). Revised monitoring frequency will be based on the performance of the revegetation and an appropriate monitoring frequency will be determined. The frequency will be determined by a suitably qualified person(s) and in consultation with the relevant regulatory authorities.</p>

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# Appendix F

## Hold points

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## F.1 Hold points (time triggered actions)

The following hold points apply to activities covered by SSD-10417:

- A5. One month before the date of commencement of the development, or other timeframe agreed by the Planning Secretary:
  - a) A registered surveyor must be engaged to mark out the boundaries of the approved extraction areas with the site (as set out in Appendix 2).
  - b) The Planning Secretary must be provided with a survey plan of such boundaries and their GPS coordinates.
- A7. Quarrying operations may be carried out on the site for a period of 25 years from the date of the commencement of the development.
- A14. The date of commencement of each of the following phases of development must be notified to the Department in writing, at least one month before that date:
  - a) Commencement of development under this consent.
  - b) Commencement of quarrying operations.
  - c) Cessation of quarrying operations.
  - d) Any period of suspension of quarrying operations.
- A15. Within 12 months of the commencement of the development under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must surrender the existing development consent for the Dubbo Quarry, issued by the former Talbragar Shire Council in accordance with the EP&A Regulation.
- A16. Upon commencement of the development under this consent, and before the surrender of the existing development consent required under condition A15, the conditions of this consent prevail to the extent of any inconsistency with the conditions of the existing consent.
- A17. Within three months of the commencement of quarrying operations or other timeframe agreed by the Planning Secretary, the Applicant must enter into a Planning Agreement with Council in accordance with:
  - a) Division 7.1 of Part 7 of the EP&A Act.
  - b) The terms detailed in Table F.1.

**Table F.1 Planning agreement contribution**

Item	Contribution amount and purpose	Timing
Contribution Part 1	Single lump sum payment of \$600,000 (plus 1 year of CPI) for improvements to Sheraton Road nearby the schools (towards Mitchell Highway), along the proposed transport route.	Payable to Council within 1 year of commencement of the quarrying operations.

**Table F.1 Planning agreement contribution**

Item	Contribution amount and purpose	Timing
Contribution Part 2	Payment to Council of 10c per tonne for maintenance of Sheraton Road, along the proposed transport route.	Following commencement of the quarrying operations, to be paid twice per year for quarry product haulage over a six month period, as agreed with Council.
Indexing	CPI indexed.	CPI indexed annually.

- A18. Within 6 months from the date of commencement of development, a CCC must be established for the development in accordance with the Department’s Community Consultative Committee Guidelines: State Significant Projects (2019) or latest version.
- A29. Each year, from the commencement of quarrying operations, the Applicant must provide calendar year quarry production data to MEG by no later than 30 January.
- B6. The Applicant must not commence construction of quarrying operations until the Noise Management Plan is approved by the Planning Secretary.
- B12. If the Applicant receives a written request from the owner of any privately-owned land within 1 km of any approved extraction areas on the site for a property inspection to establish the baseline condition of any buildings and structures on their land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:
  - a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
    - i) Establish the baseline conditions of any buildings and other structures on the land, or update the previous property inspection report.
    - ii) Identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures.
  - b) Give the landowner a copy of the new or updated property inspection report.
- B14. If the owner of any privately-owned land within 2 km of any approved extraction area on the site or any other landowner where the Planning Secretary is satisfied an investigation is warranted, claims in writing that buildings or structures on their land have been damaged as a result of blasting on the time, then within 2 months of receiving this written claim the Applicant must:
  - a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim.
  - b) Give the landowner a copy of the new or updated property inspection report.
- B23. The Applicant must not commence construction of quarrying operations until the Air Quality Management Plan is approved by the Planning Secretary.



- B33. Within 12 months of the date of commencement of quarrying operations, unless otherwise agreed by the Planning Secretary, the Applicant must install a clean water diversion as shown in Appendix 2. The clean water diversion must be:
  - a) Designed to prevent water from the upstream catchments entering the existing extraction area.
  - b) Designed in accordance with *Managing Urban Stormwater Volume 1* (Landcom 2004) and *Managing Urban Stormwater: Soils and Construction Volume 2E*, Mines and Quarries (DECC 2008).
  - c) Detailed within the Water Management Plan in condition B39.
  
- B35. Within 12 months of the date of commencement of the clean water diversion installation required by condition B33, the Applicant must prepare a Discharge Characterisation Report for the development and submit it to the Planning Secretary for information. This report must:
  - a) Be prepared by a suitably qualified and experienced person/s whose appointment has been approved by the Planning Secretary.
  - b) Be prepared in consultation with the EPA and DPE Water.
  - c) Include:
    - Measures to avoid the need for discharges as far as reasonable and feasible.
    - Analysis of the frequency and volume of discharges during dry, median (or average) and wet weather conditions.
    - Sufficient baseline water quality data from the East Pit.
    - Characterisation of the expected water quality and frequency of proposed changes.
    - Assessment of the impact of discharges to Eulomogo Creek.
    - Measures to prevent pollution of Eulomogo Creek and any other potential downstream impacts.
  
- B40. The Applicant must not commence quarrying operations until the Water Management Plan is approved by the Planning Secretary.
  
- B43. The Applicant must enter into a Works Authorisation Deed (WAD) with Council before finalising the design or undertaking any construction work within or connection to the road reserve of Sheraton Road.
  
- B46. The Applicant must not commence quarrying operations until the Traffic Management Plan is approved by the Planning Secretary.
  
- B48. The Applicant must retire the biodiversity Ecosystem Credits specified in Table 6<sup>2</sup> prior to commencing vegetation clearing under the consent. The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offset Scheme of the BC Act.

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<sup>2</sup> See consent condition B48 for content of Table 6.

- B50. The Applicant must not commence construction of quarrying operations until the Biodiversity Management Plan is approved by the Planning Secretary.
- B58. Within 12 months of the date of commencement of development under this consent, the Applicant must prepare a Rehabilitation Management Plan for the development. This plan must:
  - a) Be prepared:
    - By suitably qualified and experienced person/s with relevant experience in final landform hydrology and ecology and approved by the Planning Secretary.
    - In consultation with Council and DPE Water.
  - b) Provide detailed plans of the final landform, that demonstrates that the development will be consistent with the objectives in Table 7<sup>3</sup> and the nominated land uses.
  - c) Include a conceptual closure plan that considers the hydrological and hydraulic impacts of the final void/s.
  - d) Include detailed plans for scheduling of the progressive rehabilitation.
  - e) Include detailed performance and completion criteria for evaluating the performance of rehabilitation of the site.
  - f) Describe the measures needed to achieve the criteria in clause 'e', including triggers for remedial action where these performance or completion criteria are not met.
  - g) Include a program to monitor, independently audit and report on progress against the criteria in clause 'e' and the effectiveness of the measures in clause 'f'.
- B59. The Applicant must implement the Rehabilitation Management Plan as approved by the Planning Secretary.
- B60. Within 6 months of the approval of the Rehabilitation Management Plan, the Applicant must lodge a rehabilitation Bond with the Department to ensure that the rehabilitation of the site is undertaken in accordance with the performance and completion criteria set out in the plan and the relevant conditions of this consent. The sum of the bond must be an amount agreed to be the Planning Secretary and determined by:
  - a) Calculating the cost of rehabilitating all existing and immediately proposed disturbed areas of the site (taking into account likely surface disturbance over the next 3 years of quarrying operations).
  - b) Employing a suitably qualified, independent and experienced person to verify the calculated costs.
- B61. The calculation of the Rehabilitation Bond must be submitted to the Department for approval at least 1 month prior to the proposed lodgement of the bond.

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<sup>3</sup> See consent condition B56 for content of Table 7.

- B62. The Rehabilitation Bond must be reviewed and if required, an updated bond must be lodged with the Department within 3 months following:
  - a) Any update or revision to the Rehabilitation Management Plan.
  - b) Completion of an Independent Environmental Audit in which recommendations relating to rehabilitation have been made.
  - c) In response to a request by the Planning Secretary.
- C2. If within 3 months of receiving a request for additional mitigation from the owner, 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 Planning Secretary.
- C4. As soon as practicable and not longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in PART B of this consent, the Applicant must:
  - a) Provide to any affected landowners and tenants.
  - b) Publish on its website the full details of the exceedance.
- C8. If the Planning Secretary is satisfied that an independent review is warranted, within 3 months of the Planning Secretary's decision, or as otherwise agreed by the Planning Secretary and the landowner, the Applicant must:
  - a) Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary to:
    - i) Consult with the landowner to determine their concerns.
    - ii) Conduct monitoring to determine whether the development is complying with the relevant criteria in PART B of the consent.
    - iii) If the development is not complying with any relevant criterion, identify measures that could be implemented to ensure compliance with that criterion.
  - b) Give the Planning Secretary and landowner a copy of the independent review.
  - c) Comply with any written request made by the Planning Secretary to implement findings of the review.
- D2. The Applicant must not commence construction or quarrying operations until the Environmental Management Strategy is approved by the Planning Secretary.
- D5. Within three months of:
  - a) Submission of an incident report under condition D7.
  - b) Submission of an Annual Review under condition D9.
  - c) Submission of an Independent Environmental Audit under condition D11.
  - d) The approval of any modification of the conditions of this consent.

- e) The issue of a direction of the Planning Secretary under conditions A2(b) which requires a review.
  - f) The suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.
- D6. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.
  - D7. The Applicant must immediately notify the Department in writing and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing through the Department's Major Projects website and identify the development (including the development application number and name) and set out the location and nature of the incident.
  - D8. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing through the Department's Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.
  - D9. By the end of March in each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:
    - a) Describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year.
    - b) Include a comprehensive review of the monitoring results and complaints records in the previous calendar year, including a comparison of these results against the:
      - Relevant statutory requirements, limits or performance measure/criteria.
      - Requirements of any plan or program required under this consent.
      - Monitoring results of previous years relevant predictions in the documents listed in condition A2.
    - c) Identify any non-compliance or incident with which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence.
    - d) Evaluate and report on:
      - The effectiveness of the noise and air quality management systems.
      - Compliance with the performance measures, criteria and operating conditions in this consent.
    - e) Identify any trends in monitoring data over the life of the development.

- f) Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.
- g) Describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.
- D11. Within one year of the commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:
  - a) Be led and conducted by a suitably qualified, experienced and independent team of experts, whose appointment has been approved by the Planning Secretary.
  - b) Be carried out in 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, water licences and EPL for the development (including any assessment, strategy, plan or program required under these approvals.
  - d) Review the adequacy of any approved strategy, plan or program required under this consent and the other above-mentioned approvals.
  - e) Recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under this consent and the other above-mentioned approvals.
  - f) Be conducted and reported to the satisfaction of the Planning Secretary.
- D12. Within three months of commencing the Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.
- D15. Before commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must:
  - a) Make the following information and documents (as they are obtained, approved or as otherwise stipulated with the conditions of this consent) publicly available on its website:
    - The document/s listed A2.
    - All current statutory approvals for the development.
    - All approved strategies, plans or programs required under the conditions of this consent.
    - Minutes of the CCC meetings.
    - Regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of consent.

- A comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of consent, or any approved plans and programs.
  - A summary of the current stage and progress of the development.
  - Contact details to enquire about the development or to make a complaint.
  - Complaints register, updated monthly.
  - The Annual Reviews of the development.
  - Audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report.
  - Any other matter required by the Planning Secretary.
- b) Keep such information up-to-date, to the satisfaction of the Planning Secretary.

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