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Dunmore Quarry ENVIRONMENT MANAGEMENT STRATEGY

March 2023



DOCUMENT CONTROL

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1 INTRODUCTION

1.1 BACKGROUND

The Dunmore Hard Rock Quarry, owned and operated by Boral Resources (NSW) Pty Ltd, is located at Tabbita Road Dunmore, approximately 12 kilometres north-west of Kiama in the Shellharbour Local Government Area. The quarry produces hard rock which is crushed to produce coarse aggregates and road construction materials, and fines that are used as manufactured sand or bedding material, and to produce Nusoil™, a soil additive and conditioner to assist in increasing agricultural yields. Development Consent (DA 470-11-2003), issued 19 November 2004 by the Minister for Infrastructure and Planning, allows Boral to produce up to 2.5 million tonnes of hard rock a year (Mtpa), and transport it offsite by road and rail to local and regional markets. Since consent was issued in November 2004, there have been twelve approved modifications (with conditions), as detailed below:

- Modification 1 – December 2005;
- Modification 2 – June 2006;
- Modification 3 – May 2008;
- Modifications 4 and 5 – November 2008;
- Modification 6 – January 2014;
- Modification 7 – October 2015;
- Modification 8 – November 2016;
- Modification 9 – September 2017;
- Modification 10 – June 2017;
- Modification 11 – March 2019;
- Modification 12 – September 2021.

The EMS be a dynamic document which will be updated as required over the life of quarry operations until the Project Approval end date.

1.2 OVERVIEW OF OPERATIONS

Dunmore Hard Rock Quarry (the site) covers approximately 248 hectares and is surrounded by private property and Boral owned property, predominantly agricultural grazing land and tracts of remnant native vegetation, to the south, north and west. Dunmore Sand and Soil Quarry adjoins the site to the east. Dunmore Hard Rock Quarry produces hard rock from Bumbo Latite Member, a fine-grained intermediate volcanic rock similar to basalt, which is crushed to produce coarse aggregates, road construction materials and fines. Extraction occurs from three discrete areas: Original Dunmore Quarry, Croome Farm Pit and Rail Infrastructure Corporation (RIC) land. The extraction method involves drilling and blasting to produce broken rock, that is transported to the primary crusher feed bin. The primary-crushed rock is further reduced in size in a series of crushers, before being conveyed to the tertiary screen house where the crushed rock is sized according to product specifications. The sized products are then stockpiled within the various stockpile areas on site, until they are transported by road and rail to local and regional markets. A detailed description of Dunmore Quarry's operations is provided by Environmental Impact Statement for the proposed Dunmore Quarry Production Increase.

1.3 SCOPE AND OBJECTIVES

This EMS applies to all activities undertaken by the Quarry including quarrying, crushing, screening, stockpiling and transportation of quarry products, maintenance activities; and associated service and support functions.

The performance of environmental management at Dunmore Quarry will be managed through an EMS that is implemented across all of Boral's businesses. The EMS will be tailored specifically to Dunmore Quarry, and integrate the management plans and monitoring programs that will progressively be prepared in response to conditions of the Project Approval.

This Report has been prepared to meet the scope and objectives of Development Consent Condition 1 (Schedule 5) requirement for the development and implementation of an Environmental Management Strategy (EMS). The 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 approval; and*
 - (ii) a clear plan depicting all the monitoring to be carried out under the conditions of this approval.*

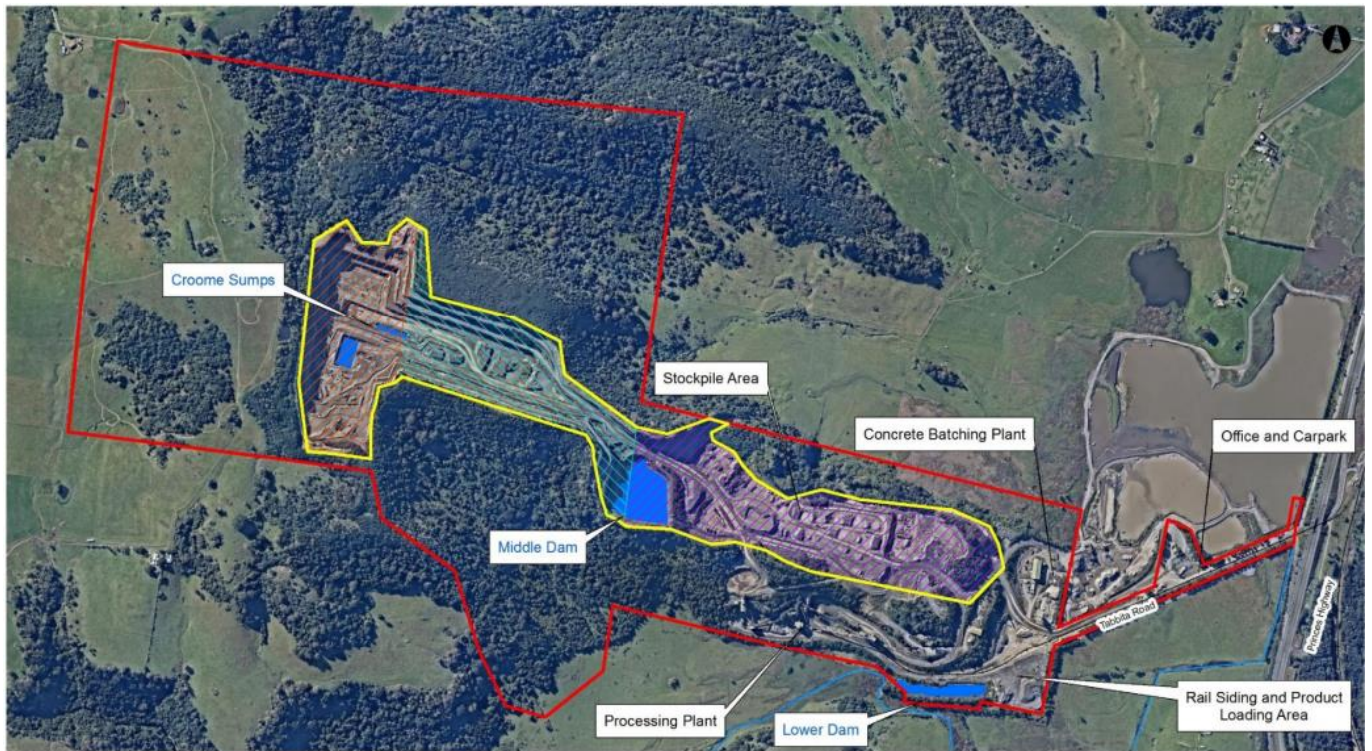
The EMS is structured around the Plan-Do-Check-Review framework and Continual Improvement objectives outlined in the international environmental management standard ISO-14001.

1.4 RESPONSIBILITY FOR IMPLEMENTATION

The Quarry Manager carries ultimate responsibility for the ongoing development and implementation of this EMS and providing the necessary resources as required. The site Environmental Officer is responsible for carrying out and/or coordinating the monitoring and reporting requirements of this plan, document review and updates and stakeholder engagement.

Operations personnel (Quarry Supervisors) are responsible for implementing the measures and onsite actions contained in the strategy.

Figure 1: Site Layout



1.5 ALIGNMENT WITH OTHER PLANS

This EMS document outlines the overarching strategy of which the other environmental management plans – Air Quality, Water, Aboriginal Heritage, Noise and Blast, Bushfire Management and Biodiversity and Rehabilitation form a part of.

1.6 DOCUMENT STRUCTURE

The structure of the Management plan is outlined in Table 1.

Table 1: Structure of the Management plan

Section	Content
1	Provides an overview of the project, and objectives of the plan
2	Outlines the management system
3	Policy and Planning components of the system
4	Implementation components of the system
5	“Checking and review” components of the system
6	Lists references used in the plan preparation
7	Appendices

2 CONTEXT FOR ENVIRONMENTAL MANAGEMENT

2.1 OVERVIEW

The context for environmental management at Dunmore Quarry is guided by the Corporate Environmental Policy of Boral Limited, regulatory compliance, growing community awareness/expectations and the proximity of the site to other local industry.

The Boral Limited Corporate Environmental Policy (See Appendix A) underpins the way in which the environment is managed across all of Boral's operations internationally. Boral is committed to pursuing industry specific best practice in environmental performance, complying with environmental legislation and open, constructive engagement with communities surrounding its operations.

The Boral Environmental Policy (November 2016) provides the foundation for the environmental objectives and the commitment that all employees and contractors undertake their duties in consideration of:

- Efficient use of energy (including appropriate use of alternative fuels);
- Conservation of water;
- Minimisation and recycling of wastes;
- Prevention of pollution;
- Effective use of virgin and recovered resources and supplemental materials;
- Open and constructive engagement with communities surrounding Boral operations;
- Reducing the greenhouse gas emissions from Boral processes, operations and facilities;
- Protecting and, where possible, enhancing biodiversity values at and around Boral facilities; and
- Complying with environmental legislation, regulations, standards and codes of practice relevant to the particular business as the absolute minimum requirement in each of the communities in which Boral operate.

It is a Boral Corporate requirement that the Environmental Policy is clearly displayed in prominent location at all operations and is included in training and induction programs undertaken by all employees and contractors.

Local communities are increasingly becoming more aware of the environmental performance of industry and have resulting high expectations. Dunmore is no different, and in light of this, community relations activities for Dunmore Quarry will seek to meet these expectations and earn a social licence to operate from the local community.

It is also recognised that the quarry is located in a semi-rural environment adjacent to other local industry. The environmental performance of the quarry will be monitored, assessed and managed in light of these cumulative impacts.

2.2 BORAL INTEGRATED HSEQ MANAGEMENT SYSTEM

Dunmore Quarry operates in accordance with the Boral integrated Health Safety, Environment and Quality Management System (HSEQ MS) which establishes a strategic platform for Regulatory compliance and continual improvement in environmental management. This framework is documented in GRP-HSEQ-1-01 Management System Framework and Operational Control.

The HSEQ MS provides structure and guidance on:

- Company environmental objectives;
- Identification, monitoring and management of environmental aspects and impacts associated with all Boral operations;
- Regulatory compliance;
- Roles and responsibilities; and
- Community expectations.

The HSEQ MS includes the following nine Environmental Standards:

- Environmental Aspects and Impacts;
- Water Management;
- Land Management;
- Waste Management;
- Noise Management;
- Air Management;
- Spill Management;
- Ecosystem and Biodiversity Conservation; and
- Culture and Heritage Protection.

The Boral HSEQ MS is aligned with the international standard ISO-14001, and contains the elements associated with Policy and Planning, Implementation and Maintenance, and Checking and Review.

Each element contains the following and is detailed in this Strategy Document.

Planning

- Preparation of an Environmental Aspects and Impact register that will, through a process of risk rating, determine what measures need to be implemented to minimise the environmental impacts identified;
- Identify the legal requirements that apply to the quarry;
- Setting of objectives and targets and associated improvement programs.

Implementation and Maintenance

- Identification of site roles and responsibilities for environmental management;
- Identification and scheduling of targeted environmental awareness training for each employees level of responsibility;
- Communication strategies both internally and externally with government agencies and the community;
- Documentation and its control;

- Operational Controls;
- Emergency response and preparedness.

Checking and review

- Regular review of monitoring and management initiatives;
- Internal audits undertaken annually for internal due diligence purposes;
- External auditing;
- Incident and complaint reporting;
- Annual management review of the EMS.

3 POLICY AND PLANNING

The success of the EMS requires detailed understanding and planning towards the sites environmental impacts and controls, regulatory compliance requirements, internal corporate obligations, and community expectations. This section outlines the planning aspects of the EMS.

3.1 ASPECTS AND IMPACTS

Key Boral Document: GRP-HSEQ-1-03 Hazard Identification and Risk Management and
GRP-HSEQ-8-01 Environmental Aspects and Impacts

The identification and control of environmental risks at Dunmore Quarry is undertaken in accordance with the HSEQ MS Standards which aligns with Australian & New Zealand Standard AS/NZS 31000:2009 Risk Management - Principles and Guidelines.

In accordance with the HSEQ MS, every Boral operational site is required to develop an aspects and impacts register with the implementation of appropriate controls to minimise environmental risks associated with site based activities, products and services.

The aspects and impacts register is subject to scheduled reviews and updates (if required) to reflect any operational changes.

Dunmore Quarry has an Aspects and Impacts register in place.

3.2 STATUTORY REQUIREMENTS

Key Boral Document: GRP-HSEQ-1-04 Legal Compliance and Other Requirements

Operations need to know and understand the statutory requirements that apply to their operations. Boral maintains subscriptions to a number of on-line legal resources, which are accessible for all employees through links established on the company's intranet.

Dunmore Quarry operates under the compliance requirements of a number of statutory approvals, modifications and a NSW EPA Environmental Protection Licence. The key statutory instruments which therefore apply to Dunmore Quarry include the following:

3.2.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Under the EPBC Act, approval from the Minister for the Environment is required for any action that would result in a significant impact on Matters of National Environmental Significance (MNES).

EPBC approval was sought and granted in September 2021 for the Modification 12 proposal.

Assessments under the Act will be conducted as required for any future proposals.

3.2.2 National Greenhouse & Energy Reporting Act 2007 (NGER Act)

The National Greenhouse and Energy Reporting Act 2007 (NGER Act) provides a single national framework for the reporting and dissemination of information about the greenhouse gas emissions, greenhouse gas projects, and energy use and production of corporations. It makes registration and reporting mandatory for corporations whose energy production, energy use or greenhouse gas emissions meet specified thresholds.

Boral triggers the threshold for reporting under the NGER Act, and reports energy use and greenhouse gas emissions from its operations, including the Quarry.

3.2.3 Environmental Planning and Assessment Act 1979

Dunmore Quarry was declared a 'major development' under the provisions of Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (SEPP Major Development) 2005. Since Project Approval was granted in 2005, there have been twelve approved modifications (with conditions), as detailed below:

- Modification 1 (2005) approved for a new amenities block;
- Modification 2 (2006) approved for vegetation offsets and a transport route;
- Modification 3 (2008) approved for an administrative change;
- Modification 4 (2008) approved for an administrative change;
- Modification 5 (2008) approved for an extension of the extraction area;
- Modification 6 (2014) approved for an increased extraction area;
- Modification 7 (2015) approved for a proposed blending plant;
- Modification 8 (2016) approved for an administrative change;
- Modification 9 (2017) approved for an extension of the extraction area;
- Modification 10 (2017) approved for a change in the water storage capacity;
- Modification 11 (2019) approved for increased transport tonnage;
- Modification 12 (2021) approved for an amendment to the hourly dispatch limits.

The quarrying operations will continue to be subject to the provisions of the EP&A Act for any subsequent changes or modifications to the operations. Additionally, the operations will need to be able to demonstrate compliance against the current CoA of the Project Approval under the provisions of the EP&A Act.

3.2.4 Protection of Environment Operations Act 1997

The objectives of the *Protection of Environment Operations Act 1997* (POEO Act) are to protect, restore and enhance the quality of the environment. Some of the mechanisms that can be applied, under the POEO Act, to achieve these objectives include reduction of pollution at source, monitoring and reporting of environmental quality.

Based on annual production volumes, Dunmore Quarry has been determined to be a 'Scheduled Activity' under Schedule 1 of the POEO Act which requires site operations to be the subject of an Environmental Protection Licence (EPL No. 77).

The EPL is issued for the scheduled activity of Crushing, Grinding, Separation and Extractive activities for tonnages greater than 2 million tonnes per annum.

3.2.5 Water Management Act 2000

3.2.5.1 Water Sharing Plan

The *Water Management Act 2000* (WM Act) is intended to ensure that water resources are conserved and properly managed for sustainable use, benefiting both present and future generations. Water sharing plans (WSP) prepared in accordance with the WM Act include rules for protecting the environment and administering water licencing and trading.

Dunmore Quarry holds a surface water extraction licence (WAL25152) under Water Management Act 2000 to extract 227ML per annum of surface water from the “Illawarra Rivers Water Source”, “Minnamurra River Management Zone” (i.e. Rocklow Creek). This licence was converted from what was previously a licence (10SL050221) held under the Water Act 1912. The Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011 (Water Sharing Plan) is currently in force and applies conditions for extraction of water under a water access licences within the Illawarra Rivers Water Source. Any extraction from Rocklow Creek will need to comply with the rules of the Water Sharing Plan.

3.2.5.2 Harvestable Rights

The Department of Primary Industries document Dams in NSW: Do you need a licence? (2016) outlines the circumstances in which licences are not required for dams. In relation to harvestable rights, the document states:

“The following dams should not be included when you are calculating the capacity of dams allowed on your property under a harvestable right: (..) Dams for the capture, containment and recirculation of drainage and/or effluent that conform to best management practice or are required by regulation to prevent the contamination of a water source. The harvestable right is not intended to be contrary to initiatives to prevent pollution of water sources. Many landholders are required to install dams to capture contaminated water or to collect and re-use irrigation tailwater (DPI, 2016).”

As outlined in the 2008 WMP, the dams on site all fill a specific environmental purpose, in that the water being stored is re-used for dust suppression of roads, stockpiles and in the plant crushing process. The operating rules for these dams were outlined in the 2008 WMP and have been incorporated as conditions under the sites Development Consent (DA 470-11-2003) via modifications made in November 2008.

3.2.6 National Parks and Wildlife Act 1974

The NPW Act is the primary piece of legislation for the protection of Aboriginal cultural heritage in New South Wales. The Biodiversity Conservation Trust (BCT), incorporating the previous Office of Environment and Heritage (OEH) administer the NPW Act. The NPW Act provides statutory protection for Aboriginal objects by making it illegal to harm Aboriginal objects and Aboriginal places.

Under Section 86 of the NPW Act, a person must not harm or desecrate an Aboriginal object or place. In cases where harm to Aboriginal objects or places cannot be avoided, an Aboriginal Heritage Impact Permit (AHIP) may be sought under Section 90 of the Act. An AHIP is not required for Part 3A approvals in accordance with Section 75U of the EP&A Act. Dunmore quarry was assessed and approved under Part 3A of the Environmental Planning and Assessment Act, 1979 (EP&A Act).

Part 3A has since been repealed by the NSW Government; however, many of its functions still remain under transitional provisions. Part 3A provided developers with ‘comprehensive’ approval for development, without the need for obtaining further approvals under different Acts. The Part 3A approval process involved requirements established by the Director General of NSW Planning to ensure all environmental factors are adequately considered and addressed.

Accordingly, an Aboriginal Heritage Management Plan has been developed to manage heritage impacts associated with Dunmore Quarry.

3.2.7 Native Vegetation Act 2003

All clearing of native vegetation needed for the quarry has already been assessed and approved by the Minister for Planning. Any clearing of native vegetation beyond what is approved, is regulated by the BCT, under this Act.

3.2.8 Threatened Species Conservation Act 1995 (TSC Act)

The TSC Act aims to protect biological diversity of NSW and lists threatened or endangered flora and fauna species and ecological communities. Under the EP&A Act, impacts on threatened species listed under the TSC Act are required to be assessed.

In accordance with Schedule 4 Condition 46 of Development Consent (DA 470-11-2003), the Dunmore Quarry was required to conserve, maintain and enhance several discrete areas of native vegetation, including a compensatory habitat area and a remnant vegetation conservation area. A subsequent modification to DA 470-11-2003 in 2008 required additional vegetation to be conserved, maintained and enhanced within an offset area. Table 2 provides a summary of how the various conservation areas meet the conditions of approval, while all conservation areas shown on Figure 2.

Table 2. Conditions of consent pertaining to conservation areas

Development application	Approval date	Condition of consent (CoA)	Conservation area name
DA 470-11- 2003	November 2004	CoA 46(a): establish, conserve, and maintain at least: <ul style="list-style-type: none"> • 4.6 hectares of Melaleuca armillaris Tall Shrubland; and • 8.2 hectares of Blue Gum-White Box Woodland /Forest, on Boral and adjacent to the development. 	Compensatory Habitat Area
		CoA 46(b): conserve, maintain, and enhance the vegetation in the area to the south of the development marked on the map in Appendix 3 (of the consent) as Remnant Conservation Area	Remnant Vegetation Conservation Area
Modifications 4 and 5	November 2008	CoA 46(c): conserve, maintain, enhance and establish the vegetation in the area to the south of the development marked on the map in Appendix 3 (of the consent) as Offset Area,	Offset Area

in accordance with the letter from Boral to the Department dated 22 September 2008 titled Dunmore Quarry – Revised Offset for Quarry Extension.

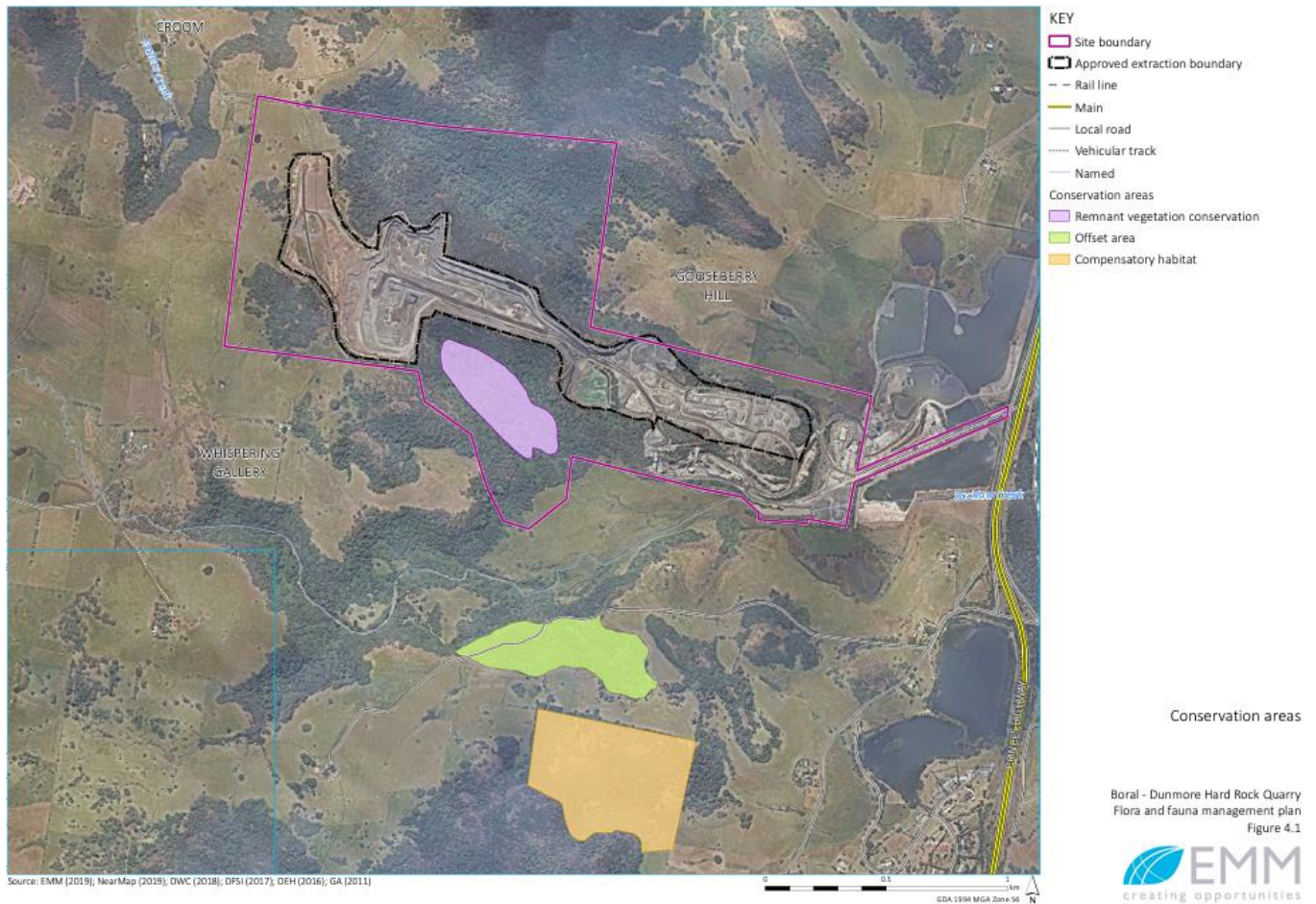


Figure 2. Dunmore Hard Rock Quarry Conservation Areas

3.2.9 Heritage Act 1977 (Heritage Act)

This Act includes provisions relating to the protection and management of heritage items (historic heritage). Boral proposes to expand the existing Croome Farm Pit, the westernmost extraction pit at Dunmore Quarry, further to the west into the study area. The entirety of the study area will be impacted by quarrying and associated activities. Three identified Aboriginal sites would be impacted by the proposal.

The three Aboriginal archaeological sites identified within the study area have been considered by Boral in relation to the proposed extraction pit expansion. While conservation is the best approach when considering Aboriginal heritage, impact to the three sites is unfortunately unavoidable due to the nature of the expansion project. The most significant sites are situated adjacent to the existing operations. The scientific value of archaeological sites is linked to the physical information the sites contain. Site Croome West AFT 3 has low archaeological significance and does not warrant further archaeological investigation;

however, measures for mitigating harm to Aboriginal objects (salvage excavation) are recommended for sites Croome West AFT 1 and Croome West AFT 2. Salvage excavation will be undertaken prior to any disturbance associated with this expansion.

3.2.10 Other Statutory requirements

Other Statutory instruments to which Dunmore Quarrying operations require compliance management are:

- Dangerous Goods Act 1975
- Local Government Act 1993
- Work Health and Safety (Mines) Act 2013
- Mining Act 1992
- Pesticides Act 1999
- Noxious Weeds Act 1993
- Soil Conservation Act 1938
- Roads Act 1993
- NSW Work Health & Safety Act 2011
- Mines Health and Safety Act 2004

3.3 OBJECTIVES, TARGETS AND ASSOCIATED IMPROVEMENT PROGRAMS

Key Boral Document: GRP-HSEQ-1-05 Objectives, Targets and Improvement Plans

As part of a continual improvement process, the environmental performance of every Boral site is measured with respect to progress and achievements on objectives, targets and program milestones. A number of objectives and associated performance criteria has been developed for Dunmore Quarry and are outlined in the management plans.

These are consolidated and presented in Table 2.

Table 3: Dunmore Quarry Objectives and Targets

Management Plan	Objectives	Performance criteria
Aboriginal Heritage Management Plan	Identification of the Aboriginal sites that will be conserved and those that will be impacted by quarrying.	Methodology to be followed in AHMP and listing to be maintained
Aboriginal Heritage Management Plan	Conservation of identified aboriginal sites to allow their in-situ retention during the quarry’s active life time and subsequent rehabilitation (i.e. conservation for future generations).	Implementation of the management measures – fencing and signage of sites to be conserved Education and respect of indigenous values (induction / declaration)
Aboriginal Heritage Management Plan	Management with integrity of aboriginal sites to be impacted by quarrying with through a combination of Aboriginal community involvement and archaeological excavation	All identified sites managed as per AHMP

Dunmore Quarry: Environment Management Strategy

Management Plan	Objectives	Performance criteria
Aboriginal Heritage Management Plan	Ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site	Follow protocol as per AHMP
Aboriginal Heritage Management Plan	Manage identification of any new Aboriginal objects or relics discovered during the operation of the quarry	Follow protocol as per AHMP
Water Management Plan	Compliance with regulatory requirements including water licences, Project Approval and EPA Environment Protection Licence	No non compliances
Water Management Plan	Minimisation of dirty water generation by implementation of appropriate erosion and sediment controls	Erosion and sediment controls in place
Water Management Plan	Protection of surface and groundwater quality and availability	Controls as outlined in this WMP in place
Water Management Plan	Ensure appropriate water control systems are planned and established prior to commencement of any new quarrying activities with potential to impact water	Controls in place
Water Management Plan	Conduct appropriate and representative monitoring for verification that WMP is effectively implemented and meeting its objectives	Undertake monitoring as outlined in WMP
Water Management Plan	Having contingencies and resources for mitigating adverse impacts to surface and groundwater from quarrying activities.	Protocol as outlined in WMP to be in place and trained
Air quality Management Plan	Compliance with regulatory requirements including Project Approval and EPA Environment Protection Licence	No non compliances
Air quality Management Plan	Implement best reasonable and feasible management practices to minimise off-site odour, fume and dust emissions	Management controls in the AQMP in place
Air quality Management Plan	Minimise visual air pollution generated by the activities	Management controls in the AQMP in place
Air quality Management Plan	Identify triggers for implementation of additional management response measures where required	SOP in place regarding dust suppression activities

Dunmore Quarry: Environment Management Strategy

Management Plan	Objectives	Performance criteria
Air quality Management Plan	Implement best reasonable and feasible management practices to minimise off-site odour, fume and dust emissions	Management controls in the AQMP in place
	Assess the effectiveness of air quality control measures	Monthly review of air monitoring data including complaints
Air quality Management Plan	Quantify changes to air quality at residences and private properties near the site	Undertake monitoring as outlined in AQMP
Air quality Management Plan	Ensure dust concentrations and deposition levels remain below relevant air quality criteria at the nearest residences	Monthly review of air monitoring data including complaints Management controls in the AQMP in place
Air quality Management Plan	Obtain information to provide a basis for assessing the ongoing impact of Dunmore Quarry on air quality;	Monitoring undertaken as per the AQMP
Noise and Blast Management Plan	Compliance with regulatory requirements including Project Approval and EPA Environment Protection Licence	No non compliances
Noise and Blast Management Plan	Implement best reasonable and feasible management practices to minimise noise levels emitted by the operations	Management controls in the NBMP in place
Noise and Blast Management Plan	Identify potential noise sources and their relative contribution to noise impacts from the development	Quarterly review of noise monitoring data
Noise and Blast Management Plan	Ensure air-blast overpressure and ground vibration levels during blasting events comply with the relevant assessment criteria in the Project Approval;	Review of blast monitoring data after each blast
Noise and Blast Management Plan	Assess the effectiveness of noise and blast control measures	Regular review of monitoring data including complaints
Noise and Blast Management Plan	Provided data suitable to demonstrate compliance with the CoA of the Project Approval and subsequent modifications.	Monitoring undertaken as per the MP
Noise and Blast Management Plan	Ensure noise , ground vibration and over pressure remain below relevant criteria at the nearest residences	Regular review of monitoring data including complaints Management controls in the NBMP in place

Management Plan	Objectives	Performance criteria
Biodiversity and Rehabilitation Management Plan	Achieve successful revegetation and rehabilitation	<ul style="list-style-type: none"> minimal disturbance to the HMA as a result of construction activities; all disturbed areas replanted in accordance with this plan; areas of failed plantings are replaced promptly; and a low percentage of weeds present in the HMA.
Biodiversity and Rehabilitation Management Plan	Minimise impacts during vegetation removal	<ul style="list-style-type: none"> no native vegetation that is to be retained is damaged or removed inadvertently; all pre-clearing protocols are followed; and no native animals are killed or injured during clearing.
Biodiversity and Rehabilitation Management Plan	Effective development of habitat connectivity	Maintaining health of vegetation within the perimeter bund.
Biodiversity and Rehabilitation Management Plan	Undertake successful management of Significant species	<ul style="list-style-type: none"> monitoring results show persistence of <i>S. celatum</i> at the site; native habitats are retained; hollow-bearing trees outside of disturbed areas are retained on site; and the HMA is managed and natural regeneration occurs.
Biodiversity and Rehabilitation Management Plan	Ensure successful rehabilitation of the site proactive site management	<ul style="list-style-type: none"> natural regeneration occurring within 12 months of revegetating within HMA and on bunding; no erosion of soils and no sedimentation of creek lines; no weeds recorded in the HMA or on bunding within 18 months of revegetation; and Bushfire Management Plan prepared and implemented in consultation with RFS

4 IMPLEMENTATION AND MAINTENANCE

The implementation of the EMS will be the responsibility of a number of key internal stakeholders to ensure there is an appropriate level of resources, training and engagement in meeting the objectives outlined in Section 1.3 above.

4.1 ROLES AND RESPONSIBILITIES

Key Boral Document: GRP-HSEQ-2-01 Organisational Roles, Responsibilities and Resources

Overall responsibility for environmental management and performance of Dunmore Quarry is placed on the Quarry Manager. The Quarry Manager will be accountable for ensuring appropriate resources and training is made available to achieve compliance with the Project Approval, relevant legislation, and implement and maintain the EMS.

An Environmental Advisor will be based at the quarry to coordinate the implementation of the conditions of Project Approval together with EMS implementation and management. This role will also take the lead and be the primary contact with government agencies and community relations as well as site environmental training.

Site Supervisors will be responsible for environmental controls being employed during operations, responding to environmental incidents that occur on site, and coordinating resources to resolve them. Supervisors will also toolbox employees daily during the toolbox on aspects of the operation that might have specific environmental impacts on that day.

Quarry employees will be responsible for good housekeeping and maintaining the areas in which they work. This includes alerting supervisors to adverse environmental impacts as a result of quarry operations and responding to incidents such as spills and repairing environmental controls.

4.2 ENVIRONMENTAL TRAINING AND AWARENESS

Key Boral Document: GRP-HSEQ-2-03 Training, Competency and Awareness

Environmental training and awareness is undertaken in a number of ways.

All employees and contractors working on site are required to undertake an annual site induction which covers both safety and environmental requirements of the site.

Site specific environmental training occurs in relation to standard operating procedures or safe work method statements where environmental management is required.

Environmental awareness occurs through regular onsite briefing notes, displays and updates on the internal visual monitors.

The on-site Environmental Advisor identifies training needs and provides periodic “site-specific” environmental awareness training and induction sessions to employees and contractors, as needed.

The Quarry Manager and shift supervisors provide environmental information through the regular toolbox talk presentations.

Boral Environmental Alerts which provide outcomes and learnings of industry sector issues are frequently posted on bulletin boards and become the topic of toolbox-talk sessions.

In accordance with the HSEQMS and corporate divisional requirements a regular report on environmental compliance and performance is prepared by the site environmental advisor. The report is presented to the management team at Dunmore for review and action where necessary.

The Boral State and Group Environmental Advisors are also provided with a regular overview of any significant matters which may be escalated to Board level.

4.3 STAKEHOLDER COMMUNICATION AND ENGAGEMENT

Key Boral Document: GRP-HSEQ-2-02 Communication and Consultation

A key commitment within the Boral Environmental Policy is that all operations will be undertaken through open and constructive relationships with local communities and government agencies.

In support of the Policy, the HSEQ Management System requires that:

“All Site/Operation Managers have a responsibility to communicate on a range of topics including site performance to ensure employee, community and other stakeholder involvement and engagement in our HSEQ Management System strategies and to meet legislative requirements”.

4.3.1 Government Agencies

As with all of Boral Quarries NSW operations, open and frequent dialogue will be maintained with the Department of Planning, Industry and Environment (DPIE) and other government agencies.

Regulatory authorities such as NSW EPA and DPIE will be informed of key operational activities in addition to the annual reporting required through Annual Returns, Annual Reviews and website publishing of environmental monitoring data.

4.3.2 Community Relations

Dunmore Quarry has actively engaged with the local community since the commencement of the 2004 Environmental Assessment for the project. Ongoing communication and engagement with the community will include:

- Continued representation on the Community Consultation Committee;
- Regular publishing of community newsletters;
- Active participation in local community events;
- Facilitation of site inspections and one on one consultation;
- Active engagement with key regulators, government and non-government organisations;
- Maintenance of an environmental and community complaints line and register; and
- Actively managing and resolving community issues as they arise

The Quarry Manager and Environmental Advisor will be available to respond to any stakeholder enquiry or complaint. Signage at the Quarry entrance provides relevant contact details for general enquiries and environmental complaints.

Members of the public are also invited by appointment to inspect the Quarry and operations.

Copies of all approvals, management plans, licences, strategies, procedures, monitoring, complaints, and annual regulatory reports are all readily available on-site should copies be requested.

A Stakeholder Engagement plan, available on the website, outlines our commitment to events and involvement in the community.

Overall, these management measures facilitate the effective environmental management of the quarry.

4.3.3 Community Consultative Committee (CCC)

A CCC was established prior to the commencement of construction activities to inform interested members of the local community of quarry development, operations and environmental performance.

The CCC has been established and continues to operate in accordance with the Terms of Reference which have been prepared in recognition of Schedule 5, Condition 6 of the Project Approval and the DPIE guidelines for CCC's.

The agenda of the CCC meetings includes updates on environmental performance, external stakeholder involvement and updates on operations. Minutes of the meetings are published to the website and provided to the CCC representatives to share with their relevant communities.

4.3.4 Access to Information

Boral will, during the life of quarry operations, operate a phone line for general inquiries, complaints and concerns. This line will also be used as the Blasting Hotline.

Information regarding the environmental performance of the operations can be requested and sent to the caller by email, fax or mail.

In recognition of Schedule 5, Condition 8 of the Project Approval, copies of all documentation required by the Project Approval will be made available at the quarry office, for members of the local community to view. Additionally, the company website <https://www.boral.com.au/locations/boral-dunmore-operations> will contain all of this information for anyone to access.

4.3.5 Community Complaints

Complaints about the environmental performance of quarry construction, development and operation will be received through a complaint phone line which will be posted on the quarry's website and regular newsletters. Complaints will also be received via the website and sent to the Environmental Advisor and Quarry Manager. Initial contact with a complainant will be made within 24 hours of the complaint being received by the Environmental Advisor or Quarry manager.

The Environmental Advisor will record each complaint in the sites complaint register and posted on the company's incident reporting database for internal reporting through line management. The complainant will also be followed up to communicate what measures were put in place to deal with the complaint and prevent a recurrence.

The details of each complaint will be recorded including:

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

A summary of the complaints received will be tabled at each CCC meeting, placed on the website and included in the Annual Review.

4.3.6 Dispute Resolution

In the event that an environmental complaint or other matter of concern associated with Dunmore Quarry is unable to be satisfactorily resolved, a meeting with the senior operations, environmental and business managers will be convened. The meeting will assess whether all practicable actions have been undertaken to resolve the matter. All relevant stakeholders will be advised in writing of the meeting outcomes and on any further actions able to be undertaken to resolve the matter.

Boral will always endeavour to resolve disputes with neighbours and members of the local community without the need for third party intervention. However, in the event that a matter cannot be resolved directly with Boral, landowners have the ability to initiate the Independent Review process outlined in Schedule 4A, Conditions 3 to 5 in the Project Approval. The decision made by the DPIE once this process is followed will be final.

4.4 DOCUMENT CONTROL

Key Boral Document: GRP-HSEQ-2-04 Document Control and Records Management

The Quarry Manger and Environmental Advisor will have the joint responsibility of managing the EMS in accordance with the HSEQ MS Document Control Standard. All referenced documentation will be kept on-site and will be made readily available to any one requesting a copy.

Revised versions of the EMS will be communicated to relevant internal and external stakeholders with all obsolete versions kept on-site to be destroyed.

4.5 OPERATIONAL CONTROL

Documentation in relation to how operational control will be undertaken includes but is not limited to Management plans, standard operating procedures, safe work method statements and checklists.

The Boral HSEQ system has a number of documents which outline the minimal operating requirements for environment management.

These Boral HSEQ standards include....

- GRP-HSEQ-8-02 Water Management;
- GRP-HSEQ-8-03 Land Management;
- GRP-HSEQ-8-04 Waste Management;
- GRP-HSEQ-8-05 Noise Management;
- GRP-HSEQ-8-06 Air Quality Management;
- GRP-HSEQ-8-07 Spill Management;
- GRP-HSEQ-8-08 Ecosystems and Biodiversity Conservation Management; and
- GRP-HSEQ-8-09 Culture and Heritage Protection Management

The standards of required operation as per these Boral HSEC documents are incorporated in the applicable Dunmore Quarry Management plan as discussed below.

4.5.1 Environmental Management Plans

Dunmore Quarry has developed and implemented a number of Management Plans which provide the framework for measuring, monitoring and managing environmental performance and compliance.

Copies of the Plans and Programs are maintained on-site as well on the website and are the subject of periodic environmental training and compliance auditing. Site specific procedures are further developed where required to detail the operational controls needed.

4.5.1.1 Air Quality Monitoring Plan

The Air Quality Monitoring Plan was prepared in 2006 with the most recent review completed in August 2017. The key objectives of the Plan are to:

- Implement management response measures to ensure air quality meets statutory requirement;
- Monitor effectiveness of air quality control measures in meeting statutory requirements and performance objectives in ensuring quarry operations do not adversely impact the amenity of neighbouring residences; and
- Development of trends for ongoing assessment and management of air quality.

4.5.1.2 Noise and Blast Monitoring Program

The Noise and Blast Monitoring Program was prepared in 2006 with the most recent review completed in August 2017. The key objectives of the Program are to:

- Management of noise levels for compliance with applicable statutory criteria;
- Identify, monitor and assess potential noise sources to ensure the amenity of neighbouring residences is preserved; and
- Implement methodologies to control noise with considerations to monitoring frequencies and locations; weather conditions; seasonal and quarry operational variations and measurement techniques.

4.5.1.3 Biodiversity and Rehabilitation Management Plan

The Biodiversity and Rehabilitation Management Plan was prepared in 2006 with the most recent review completed in August 2017, to include key identified Biodiversity offset area. The key objectives of the Plan are to:

- Control and rehabilitation of disturbed areas;
- Management of remnant vegetation;
- Specification of completion criteria for Rehabilitation Management Units; and
- Revegetation and landscaping of bunds and overburden with suitable species.

4.5.1.4 Water Management Plan

The Water Management Plan was prepared in 2006 with the most recent review completed in August 2017. The key objectives of the Plan are to:

- Implementation of a water balance strategy that includes details on water management, water saving measures and potential impacts on surrounding environment;
- Detail erosion and sediment controls;
- Include a surface water management program in relation to environmental flows, monitoring of water quality and response actions to exceedances of statutory and performance criteria; and
- Implementation of a groundwater monitoring program.

4.5.1.5 Aboriginal Heritage Management Plan

The Aboriginal Heritage Management Plan was prepared in 2006 with the most recent review completed in August 2017. The key objectives of the Plan are to identify, protect, conserve, present and transmit Aboriginal heritage values associated with land on which quarrying operations are undertaken.

4.5.1.6 Construction Management Plans

During the development and construction stages of Dunmore Quarry a Construction Traffic Management Plan and Construction Noise Management Plan were developed and implemented.

4.6 EMERGENCY RESPONSE AND PREPAREDNESS.

Key Boral Document: GRP-HSEQ-2-09 Emergency Preparedness and Response

As part of the Dunmore Quarry EMS, an Emergency Response procedure is in place to address emergencies that occur on site. Potential environmental emergencies have been identified along with associated risks and control measures to be implemented. All site employees, contractors and visitors will be educated on the emergency response procedure during the site induction.

Key emergency controllers will be trained in their specific role, and emergency drills will be carried out at least once per year.

As a means of preventing potential incidents and emergency situations, environmental hazard reporting will be promoted and encouraged amongst the workforce. Identified hazards will be entered into the incident reporting database with agreed controls and timeframes for completion and signed off by a Site Supervisor.

A more specific Pollution Incident Response Management Plan (PIRMP) has been implemented at Dunmore Quarry, as well, that includes:

- Identifying and risk assessing the likelihood of hazards;
- Actions for preventing and responding to incidents;
- A site specific inventory of all potential pollutants;
- Equipment to be used in an incident response;
- A plan to minimise environmental and human harm by the implementation of actions to be taken during or immediately after a pollution incident;
- Consideration of how an incident may impact neighbours;
- Communicating an incident to authorities and neighbours;
- Staff training on their roles and responsibilities under the PIRMP; and
- Annual testing and review of the PIRMP.

The Environmental Advisor ensures all employees and contractors with direct responsibilities associated with the PIRMP have a clear understanding of their roles and responsibilities by conducting periodic training and simulated incident drills. The PIRMP is reviewed at least once every 12-months.

5 CHECKING AND REVIEW

The effectiveness in the implementation of the Strategy is assessed through environmental performance monitoring and periodic audit assessments of Regulatory compliance.

5.1 MONITORING PROGRAM

Key Boral Document: GRP-HSEQ-3-01 Monitoring and Review

Dunmore Quarry has developed and implemented an Environmental Monitoring Program (EMP) that consolidates the statutory compliance requirements with Consent and EPL monitoring conditions. The site-based Environmental Advisor has the responsibility to ensure all monitoring and reporting is completed in accordance with Statuary requirements and EMS objectives. A summary of monitoring is presented in Table 4.

Results from the monitoring are reported monthly to the Dunmore Quarry Management team, on a regular basis to the CCC and placed on the website as part of the EPL requirements.

Table 4: Dunmore Statutory Compliance Monitoring

Monitoring Conducted	Regulatory Requirement	Frequency
Noise (LAeq 15 and 1min)	Consent conditions 7, 9, 11, 13, 14	Annually
Blasting (Overpressure and Peak particle Velocity)	Consent conditions 16, 17, 18, 19, 20, 21	Each blast event
Air Quality		
<ul style="list-style-type: none"> TSP and PM10 	Consent conditions 22, 23, 24, 25	24 hours / every 6 days
<ul style="list-style-type: none"> Dust Deposition 	Consent conditions 22, 23, 24, 25	Monthly
Surface water		
Quality	Consent conditions 39, 40, 42	Quarterly where possible - March, June, September, December
Environmental flow	Consent conditions 39	Continuous
Ground water	Consent conditions 39, 43, 44	Quarterly where possible – January, April, July, October
Meteorological conditions	Consent condition 23	Continuous
Biodiversity and rehabilitation	Consent condition 53	Bi-annually – March and September
waste	Consent conditions 71	As generated

5.2 AUDITING AND INSPECTIONS

Key Boral Document: GRP-HSEQ-3-03 Performance Assessments and Audits

5.2.1 Internal Audits and Inspections

The Quarry is subject to Boral corporate and business level compliance governance programs that include the Auditing of site based conformance with the HSEQ Management System and Regulatory compliance requirements.

The Quarry Manager and Environmental Advisor conduct or coordinate scheduled site environmental inspections on key operational activities with findings being documented onto specific checklists.

Non-compliances identified during the Audits and Inspections are reported to the relevant Regulatory Authorities, where required and registered onto the Boral Safety Information Management System (SIMS) from which electronic alerts are directed to senior business Managers for action and tracking towards re-establishing compliance.

Alerts not actioned within specified timelines are progressively escalated through senior Managers and ultimately to the CEO if corrective actions have not been appropriately implemented.

5.2.2 External Audits

In accordance with Condition 10 (Schedule 5) of the Project Approval, an Independent Audit is conducted at Dunmore Quarry every 3 years. An Independent Audit was completed in July 2017 and July 2020. The next Independent Audit is scheduled to be undertaken in 2023.

Independent Auditors are suitably qualified and experienced whose appointment has been endorsed by The Secretary. The audit reports and Boral's responses to the recommendations are available on the website.

5.3 MANAGEMENT OF NON-COMPLIANCES AND INCIDENTS

Key Boral Document: GRP-HSEQ-3-02 Incident Reporting, Investigation and Action Management

Boral have a comprehensive incident management protocol in place for notification, investigation and reporting of actual and near miss incidents, including those associated with the environment or the community. This protocol is implemented at Dunmore Quarry.

In the event that an exceedance of the goals/limits/performance criteria in the Project Approval is detected, or an incident causing (or threatening to cause) material harm to the environment is identified, the process outlined below will be followed.

5.3.1 Non-Compliances

Non-compliances will be reported to the DPIE and EPA, within seven days of becoming aware of the noncompliance, in accordance with Schedule 5, Condition 7 of the Approval.

Notification will be made through phone calls (and/or emails) and as part of annual reporting requirements. If required, a report will be prepared and supplied.

5.3.2 Incidents

Incident reporting will be conducted In accordance with Condition 7, Schedule 5, where by

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

An incident as defined in the Approval, Schedule 1 is deemed to be “a set of circumstances that: *“Any 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.”*

Under Part 5.7A of the *Pollution of the Environment Operations Act 1997* (POEO Act), a Pollution Incident Response Management Plan (PIRMP), which also requires immediate reporting of incidents, has been implemented at the Quarry. This PIRMP outlines incidents that have the potential to cause material harm and therefore the actions to prevent and manage such incidents.

The POEO Act requires:

- Identifying and risk assessing the likelihood of hazards;
- Actions for preventing and responding to incidents;
- A site specific inventory of all potential pollutants;
- Equipment to be used in an incident response;
- Plan to minimise environmental and human harm by the implementation of actions to be taken during or immediately after a pollution incident;
- Consideration of how an incident may impact neighbours;
- Immediate reporting and ongoing communication an incident to ARAs and neighbours;
- Staff training on their roles and responsibilities under the PIRMP; and
- Annual testing and review of the PIRMP.

The Quarry Manager (or nominated Boral Authority) has the responsibility of ensuring all PIRMP reviews, revisions, training, testing and internal and external notifications are undertaken in compliance with POEO Act requirements.

The Department of Environment and Planning and EPA representatives will be advised of incidents as per the detail in the PIRMP.

Boral also maintains a safety and environmental incident reporting system. Any incidents relating to air quality will be entered into this system. All logged incidents are dealt with internally and, if necessary, through a NSW regulatory authority. Following reporting, all incidents are investigated and appropriate management recommendations are implemented.

5.4 MANAGEMENT REVIEW

The Boral HSEQ MS is reviewed on a regular basis.

The Dunmore Quarry EMS is reviewed as required in response to:

- Changes to site activities or processes (including environmental controls, rehabilitation, incidents and non-compliances);

Dunmore Quarry: Environment Management Strategy

- Changes in environmental requirements through legislation, policy or best practice guidelines;
- An Independent Environmental Audit;
- Recommendations or directives from Department of Planning and Environment or other regulatory authorities; and
- Changes to the Boral HSEQ MS Standards as part of its continual improvement objectives

This Management plan document and the strategy are to be reviewed in response to Schedule 5, Condition 4 of the Project Approval which requires a review within 3 months of:

- (a) the submission of an incident report under Condition 7;
- (b) the submission of an Annual review under Condition 9;
- (c) the submission of an audit report under Condition 10;
- (d) the approval of any modification of the conditions of this approval (unless the conditions require otherwise).

6 REFERENCES

This EMS has been prepared with consideration to:

- Boral integrated Health Safety, Environment and Quality Management System (HSEQ MS) as outlined in GRP-HSEQ-1-01 Management System Framework and Operational Control.
- ISO-14001

7 APPENDICES

APPENDIX 1

Boral Environment Policy



Environment Policy

**ZERO HARM
TODAY**

At Boral we own and operate a diverse range of businesses in a number of countries and within many different ecosystems. We acknowledge that the very nature of our operations means there will be impacts on the environment.

We are committed to our goal of zero harm and work to eliminate adverse environmental impacts. Where elimination is not possible, we seek to minimise any harmful effects from our operations which may mean we target better performance than environmental laws require. Wherever practicable, we will secure improved environmental outcomes.

Specifically, Boral will:

- Reduce waste in all its forms, by application of LEAN manufacturing principles, leading to:
 - efficient use of energy, including reuse of waste energy
 - conservation of water
 - minimisation and recycling of waste production materials and energy
 - prevention of pollution; and
 - effective use of virgin and recovered resources and supplemental materials.
- Reduce greenhouse gas emissions from our processes, operations and facilities, including appropriate use of alternative fuels
- Protect and where practicable enhance biodiversity values at and around our facilities.
- Openly and constructively engage with communities surrounding our operations.
- Through communication and training, encourage and assist our employees to enhance Boral's environmental performance.
- Comply with environmental legislation, regulations, standards and codes of practice relevant to the particular business, as a minimum, and
- Allocate sufficient resources to meet the commitments of this Policy:

This policy is delivered through the implementation of Boral's Integrated Health Safety Environment and Quality (HSEQ) Management System and related strategies, improvement plans and programs.

Mike Kane
Chief Executive Officer & Managing Director