Boral Quarries
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Peppertree Quarry Modification 4

BACKGROUND SCOPING DOCUMENT

Prepared for Boral Quarries | August 2015

PEPPERTREE QUARRY MODIFICATION 4

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Prepared for Boral Resources (NSW) Pty Ltd
August 2015

REPORT STATUS - FINAL

Job number - PR25 Peppertree Quarry

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0	7 July 2015	For Boral Review	Neville Hattingh	Rod Wallace
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1 INTRODUCTION

1.1 Overview

Boral Resources (NSW) Pty Ltd (Boral) owns and operates the Peppertree Quarry (the Quarry), a hard rock quarry located in Marulan South.

Boral is seeking to modify the current Project Approval (PA 06_0074) under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to provide for the following (hereafter referred to as the Project):

- Extend in-pit operating hours at the Quarry by 6 hours; and
- Develop a new overburden emplacement area.

The modification proposed above will constitute Modification 4 to the current Project Approval. The Minister for Planning is the consent authority for the proposed modification.

This Background Scoping Document has been prepared by PACT[1], on behalf of Boral to describe the key elements of the proposed modification, with the view to seek confirmation from the Department of Planning and Environment (DP&E) on the scope and environmental assessment requirements of the Environmental Assessment (EA) and to facilitate further design development.

1.2 Site Description

The Quarry is located in Marulan South, 10 kilometres (km) southeast of Marulan, 35 km east of Goulburn and approximately 175 km south-west of Sydney, within the Goulburn Mulwaree Local Government Area (LGA) in the Southern Tablelands of NSW (**Figure 1**). Access is via Marulan South Road, which connects the Quarry and Boral's Marulan South Limestone Mine with the Hume Highway approximately 9 km to the northwest (**Figure 2**). Boral's private rail line connects the Quarry and Limestone Mine with the Main Southern Railway approximately 6 km to the north (**Figure 2**).

The Quarry is located on Boral owned land approximately 650ha in size, which includes the Quarry site, approximately 70ha in size, additional granodiorite resources to the south and surrounding land (**Figures 3 and 4**). The site is zoned RU1 - Primary Production zone under the Goulburn Mulwaree Local Environmental Plan (LEP) 2009 (**Figure 5**). Mining and extractive industries are permissible in this zone with consent.

The Quarry is bordered to the south by the Limestone Mine, to the east by Morton National Park and by rural properties to the north and west. Surrounding land uses include mining, grazing, rural properties including an agricultural lime manufacturing facility, fireworks storage facility, turkey farm and rural residential. The main access for these properties is via Marulan South Road. Rural residential properties are also located to the northeast of the mine along Long Point Road. These properties are separated from the mine by the deep Barbers Creek gorge. Sensitive receivers are shown in **Figure 2**.

The site of the former village of Marulan South is located between the Quarry and the Limestone Mine on Boral owned land. The village was established principally to service the mine but has been uninhabited since the late 1990's. The majority of the village's infrastructure has been removed and only a village hall and former bowling club remains. The bowling club has been converted into administration offices for the Limestone Mine.

[1] PACT is a collaboration of highly experienced individuals from various companies that offer specialist environmental consulting services, for the delivery of major state significant projects.

1.3 The Applicant

Boral Resources (NSW) Pty Ltd is a wholly owned subsidiary of Boral Limited and is the Applicant for the Project.

As Boral Resources (NSW) Pty Ltd owns the land on which the modifications to the existing Project Approval are proposed, landowner consent is not required.

Boral is an international building and construction materials group, headquartered in North Sydney, Australia. Boral's competitive position is underpinned by being a market leader in Cement and Construction Materials in Australasia, Plasterboard in Australia and Asia and Cladding and Roof Tiles in the USA.

The Boral Construction Material and Cement division employs over 5,000 employees in its quarry, concrete, asphalt, concrete placing and cement operations. The business is a major supplier of products to the dwelling, commercial construction, and roads and engineering markets.

Boral operates over 110 quarries, sand pits and gravel operations, producing products such as concrete aggregates, crushed rock, asphalt and sealing aggregates, road base materials, sand and gravels for the Australian construction materials industry.

FIGURE 1
Regional context
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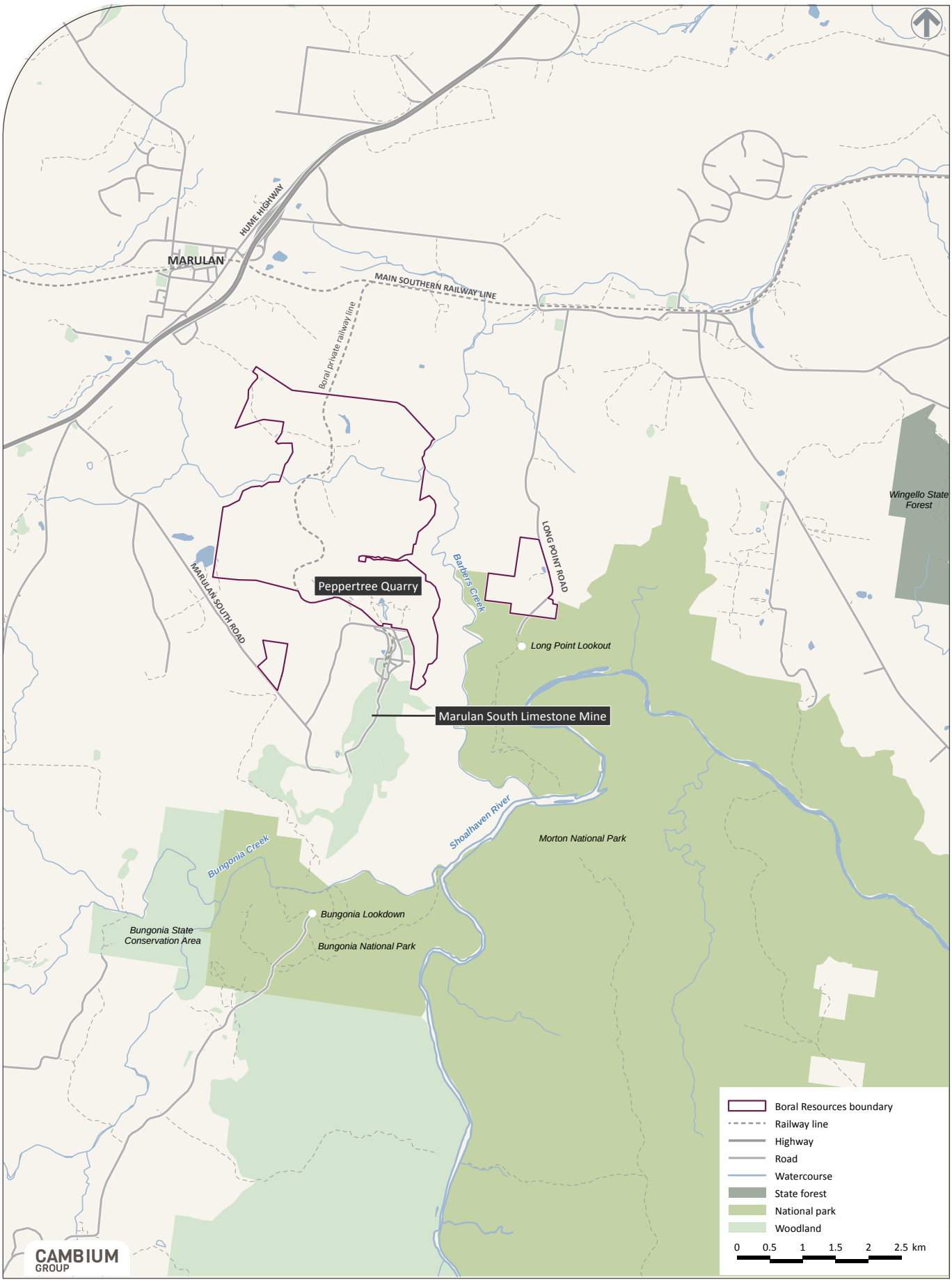

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FIGURE 2
Local context
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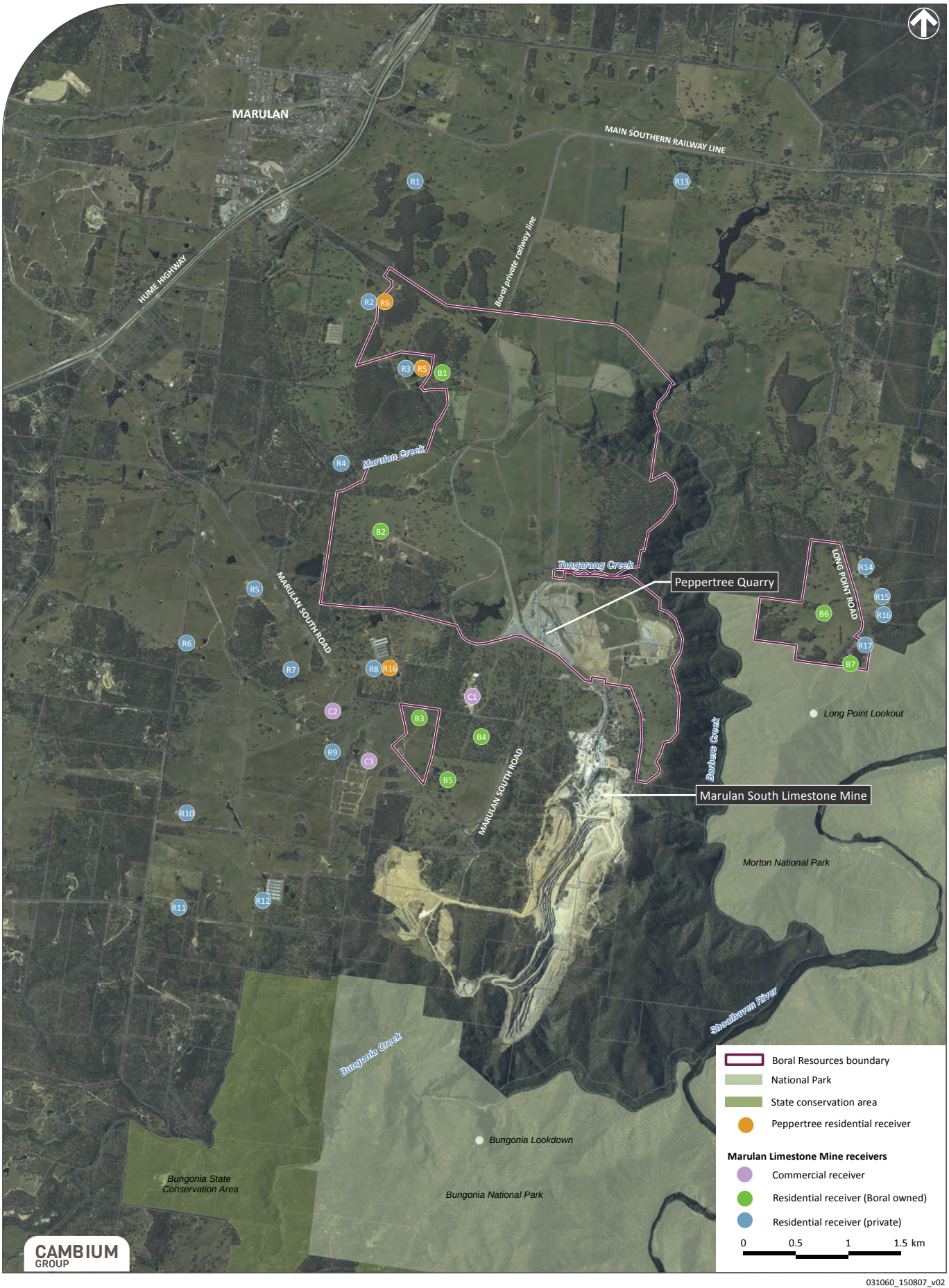

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FIGURE 3
Land ownership
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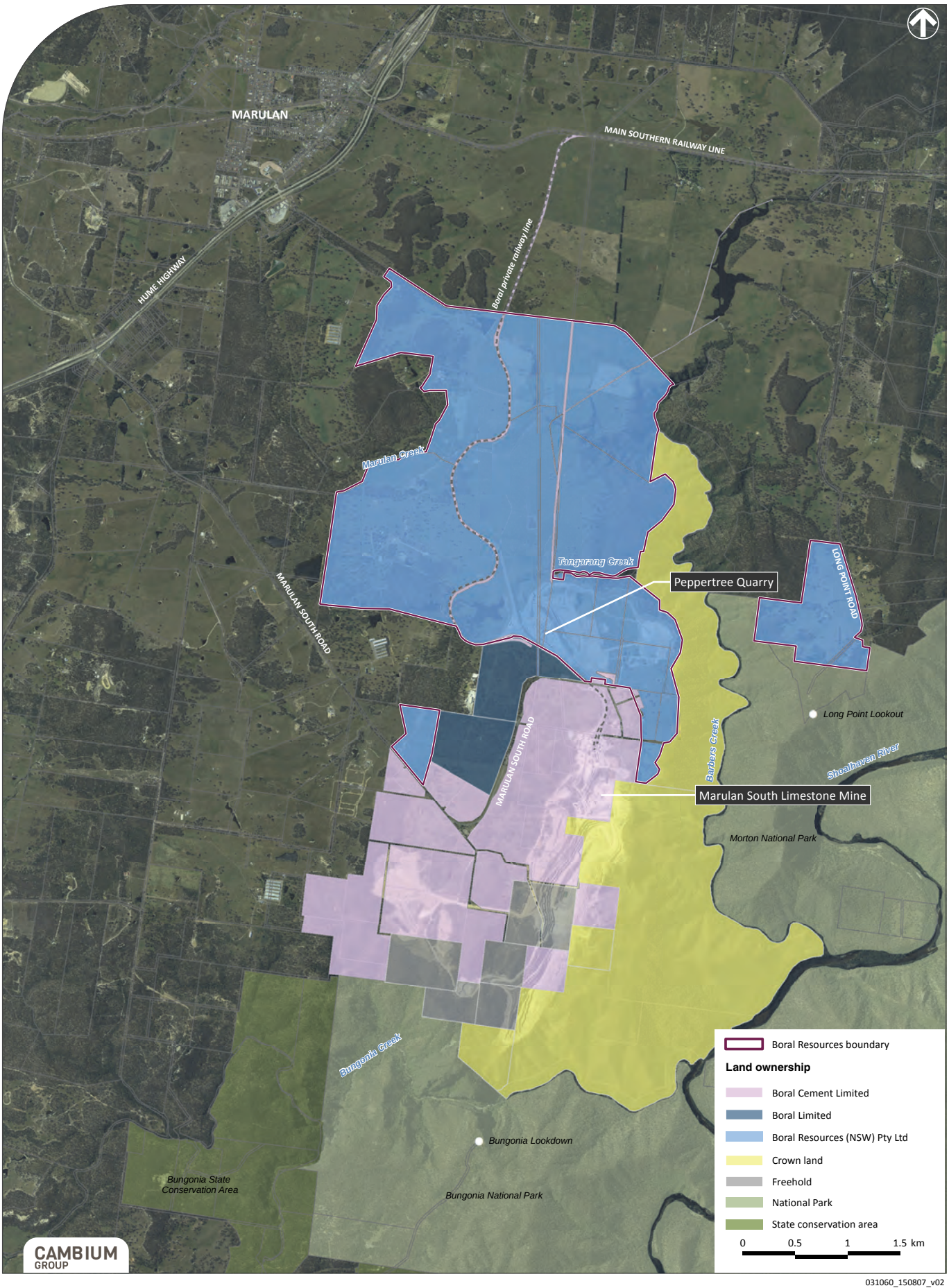

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FIGURE 4
Landuse
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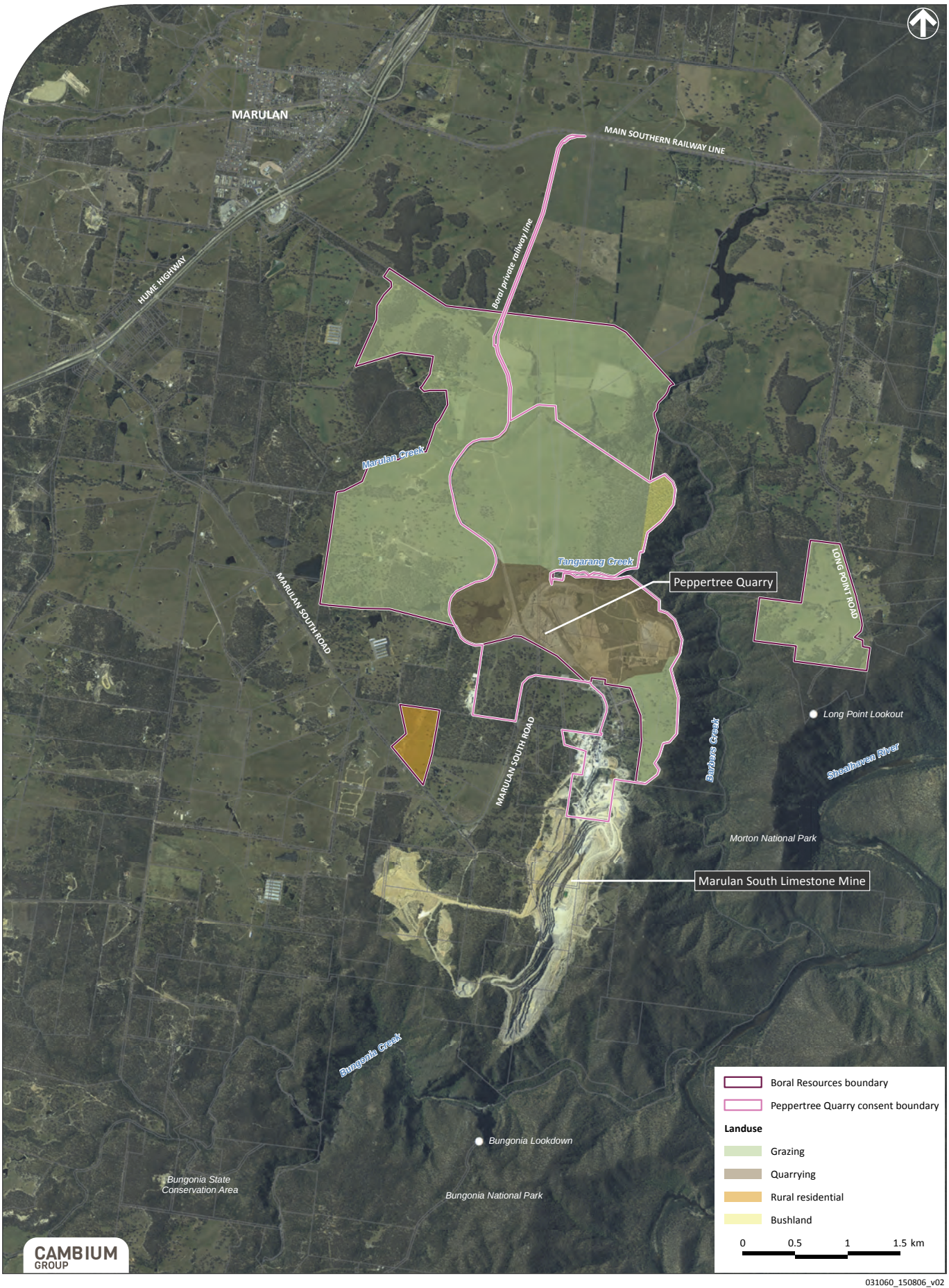

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FIGURE 5
Land zoning
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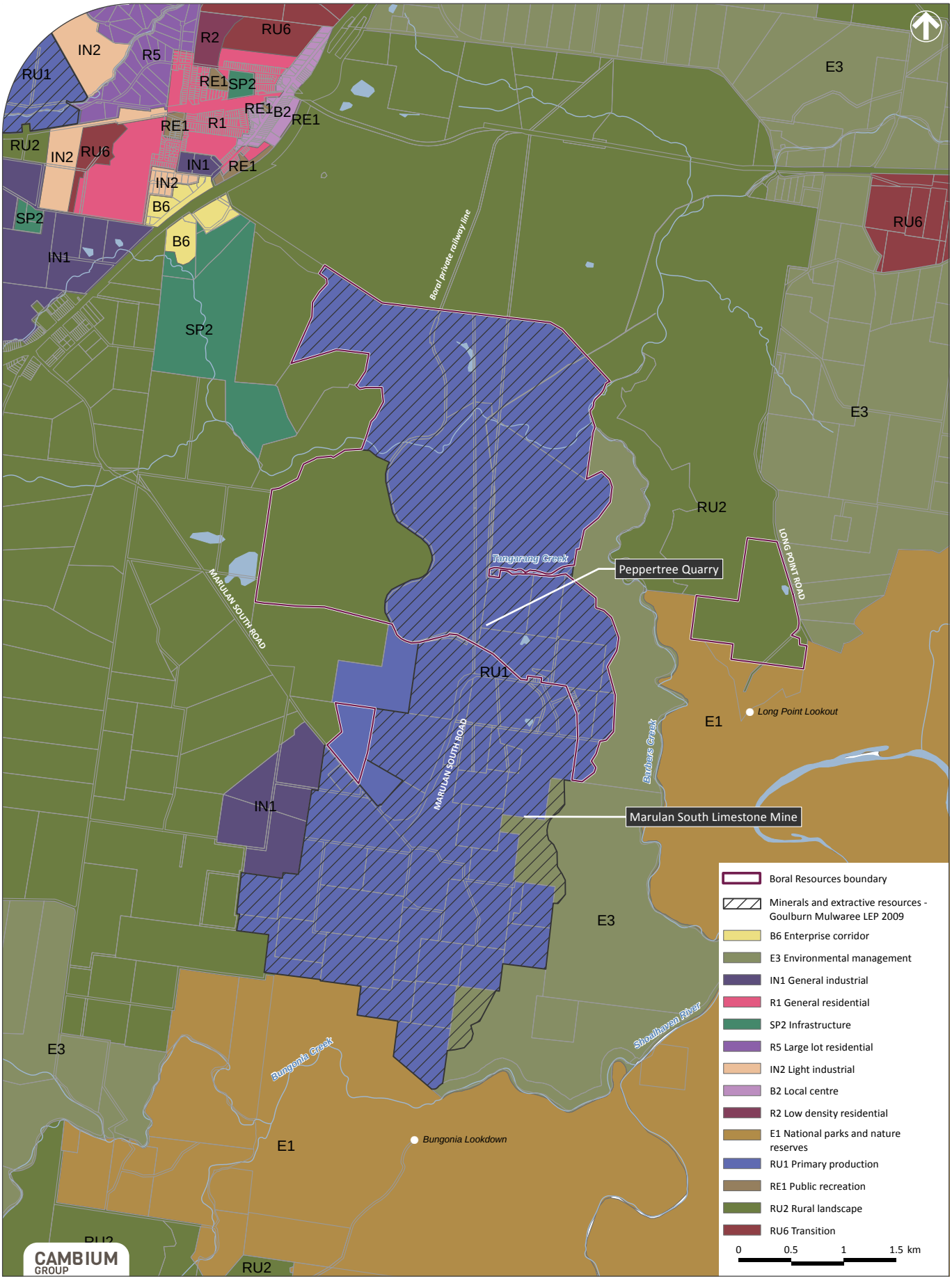

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2 EXISTING OPERATIONS

2.1 Operational History

The greater Sydney Metropolitan area has traditionally been the Australian building and construction sector's major market.

Boral is a leading producer and supplier of building and construction materials in the country. Accordingly, a significant amount of development in Sydney, including many of the city's best known structures, are underpinned by Boral-supplied concrete, cement and asphalt.

Concrete and asphalt are generated using course and fine hard rock aggregates. Since the 1800s, the majority of Sydney's aggregate demand has been supplied from quarries at Emu Plains in western Sydney.

These quarries, including the Boral Emu Plains site, are now almost exhausted of their hard rock resources.

Boral commenced planning for alternative sources of aggregate in the early 2000s to secure supply to its concrete, asphalt and other operations in Sydney.

The Boral Sydney Aggregates Project was the result of this planning and involved the establishment of the Peppertree Quarry, as well as the building of a rail transfer terminal at Maldon, near Picton.

2.2 Planning Approval History

Peppertree Quarry obtained planning approval from the Minister for Planning in 2007 under Part 3A of the EP&A Act. Planning approval PA 06_0074 has since been modified three times as outlined in **Table 1.**

Table 1: Planning Approval History

Date of Planning Approval	DA/MOD Number	Details
28 February 2007	PA06_0074	The "Marulan South hard rock quarry and associated infrastructure" project was granted approval by the Minster for Planning under Part 3A of the EP&A Act.
17 March 2009	Modification 1 PA06_0074	Approved under Section 75W of the EP&A Act for the construction of an exploratory test pit to extract a suitable amount of granodiorite to test and model rock behaviour and to assist with the design of plant and equipment for the Quarry.
3 November 2011	Modification 2 PA06_0074	Approved under Section 75W of the EP&A Act for infrastructure and site layout changes including the: ▪ Construction of a new rail loop embankment and overburden emplacement; ▪ Reduction in the water storage dam

Date of Planning Approval	DA/MOD Number	Details
		size; and ▪ Relocation of loading facilities, processing plant and stockpiling.
2 November 2012	Modification 3 PA06_0074	Approved under Section 75W of the EP&A Act for power and rail infrastructure changes including the: ▪ Construction of a HV line approximately 1km in length; and ▪ Construction of an extension to the existing passing line on Boral's private rail line at Medway Junction.

The consolidated project approval for the Quarry, as modified by the above applications, is attached to this document as **Appendix A**.

2.2.1 Environmental Protection Licence

The Protection of the Environment Operations Act 1997 (PoEO Act) provides for an integrated system of licensing and contains a core list of activities requiring Environmental Protection Licenses (EPL) from the Environment Protection Authority (EPA). The activities are called 'scheduled activities' and are listed in Schedule 1 of the Act.

The Peppertree Quarry operates under EPL No. 13088.

2.3 Approved Project

2.3.1 Quarry Activities and Infrastructure

The approved quarrying activities are for extraction of 105 million tonnes of granodiorite over 30 years at an initial rate of 1 - 2 million tonnes per annum (Mtpa) and a maximum rate of 3.5 Mtpa. Granodiorite is an intrusive igneous rock suitable for use as a construction and building material. The hard rock aggregates produced at the site are a range of different shapes and sizes for different purposes. Primary production is of concrete and asphalt aggregates (10 mm) and railway ballast (28 - 50 mm) with capacity to produce larger aggregates (>100 mm) for rock armour and gabion baskets. Fines (generally <5 mm) produced during crushing of product are blended with limestone sand from Boral's adjacent Limestone Mine or Penrose Quarry to produce a marketable manufactured sand.

Infrastructure at the Quarry includes a processing plant, rail loop and loading facilities, two water storage dams, an in-pit mobile crushing plant, overburden emplacement areas, noise and visual bunding, product stockpiles, and staff facilities. The location of infrastructure at the Quarry is shown on **Figure 7**.

Work to establish the quarry commenced in July 2011. Production commenced early in 2014 following a lengthy commissioning and proving phase. The Quarry has approval to operate until the end of 2038.

2.3.2 Transport of Product

Product from the Quarry is transported entirely by rail except in an emergency where it would be transported by road with the written approval of the Secretary of DP&E. The

Quarry has approval to transport up to 3.5 Mtpa of product from the site. At full production the Quarry will operate up to four trains per day which will transport product north to the Sydney market and other customers. In addition, the Limestone Mine currently operates up to six trains per day transporting product north to Berrima and Maldon and east to Port Kembla.

Trains to the Quarry will access Boral's private rail line from the Main Southern Railway at the Medway Junction (**Figure 2**) which currently provides access to the Limestone Mine. The rail line is mostly single track with a 1 km length of triple line track used for shunting and train loading. A rail loop has been constructed at the Quarry for separation of rail movements on the rail line between the two Boral sites. Rail loading facilities were also established on the rail loop adjacent to the Quarry's processing plant.

Loading of product from the Quarry onto trains and train movements occur 24 hours, seven days a week. This enables train trips on the Main Southern Railway to be scheduled away from peak commuter times.

2.3.3 Operating Hours and Workforce

The Quarry operates 24 hours, 7 days a week with in-pit activities restricted to the hours of 7 am to 7 pm. Approved operating hours are outlined in detail in **Table 2**.

Table 2: Approved Operating Hours

Activity	Day	Time
Construction works	Monday-Friday Saturday Sunday and public holidays	7.00am to 6.00pm 8.00am to 1.00pm None
Topsoil/overburden removal/emplacement	Any day	7.00am to 7.00pm
Blasting	Monday-Saturday Sunday and public holidays	9.00am to 5.00pm None
In-pit activities (including drilling, extraction, processing, and transfer of material out of the pit)	Any day	7.00am to 7.00pm
Out-of-pit activities (including processing, stockpiling, train loading and distribution, and maintenance)	Any day	24 hours

Employment at the Quarry includes 30 full time persons distributed over 2 - 3 shifts.

2.3.4 Environmental Management and Monitoring

Boral has prepared and implemented a number of management plans at the Quarry in accordance with PA06_0074. They include the following:

- Noise Management Plan;
- Blast Monitoring Program;
- Air Quality Management Plan;
- Water Management Plan which includes:

  - Site Water Balance;
  - Erosion and Sediment Control Plan;
  - Surface Water Monitoring Program;
  - Ground Water Monitoring Program; and
  - Surface and Ground Water Response Plan;
- Aboriginal Heritage Management Plan; and
- Landscape and Rehabilitation Management Plan.

Boral also maintain a comprehensive environmental monitoring network at and surrounding the Quarry (**Figure 6**). Data captured from these environmental monitors is used by quarry management to monitor compliance with their Project Approval, EPL, and other regulatory requirements.

In accordance with PA06_0074, Boral has also prepared and implemented an Environmental Management Strategy, which is an overarching strategy for implementation of environmental management measures at the Quarry, and an Environmental Monitoring Program, which consolidates all the various monitoring requirements at the Quarry.

If amendments to the above documents are required as a result of the proposed modifications they will be undertaken within three months of a notice of approval and submitted to DP&E for endorsement in accordance with Schedule 5, Condition 7 of PA06_0074 (**Appendix A**).

FIGURE 6
Current environmental monitoring locations
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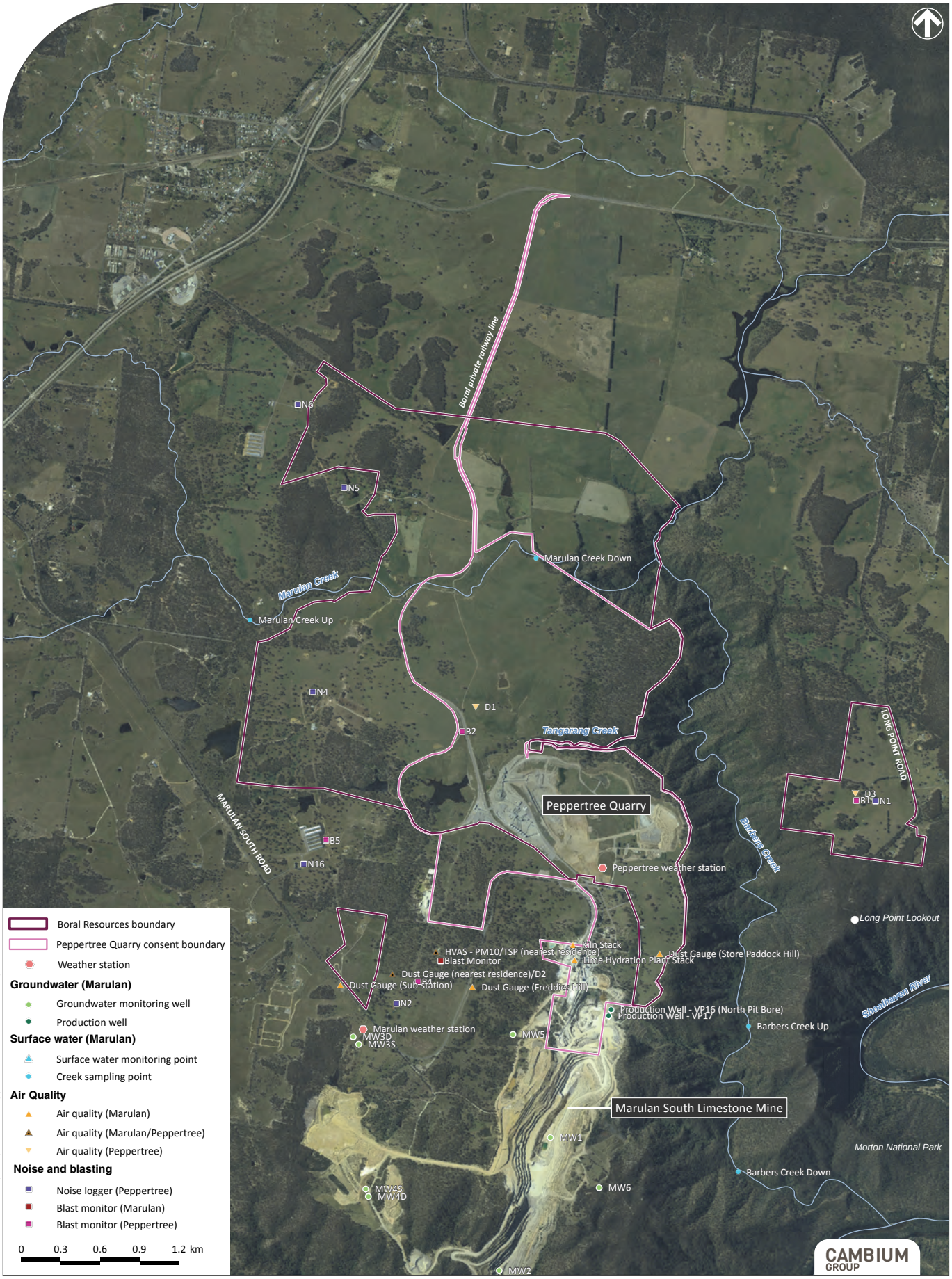

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3 PROPOSED MODIFICATIONS

3.1 Description of Modifications

Boral is seeking to modify the current Project Approval to:

- Extend in-pit operating hours at the Quarry by 6 hours; and
- Develop a new overburden emplacement area.

3.1.1 Extension of in-pit Operating Hours

Peppertree Quarry currently has approval to operate in-pit activities for 12 hours per day between 7am and 7pm. In-pit activities include:

- Drilling and blasting;
- Extraction;
- Delivering blast rock to the mobile crusher;
- Crushing of rock;
- Conveying crushed rock out of the pit.

Boral is seeking to extend these in-pit operating hours by 6 hours in order to account for scalping of overburden material in early phases of pit development and meet annual production volumes up to the approved limit of 3.5 million tonnes per annum. The time of the additional 6 hour period, outside of the approved 7am to 7pm in-pit operating hours, will be informed by the various technical studies, primarily noise and air quality.

Blasting will however continue within the current approved blasting hours of 9am - 5pm Monday to Saturday.

3.1.2 New Southern Overburden Emplacement

Overburden emplacement at the Quarry is currently approved within noise bunds located along the northern and eastern boundaries of the site, an emplacement area to the east of the approved quarry pit and a western emplacement area and noise bund to the west of the Quarry across Boral's private railway line. Remaining overburden was proposed to be emplaced within the south pit of Boral's adjoining Marulan South Limestone Mine.

The noise bunds were completed during construction of the Quarry, and the eastern overburden emplacement area will be at capacity by the end of October 2015. Mine planning for the limestone mine has ruled out emplacement within the south pit, and the area proposed for the western emplacement is planned for a future shared road sales stockpile area for the Quarry and Limestone Mine. The Limestone Mine, under its forthcoming development application, is seeking to hold 5 million m^3 (approximately 13 Mt) of overburden for the Quarry, however, this will not be approved until late 2016. As an interim measure, Boral is seeking to place approximately 1 million m^3 of overburden within a new overburden emplacement, in a gully south of the approved 30 year quarry pit (**refer to Figure 7)**. Overburden stripped from the pit will be transported by trucks along the most direct haul route possible (refer to Figure 7). This new overburden emplacement area will be needed in early 2016 and will take approximately 12 months to establish.

The proposed new overburden emplacement will be located within the southeastern extent of the future hard rock (granodiorite) resource, which extends south from the existing Quarry pit, to the northern end of the Limestone Mine's north pit. A significant granodiorite resource also exists on Boral's lands to the north of the existing Quarry pit, extending northwards from Tangarang Creek. The proposed southern overburden emplacement will not sterilise

resource as Boral will relocate this southern emplacement in the future if the southern granodiorite resource needs to be accessed. Although the southern overburden emplacement may be relocated in the future, this is unlikely to be required for at least the next 25 years. The proposed emplacement will therefore be landscaped and rehabilitated in accordance with the existing Peppertree Quarry Landscape and Rehabilitation Management Plan as outlined in **Section 5.3**.

FIGURE 7
The Project
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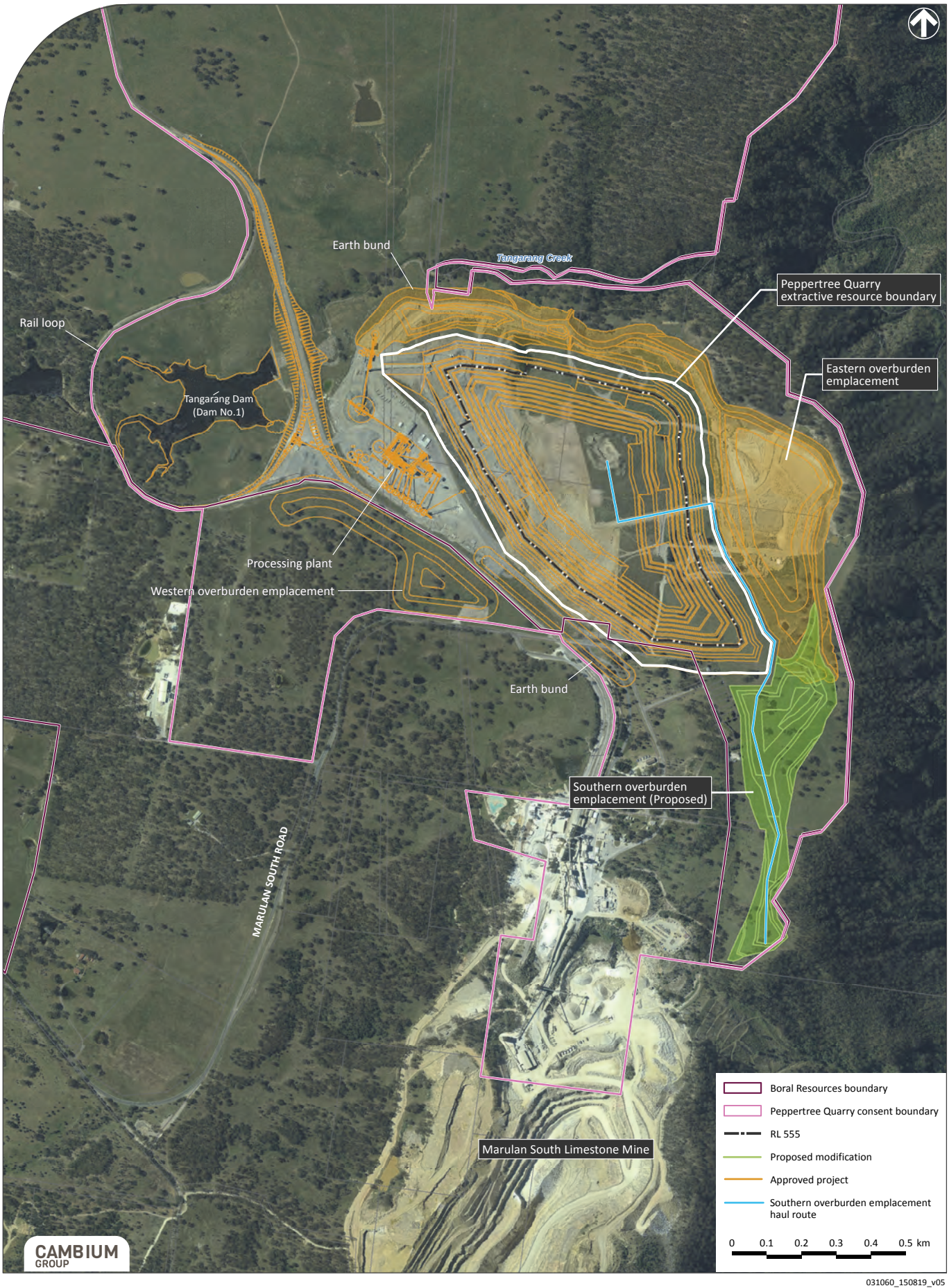

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4 LEGISLATIVE PLANNING CONSIDERATIONS

Boral seeks to modify PA06_0074, as described in Section 3.1, under Section 75W of the EP&A Act.

The following section identifies the applicable local and regional planning instruments, the relevant State and Commonwealth environment and planning legislation, and discusses the relevant planning approval process applicable to the proposed modification.

4.1 EP&A Act

Part 3A was repealed by the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* (Part 3A Repeal Act), which commenced on 1 October 2011. Under the Part 3A Repeal Act, projects deemed to be 'transitional Part 3A projects' will continue to be subject to Part 3A of the EP&A Act (as in force immediately before the repeal and as modified by the Part 3A Repeat Act). Transitional Part 3A projects include certain projects that were the subject of an existing approval under Part 3A.

As the Quarry has a Project Approval that was granted under Part 3A of the EP&A Act, it is a transitional Part 3A project. The provisions of Part 3A (as in force immediately prior to its repeal) continue to be applicable to the proposed modifications.

Based on the scope and scale of the proposed modifications as outlined in **Section 3**, they are not predicted to result in significant environmental consequences beyond the current Project Approval (**Appendix A**) and are proposed to be assessed under Section 75W.

4.2 Other Legislation and Policies

The list below provides a summary of other State and Commonwealth environment and planning legislation, potentially relevant to the proposed modifications that will be considered in the environmental assessment process.

Commonwealth Legislation:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act); and
- National Greenhouse and Energy Reporting Act 2007.

New South Wales State Legislation:

- Environmental Planning and Assessment Act 1979 (EP&A Act).

Other Key NSW State Legislation:

- Protection of the Environment Operations Act 1997 (POEO Act);
- Crown Lands Act 1989;
- Water Management Act 2000 (WM Act);
- Water Act 1912;
- National Parks and Wildlife Act 1974 (NPW Act);
- Threatened Species Conservation Act 1995;
- Heritage Act 1977;
- Native Vegetation Act 2003;
- Roads Act 1993;
- Contaminated Lands Management Act 1997; and
- Environmental Planning and Assessment Regulation 2000 (EP&A Regs).

State Environmental Planning Policies:

- SEPP No. 44 - Koala Habitat Protection;
- SEPP (Sydney Drinking Water Catchment) 2011;
- SEPP (Mining Petroleum Production and Extractive Industries) 2007;
- SEPP (Infrastructure) 2007; and
- SEPP (Major Development) 2005.

Local Environmental Plans:

- Goulburn Mulwaree Local Environmental Plan 2009.

5 PRELIMINARY ENVIRONMENTAL RISK ANALYSIS & KEY ENVIRONMENTAL FACTORS

A preliminary environmental risk analysis was undertaken to identify the key potential environmental factors or impacts associated with the proposed modifications, the results of which are outlined in **Section 5.1**. For those environmental factors that achieved a high or medium risk rating, further assessment is proposed, generally in the form of specialist technical investigations as detailed in **Section 5.2**. For those environmental factors that achieved a low risk rating, little or no further assessment is required as discussed in more detail in **Section 5.3**, as these non-key issues could largely be addressed using appropriate environmental safeguards and management measures.

5.1 Preliminary Environmental Risk Analysis

A preliminary environmental risk analysis was undertaken, with rankings allocated to each environmental factor being based on the likelihood of occurring and the perceived consequence of effects if left unmanaged. It does not consider the potential outcomes of specialist technical assessments and the application of mitigation measures to manage the environmental factor. In most cases, suitable mitigation measures are likely to minimise any potential impacts. Any residual risk remaining after the implementation of mitigation measures will be further considered and detailed in the EA.

The information provided in **Table 3** provides a summary of the key environmental factors considered in this Background Scoping Document and their associated risk ratings.

While detailed assessment will be undertaken to address all potential impacts, the key issues for consideration are expected to relate to those identified in **Table 3**. An outline of the existing environment, key potential risks, and further assessment required where relevant are outlined in **Section 5.2**.

Table 3: Risk Rating for Environmental Factors

Environmental Factor	Risk Rating	Comments
Noise and Vibration	High	By extending approved in-pit operations by 6 hours, extraction activities will take place in the night time when noise criteria are usually more stringent. As the mobile crusher (the largest single noise source during in-pit works) now operates at depth within the pit, it is likely that the walls of the pit will provide a substantial buffer to noise emissions, therefore reducing the noise levels experienced by neighbouring residential receivers. A quantitative noise assessment is therefore required to establish likely noise levels from the current and future in-pit operations and whether these meet the relevant night time noise criteria. The noise assessment will also predict likely noise levels at the sensitive receivers closest to the proposed new southern overburden emplacement. However it is unlikely that the proposed new southern emplacement would exceed relevant noise criteria as it is no closer to sensitive receivers than the existing approved eastern overburden emplacement.

Environmental Factor	Risk Rating	Comments
Air Quality	High	Extended in-pit operating hours and an additional overburden emplacement area, are likely to result in additional dust emissions from the site which require consideration in the form of a quantitative air quality assessment.
Biodiversity	High	The Project requires the clearing of native vegetation to allow for the proposed new southern overburden emplacement. This activity has the potential to impact on threatened species (flora and fauna) and endangered ecological communities.
Aboriginal Heritage	High	The new southern overburden emplacement area is proposed on land that has not been previously assessed for Aboriginal heritage values. This area has not been subject to significant previous surface disturbance and therefore has the potential to support Aboriginal artefacts and other cultural heritage values.
Surface Water	High	The new southern overburden emplacement area is proposed on the plateau, above the Barbers Creek gorge. Uncontrolled surface water runoff from this new emplacement has the potential to impact on both the quality and quantity of water discharged to Barbers Creek and the Shoalhaven River.
Visual	Medium	The new southern overburden emplacement is likely to be visible from neighbouring properties including private residences (primarily to the northeast) and the Bungonia Lookdown, within the Bungonia National Park to the south. The Project therefore has the potential to impact on the visual amenity and views of local receivers.
Historic Heritage	Low	Although the existing Limestone Mine and associated infrastructure has potential historic heritage value, it is unlikely that any items of historic heritage value are located within the proposed southern overburden emplacement area.

5.2 Key Environmental Factors

This section presents the further assessment likely to be required during the EA, generally in the form of specialist technical investigations, for those environmental factors that achieved a high or medium risk rating in the preliminary environmental risk analysis.

5.2.1 Noise and Vibration

Existing Environment

The mine is located within a rural area, which is generally characterised by low background noise levels. Noise sources in the local area include natural sources (birdsong, insects, livestock), commercial operations such as fireworks manufacturing and turkey farming, industrial operations including the agricultural lime facility, Marulan South Road, the Limestone Mine and the Quarry.

Potential Impacts

By extending approved in-pit operations by 6 hours, extraction activities will take place in the night time when noise criteria are usually more stringent.

As the mobile crusher (the largest single noise source during in-pit works) now operates at depth within the pit, it is likely that the walls of the pit will provide a substantial buffer to noise emissions, therefore reducing the noise levels experienced from neighbouring residential receivers.

Activities associated with the establishment of the new southern overburden emplacement area also have the potential to impact on sensitive receivers.

Further Assessment

A quantitative noise assessment is required to establish likely noise levels from the current and future in-pit operations and whether these meet the relevant night time noise criteria.

The noise assessment will also predict likely noise levels at the sensitive receivers closest to the proposed new southern overburden emplacement. However, it is unlikely that the proposed new southern emplacement would exceed relevant noise criteria as it is no closer to sensitive receivers than the existing approved eastern overburden emplacement.

A quantitative noise and vibration assessment will be undertaken in accordance with the recognised standards and guidelines, including:

- *NSW Industrial Noise Policy* (DECC, 2000) (INP); and
- *Interim Construction Noise Guidelines* (DECCW, 2009) (ICNG).

The noise and vibration assessment would include the following key tasks:

- Establish noise scenarios representing works with the potential for the most noise impact. The existing noise scenario would be used to validate the model and the new scenario would indicate potential noise impacts;
- Review of existing noise monitoring data to characterise the background noise levels and to determine criteria and potential constraints for the Project;
- Identify noise-sensitive receivers surrounding the Project;
- Identify the noise sources for the Project;
- Model noise levels for day, evening and night periods and determine compliance with criteria; and

- Present recommended noise and vibration mitigation and management measures to help reduce noise and vibration impacts at the identified receivers.

5.2.2 Air Quality

Existing Environment

The existing air quality in the area immediately surrounding the Quarry is influenced by a number of factors, including prevailing meteorological conditions, traffic, topography, agricultural activities and the adjacent Limestone Mine and Aglime fertiliser manufacturer.

Emissions from the existing Quarry operations consist mainly of particulate emissions. Emissions of pollutants from quarrying machinery and vehicle exhausts are of an insignificant nature.

The most common winds are from the west and west-southwest, and the east and east-northeast directions. This pattern of wind is evident in most seasons to various degrees. However, easterlies are less apparent in winter and westerlies are less apparent in summer. Winds from the northwest are also apparent in each season, particularly autumn and spring.

Potential Impacts

The Project, combined with dust emissions from the Limestone Mine, has the potential to result in cumulative dust impacts at sensitive receivers.

The potential impacts from in-pit works during the extended hours (e.g. 7pm to 1am) would be higher relative to the impacts from the same activity occurring from 7am to 7pm. Thus the impacts from the extended hours will contribute disproportionately more to the total dust emissions from the Project.

The proposed southern overburden emplacement area is also an additional source of dust that was not assessed as part of the approved project. However, air quality modelling from Modification 2 (infrastructure and layout changes) demonstrated that overburden emplacements close to the Quarry had lower air quality impacts than hauling the overburden to the alternative location in the south pit of the Limestone Mine.

Further Assessment

A quantitative air quality assessment will be undertaken through detailed analysis and assessment of air quality impacts, using air dispersion modelling. The air quality assessment would include the following key tasks:

- Review of existing air quality monitoring data to characterise site meteorology and background dust levels and to determine criteria and potential constraints for the Project;
- Characterise air quality in the regional air shed in regard to approved and foreseeable projects based on a review of publically available information on surrounding extractive/mining operations;
- Identification of the sources of dust emissions from the Project;
- Estimation of emission rates based on published emission factors and/or data supplied by manufacturers of process and control equipment where available as well as emission rates determined in previous air quality assessments;
- Detailed air dispersion modelling to determine air quality issues and zone of affectation;
- Analysis and assessment of operational air quality impacts (including PM10, TSP, Depositional Dust and PM2.5, with focus on PM10);

- Detailed analysis and assessment of the incremental and cumulative air quality impacts of the Project with consideration of underlying ambient levels and also other nearby approved operations; and
- Description of existing and additional pollution control equipment and pollution control processes to be employed at the Quarry to suppress or minimise emissions.

5.2.3 Biodiversity

Existing Environment

The proposed southern overburden emplacement area is located on open grasslands on an elevated plateau bordering the wooded gorge of Barbers Creek. The grasslands, which are actively grazed by cattle, are comprised of a mixture of exotic and native grasses, interspersed with clumps of native trees.

Potential Impacts

Key potential biodiversity impacts associated with the Project include:

- The potential presence of the Critically Endangered Ecological Community (CEEC): White Box Yellow Box Blakely's Woodland (WYB Grassy Woodland) within the proposed southern overburden emplacement area, which is listed under both State and Commonwealth legislation; and
- The potential for the emplacement area to contain critical habitat for the Koala as determined under the EPBC Act.

Other aspects associated with the Project that are unlikely to result in significant impacts to biodiversity within the adjacent woodlands of the Barbers Creek gorge include noise, dust, lighting and stormwater runoff.

Further Assessment

A biodiversity assessment will be undertaken and will consider the potential impacts on threatened flora and fauna. The biodiversity assessment methodology will be consistent with the *Framework for Biodiversity Assessment: NSW Offsets Policy for Major Projects* (2014) (FBA), which is the key policy document for assessing and offsetting impacts for State Significant Development in NSW. In addition, consideration will be given to the Commonwealth requirements for survey and offsetting under the EPBC Act.

The biodiversity assessment would include the following key tasks:

- Review of existing biodiversity data and previous assessments undertaken for the Project area;
- Searches of relevant databases (Atlas of NSW Wildlife and the EPBC Act Protected Matters Search Tool) will be undertaken specifically for the Project area using a 20 km radius;
- A combination of targeted flora and fauna surveys, along with habitat based field assessments to identify threated biodiversity and their habitats;
- BioBanking survey requirements for threatened species would be obtained through use of BioBanking assessment tools to highlight the threatened biodiversity for targeted survey. Measurements of vegetation quality (gathered via BioBanking plots) will be conducted in order to enter data into the BioBanking calculator for offset evaluation;
- Consideration of other potential biodiversity impacts associated with the Project including noise, dust, lighting and stormwater runoff;

- Identification of opportunities for impact avoidance and appropriate adaptive management actions to avoid significant impacts, as well as opportunities to enhance existing biodiversity values along the perimeter of the Project site;
- Likelihood of occurrence assessments and assessments of significance for any threatened species; and
- Development of an offset strategy (if required) in accordance with the FBA.

5.2.4 Aboriginal Heritage

Existing Environment

The Marulan area has both a rich Aboriginal and post-colonial history. Previous studies at the Quarry and the surrounding area have documented an Aboriginal archaeological record consisting of frequent and sometimes dense stone artefact sites. The area was situated at the boundaries of four traditional aboriginal groups including:

- The Gandangar;
- The Ngunawal;
- The Wandandian; and
- Wodi.

Today the area is situated in the Pejar Local Aboriginal Land Council boundaries.

The terrain of the Project site is predominantly flat with some gently undulating areas and steeper areas towards the east, at the heads of drainage lines that form tributaries of Barbers Creek. Historically the area has been used for cattle and sheep grazing.

The Quarry has been subject to a detailed Aboriginal heritage assessment and excavation program including historical research, archaeological assessment and artefact analysis. This information will be relied upon during the Aboriginal cultural heritage assessment for the Project area.

The Quarry has an Aboriginal Management Committee, which provides advice and assistance with regards to Aboriginal heritage matters as governed by the Aboriginal Heritage Management Plan for the site.

Potential Impacts

The Quarry is located in an area of Aboriginal heritage sensitivity with a large number of artefacts already uncovered within the approved development consent boundary.

The new southern overburden emplacement area is proposed on land that has not been previously assessed for Aboriginal heritage values. This area has not been subject to significant previous surface disturbance and therefore has the potential to support Aboriginal artefacts and other Aboriginal cultural heritage values.

Further Assessment

An Aboriginal heritage survey and assessment would be conducted as part of the EA to determine the significance of potential impacts and where necessary provide appropriate mitigation and management measures. The Aboriginal heritage assessment would include the following key tasks:

- Consultation with the Aboriginal Management Committee in accordance with the Aboriginal Heritage Management Plan for the site including notification of fieldwork, participation in fieldwork and report review;

- Identifying and mapping known Aboriginal sites and constraints through a review of information about Aboriginal heritage in the Project area and surrounding region. This would include searches of the Aboriginal Heritage Information Management System (AHIMS) database and other relevant Federal, State and local heritage lists, and previous heritage studies and assessments;
- Conducting a field survey of the southern overburden emplacement area. This survey would be designed and executed in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010); and
- Preparing and delivering an Archaeological Report and Aboriginal Cultural Heritage Assessment Report (ACHAR) as per the reporting requirements for Aboriginal Heritage Assessments established by the *Guide to Investigating, Assessing and Reporting on Aboriginal Heritage* (OEH, 2011).

The purpose of the Aboriginal heritage assessment shall be to identify Aboriginal cultural heritage values within the study area and identify appropriate management and impact mitigation measures in accordance with the statutory framework and in response to the assessed level of cultural significance. Aboriginal cultural heritage values include Aboriginal objects (artefacts or other physical signs of past Aboriginal activity), Aboriginal sites (defined as the location of one or more Aboriginal objects) and places of significance according to Aboriginal tradition (which includes intangible heritage).

5.2.5 Surface Water

Existing Environment

The Quarry is located within the Shoalhaven River Catchment in the Southern Tablelands of New South Wales. Barbers Creek is a tributary of the Shoalhaven River (a drinking water supply) and is located immediately to the east of the Quarry. The Quarry is situated toward the edge of a plateau and adjacent to steep gullies that plunge into the ravine of the Barbers Creek system.

Surface water within the Quarry site is managed in accordance with the Peppertree Quarry Water Management Plan. The surface water management system includes a number of sediment basins that capture stormwater runoff from disturbed areas (overburden emplacements, haul roads and processing plant) which is then directed northwards (through pumping or gravity flow) into Tangarang Dam. Tangarang Dam is located on the main ephemeral creek, Tangarang Creek, which flows along the northern edge of the Quarry site to Barbers Creek approximately 500m to the east of the Quarry. Barbers Creek flows into the Shoalhaven River 6.5km downstream of the Quarry and 30km upstream of Tallowa Dam, which supplies raw water to the Sydney and Illawarra drinking water systems.

The proposed new southern overburden emplacement area is located on a plateau above the Barbers Creek gorge. This site drains predominantly eastwards into small ephemeral tributaries of Barbers Creek and southwards into another ephemeral drainage line that currently discharges into the north pit of the Limestone Mine.

Potential Impacts

The proposed modification involves establishing a new southern overburden emplacement and a new haul road, increasing the extent of exposed soil surfaces. Without appropriate design and control, this overburden emplacement has the potential to contribute significant sediment loads and impact both the quality and quantity of water discharged to tributaries, Barbers Creek and the Shoalhaven River if not managed appropriately.

Appropriately designed and managed landforms, conveyance systems and sediment treatment basins, as well as prompt rehabilitation will be used to mitigate any potential impacts of sediment discharge from this new overburden emplacement.

Further Assessment

An assessment of potential impacts on surface water will be undertaken, including evaluation of water quality and quantity impacts and impacts on existing drainage lines.

Information will be obtained from the specialist Project team and quarry operators with experience in erosion and sediment control (soil scientists, hydrologists, engineers, and environmental scientists) to identify appropriate and practical management and mitigation measures that can be implemented on site. This information, which will be outlined in the EA, will ultimately be captured within a revision of the Peppertree Quarry Water Management Plan.

The surface water assessment will involve:

- Developing a thorough understanding of the Project through site visits and review of historical assessment reports;
- Describing and visual representation of the current surface water management approach;
- Assessing erosion rates for sediment basin sizing based on existing soils and rehabilitation reporting from the Quarry;
- Assessment of potential impacts on the flow regime of receiving watercourses including Barbers Creek, it's tributaries and the Shoalhaven River;
- Assessment of potential water quality impacts (including those associated with dust emissions) on Barbers Creek and the Shoalhaven River;
- Determining indicative hydraulic capacity and dimensions for all stormwater conveyance systems;
- Providing recommendations on required changes to existing surface water management practices that meet any water quality and quantity requirements of the proposed Project and are in accordance with current relevant legislation, guidelines (including Blue Book Volume 2E - Mines & Quarries) and industry best practice. This will include a visual representation of the proposed approach to surface water management from the southern overburden emplacement; and
- Identification of any licensing requirements or other approvals that relate to water use, management and discharge.

The surface water assessment would need to demonstrate a neutral or beneficial effect (NorBE) on water quality, in accordance with the requirements of the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*.

5.2.6 Visual

Existing Environment

It is evident that the landscape around the Project generally has a high visual absorption capacity due to the existing terrain and scattered vegetation. The high visual absorption capacity corresponds directly with the generally low significance of visual impacts to views of the Quarry site.

Potential Impacts

Although the proposed southern overburden emplacement is predominantly sheltered from view from most potential nearby receptors due to the natural topography and vegetation, it has the potential to be visible from private residences along Long Point Road to the northeast and the Bungonia Lookdown, within the Bungonia National Park to the south. The Project therefore has the potential to impact on the visual amenity and views of local receivers.

Extending the in-pit operational hours will not change visual impacts.

Further Assessment

A visual impact assessment will be undertaken to assess potential impacts to visual amenity associated with the Project. The visual analysis will include assessing potentially affected surrounding sensitive receivers and viewing locations in both the private and public domains, including public roads.

A view point analysis will be conducted and the visual assessment will focus on the degree of visual modification likely to be experienced from different vantage points and the sensitivity of the viewing places and of viewers to those changes. The assessment will include the preparation of 2-D and 3-D terrain analysis and transects to confirm the Project visibility at final landform.

5.2.7 Historical Heritage

Existing Environment

The Quarry site and most of the adjacent land has been extensively disturbed by agricultural practices such as clearing, grazing, pasture improvement and fodder cropping since European settlement of the area. Aerial photographs dating from 1946 to 1991 confirm a long history of agricultural use (ERM, 2006). The proposed southern overburden emplacement area is predominantly grassland and is still actively grazed by cattle.

The Limestone Mine (operated since 1875) is immediately south of the proposed southern overburden emplacement area and the site of the former village of Marulan South is close to the western boundary of the proposed emplacement. Items of potential industrial heritage occur at and near the Limestone Mine, such as defunct buildings and associated infrastructure. Dwellings and infrastructure associated with the former village of Marulan South no longer remain.

Potential Impacts

Due to the proximity of the existing Limestone Mine and the former village of Marulan South there is the potential for old, disused infrastructure that has potential historic heritage value, to be located within the proposed southern overburden emplacement area.

Further Assessment

A historical heritage survey and assessment would be conducted as part of the EA to identify heritage items, review the management requirements of listed heritage items and identify appropriate management and impact mitigation measures in accordance with their assessed level of cultural significance. The historical heritage assessment would include the following key tasks:

- Data collection and review of historical information concerning the Project site and the surrounding region. This would include reviews of relevant heritage registers, inventories, plans and listings including the NSW State Heritage Register and Inventory, the LEP, Australian Heritage Database, and non-statutory lists such as the National Trust of NSW Register;
- Further desktop research including examination of primary and secondary sources of information about the Project site. This would include reviews of previous heritage and contextual studies for the region, any published or unpublished histories or historical accounts, and examination of the historical land use in the region, analysis of images, maps, plans and other documents as needed;
- Identification of any potential cultural landscape issues associated with the Project site;
- A field survey of the Project site for historical heritage places and items;

- Preparation of a historical heritage impact assessment report. This would include significance assessment in accordance with the NSW Heritage Act 1977 criteria (including statements of significance for each heritage item), and relevant NSW Heritage Branch Assessment Guidelines, including the *NSW Heritage Manual, The Assessing Heritage Significance Guideline, and the Burra Charter Principles*; and
- Identification of potential impacts (including potential cumulative impacts from surrounding projects), preparation of statements of heritage impact for places and items within impact areas, and identification of measures to manage, mitigate, monitor, avoid and offset potential adverse impacts.

5.3 Other Environmental Factors

Other environmental factors related to the proposed modifications that have been identified in the preliminary environmental risk analysis as having a low risk rating include:

- Land Contamination: The site of the proposed southern overburden emplacement has been used primarily as grazing lands. It is therefore unlikely to have been subjected to historic contaminating activities. A contaminated land investigation is therefore not required;
- Land and Rehabilitation: The proposed southern overburden emplacement will be constructed out of the same material as the existing overburden emplacements on the site and will be designed to similar standards. The southern overburden emplacement will therefore be landscaped and rehabilitated in accordance with the existing Peppertree Quarry Landscape and Rehabilitation Management Plan. The EA will comment on the need to update the existing Landscape and Rehabilitation Management Plan to address matters such as:
  - Temporary and Permanent stabilisation measures;
  - Progressive rehabilitation during overburden emplacement; and
  - Final rehabilitation as soon as is practicable after completion of the southern overburden emplacement.
- Traffic and Transport: Material will not be taken off site, hauling material will be undertaken within the property from the Quarry pit to the southern overburden emplacement area;
- Groundwater: Establishing the new southern overburden emplacement does not require excavations and therefore groundwater will not be impacted;
- Greenhouse Gas: As the proposed modifications will not result in an increase in total production volumes at the Quarry, significant volumes of additional Greenhouse Gas is unlikely to be generated by the Project;
- Socio-Economic: The proposed modifications will not result in a change in the type of activities undertaken at the Quarry. Therefore, if the medium to high risk environmental impacts can be appropriately mitigated the Project is unlikely to result in any socio-economic impacts;
- Hazards: The proposed modifications are unlikely to result in any additional hazardous activities to those already undertake at the Quarry e.g. storage of fuel; and
- Waste Management: The proposed modifications are unlikely to generate a significant volume of additional waste.

The proposed modification is unlikely to result in any additional impacts on these low risk environmental factors than what has already been assessed in the EA prepared as part of the original approved development consent in 2006, and/or subsequent approved modifications in 2011 and 2012. In-depth specialist investigations are therefore unlikely to be required for these low risk environmental factors. A qualitative assessment approach will

be taken for the assessment of potential impacts from these environmental aspects as follows:

- A brief description of the assessment undertaken in the original EA and subsequent Modifications will be provided;
- The identified impacts and mitigation measures recommended in the original EA and subsequent Modifications will be presented; and
- Further mitigation measures and environmental controls that have been implemented in compliance with the 2007 development consent conditions, subsequent modification consents, the Environmental Protection Licence, Environmental Management Plans and other best environmental management practices, will be summarised in the EA. Any additional mitigation measures that are identified as being required to meet current regulatory standards, guidelines and/or best practice, will be presented in the EA where considered reasonable, feasible and specific to the Quarry operating parameters.

6 STAKEHOLDER ENGAGEMENT

Successful completion of the EA will require consultation with a number of key stakeholders and the local community.

Stakeholder and community engagement will commence prior to and during the preparation of the EA, to ensure that all potential issues are identified and considered in:

- The assessment of the Project;
- Defining the Project, including any limitations to in-pit activities or the establishment of the proposed new southern overburden emplacement; and
- Developing appropriate safeguards and environmental management measures.

6.1 Government Stakeholders

Boral plans to consult with all relevant stakeholders including (but not limited to) the following:

- NSW Department of Planning and Environment;
- Goulburn Mulwaree Council;
- Transport for NSW (including Centre for Transport Planning, Roads and Maritime Services);
- NSW Office of Environment and Heritage;
- NSW Environment Protection Authority (EPA);
- Department of Primary Industries (Office of Water, Fisheries, Land and Natural Resources and Agriculture) (a division of NSW Trade);
- National Parks and Wildlife Services;
- Water NSW;
- Resources and Energy (a division of NSW Trade);
- Federal Department of the Environment; and
- Indigenous stakeholders.

Different methods of consultation will be adopted and will depend on the stakeholder, their level of interest in the Project and the level of impact to the key environmental issues that they have an interest in. Consultation methods will include:

- Notifying stakeholders of the Project and identifying any particular issues that they require to be considered in the preparation of the EA;
- Meeting with DP&E at the time of lodgement of this document to discuss the Project, the key issues identified for consideration in the EA process and the proposed consultation strategy;
- Meetings with DP&E along with other key Government Agencies during the EA process to discuss key issues; and
- Meeting with DP&E at the time of lodgement of the EA for adequacy to discuss the outcomes of the environmental assessment and consultation process, residual environmental impacts and environmental controls that are proposed to mitigate these impacts.

Where additional stakeholders become apparent during the preparation of the EA, appropriate consultation will be undertaken.

6.2 Community

Boral will consult with the existing Community Consultative Committee, as well as members of the community that are located within the vicinity of the Project and that have the potential to be affected by the Project.

Boral has developed a comprehensive community engagement strategy which will be implemented throughout the environmental assessment process. The focus of the community engagement program will be to identify any relevant concerns the community may have about the Project, ensure these concerns are appropriately considered by the Project team and, where necessary, address these through changes or refinements to the proposed modifications.

The findings from the stakeholder and community consultation process will be presented in a separate chapter of the EA. This will record consultation undertaken, issues identified and how these were addressed in the EA.

7 CONCLUSION

Boral is seeking to modify the current Project Approval (PA 06_0074) under Section 75W of the EP&A Act, to provide for extended in-pit operating hours and development of a new overburden emplacement area at the Quarry.

This document has been prepared by PACT, on behalf of Boral to describe the key elements of the proposed modification, with the view to seek confirmation from the Department of Planning and Environment on the scope and environmental assessment requirements of the EA.

This document identifies environmental factors that will require further detailed investigations as part of the environmental impact assessment that will be detailed in the EA.

During the environmental scoping process, no environmental factors have been identified that would cause the Project to result in significant and/or unacceptable environmental impacts (assuming the implementation of appropriate environmental controls and management measures).

8 REFERENCES

(GSSE 2010), GSS Environmental, M*arulan South Limestone Mine Rehabilitation Strategy for Blue Circle Southern Cement Limited*, July 2010.

(PAE Holmes 2009), PAE Holmes, *Marulan South Limestone Mine Air Quality Impact Assessment*, October 2009.

(EMM 2012), EMGA Mitchell McLennan, *Peppertree Quarry Modification 3*, August 2012

(ERM 2011) Environmental Resource Management, Boral Peppertree Quarry Section 75 W Modification 2, June 2011

(ERM 2006), Environmental Resource Management, Marulan South Quarry Environmental Assessment Report, October 2006

(ERM 2008), Environmental Resource Management, Marulan South Quarry Statement of Environmental Effects for a Pre-commencement Exploratory Test Pit, November 2008

(SCA 2011) Sydney Catchment Authority, The *Neutral or Beneficial Effect on Water Quality Assessment Guideline, 2011*

(DECCW 2010) *OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents,* 2011

(DEC 2005) DEC, *Interim Community Consultation Requirements for Applicants,* 2005

(Firth 1983), *The Goulburn Heritage Study, report prepared for the Goulburn Council*

(Chisholm 2006) Chisholm, 2006, Wilson, John (1800) Australian Diction of Biography [Online Edition], http://www.adb.online.anu.edu.au/biogs/A020552b.htm, accessed 26/06/2012.

9 ABBREVIATIONS

Abbreviation	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
DA	Development Application
DECCW	Department of Environment Climate Change and Water (now OEH)
DP&E	Department of Planning and Environment
DRE	Department of Resources and Energy
EEC	Endangered Ecological Community
EMP	Environmental Management Plan
EPA	Environment Protection Authority
EP&A Act	The NSW Environmental Planning and Assessment Act 1979
EP&A Regulation	The NSW Environmental Planning and Assessment Regulation 2000
EPBC Act	Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
FBA	Framework for Biodiversity Assessment: NSW Offsets Policy for Major Projects (2014)
ha	Hectare
ICNG	Interim Construction Noise Guideline (DECC 2009)
INP	Industrial Noise Policy
km	Kilometre
LEP	Local Environmental Plan
LGA	Local Government Area
m	Metre
MNES	Matters of National Environmental Significance
Mtpa	Million Tonnes Per Annum
NSW	New South Wales
OEH	Office of Environment and Heritage
$PM_{2.5}$	Particulate matter less than or equal to 2.5 micrometres in aerodynamic diameter
PM_{10}	Particulate matter less than or equal to 10 micrometres in aerodynamic diameter
POEO Act	Protection of Environment Operations Act 1997
RMS	NSW Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SWL	Sound Power Level
tpa	Tonnes Per Annum
TSP	Total Suspended Particulate

APPENDIX A

EXISTING PROJECT
APPROVAL 06_0074

APPENDIX A

Project Approval

Section 75J of the *Environmental Planning & Assessment Act 1979*

I, the Minister for Planning approve the project referred to in schedule 1, subject to the conditions set out in schedules 2 to 5.

The reason for these conditions is to:

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

Frank Sartor MP
Minister for Planning

Sydney 2007 File No. 9040608

SCHEDULE 1

Project Application:	06_0074
Proponent:	Boral Resources (NSW) Pty Ltd
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Marulan South hard rock quarry and associated infrastructure

TABLE OF CONTENTS

Red type represents March 2009 Modification
Blue type represents November 2011 Modification
Green type represents October 2012 Modification

DEFINITIONS

Annual Review	The review required by condition 4 of schedule 5
BCA	Building Code of Australia
CCC	Community Consultative Committee
Council	Goulburn Mulwaree Council
Day	Day is defined as the period from 7.00am to 6.00pm, Monday to Saturday and 8.00am to 6.00pm Sundays and Public Holidays
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department (or nominee)
DPI	Department of Primary Industries
EA	Environmental Assessment for the project titled *Marulan South Quarry Environmental Assessment Report* Volumes 1 and 2 dated October 2006 prepared by ERM
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence under the *Protection of the Environment Operations Act 1997*
Evening	Evening is defined as the period from 6.00pm to 10.00pm
Land	Land means 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 approval
Night	Night is defined as the period from 10.00pm to 7.00am Monday to Saturday and 10.00pm to 8.00am Sundays and Public Holidays
Noise Bund	Bunds built for noise and visual mitigation purposes and which do not exceed 10 metres in height
NOW	NSW Office of Water, within the Department of Primary Industries
OEH	Office of Environment and Heritage
Project	Development to which the Project Approval applies
Proponent	Boral Resources (NSW) Pty Ltd
RMS	Roads and Maritime Services
Site	Land to which the Project Approval applies (see Appendix 1)
Submissions Report	*Marulan South Quarry Submissions Report* dated December 2006

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) submissions report;
   (c) modification application 06_0074 – MOD 1 and accompanying Statement of Environmental Effects entitled *Marulan South Quarry Statement of Environmental Effects for a Pre-commencement Exploratory Test Pit* dated 13 November 2008, and letter from Boral Resources Pty Ltd to the Department dated 13 February 2009;
   d) modification application 06_0074 – MOD 2 and the accompanying EA titled *Boral Peppertree Quarry Section 75W Modification Report*, dated June 2011, prepared by ERM Australia, and the responses to issues raised in submissions, including those titled *Peppertree Quarry Submissions Report*, dated 24 August 2011, *Response to OEH Submission*, dated 12 October 2011, and *Response to Armitt Submission*, dated 25 October 2011;
   e) modification application 06_0074 – MOD 3 and the accompanying EA titled *Peppertree Quarry Modification 3 Environmental Assessment*, dated August 2012, prepared by EMGA Mitchell McLennan Pty Limited, and the responses to issues raised in submissions titled *Response to Submissions Peppertree Quarry Modification 3*, dated 3 October 2012; and
   f) conditions of this approval.

   Note: The general layout of the project is shown in the figure in Appendix 2.

3. If there is any inconsistency between the above, either the most recent document or the conditions of this approval shall prevail to the extent of the inconsistency.

4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

4A. The proponent shall be permitted to undertake pre-construction exploratory test pit activities as described in modification application 06_0074 MOD 1.

Note: The commencement of test pit activities as described in modification application 06_0074 MOD 1 is not subject to the preparation of management plans.

Limits on Approval

5. This approval shall lapse at the end of 2038.

6. The Proponent shall not transport more than 3.5 million tonnes of product from the site in a year.

7. All extractive materials and products shall be transported from the site by rail. However, the Proponent may transport some product by road in an emergency with the written approval of the Director-General.

Structural Adequacy

8. The Proponent shall ensure that all new buildings and structures on the site are constructed in accordance with the relevant requirements of the BCA.

   Notes:
   - *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for any building works.*
   - *Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of development.*

Demolition

9. The Proponent shall ensure that all demolition work on site is carried out in accordance with *AS 2601-2001: The Demolition of Structures,* or its latest version.

Protection of Public Infrastructure

10. The Proponent shall:
    (a) repair, or pay all reasonable costs associated with repairing any public infrastructure that is damaged by the project; and
    (b) relocate, or pay all reasonable costs associated with relocating any public infrastructure that needs to be relocated as a result of the project.

Operation of Plant and Equipment

11. The Proponent shall ensure that all plant and equipment used at the site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient condition.

12. With the approval of the Director-General, the Proponent may prepare and submit any management plan or monitoring program required by this approval on a progressive basis.

SCHEDULE 3
ENVIRONMENTAL PERFORMANCE CONDITIONS

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Identification of Boundaries

1. Prior to the commencement of construction, or as otherwise agreed by the Director-General, the Proponent shall:
   (a) engage an independent registered surveyor to survey the boundaries of the approved limit of extraction;
   (b) submit a survey plan of these boundaries to the Director-General; and
   (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.

Note: The limit of extraction is shown conceptually on the plan in Appendix 2.

NOISE

Construction of Bunds

2. In carrying out the construction of the noise bunds, the Proponent shall:
   (a) comply with the construction noise criteria in the *Environmental Noise Control Manual 1994* for the first three months of the construction work; and
   (b) thereafter, comply with the daytime operational noise criteria in condition 4.

Construction Noise Management Plan

3. The Proponent shall prepare and implement a Construction Noise Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the commencement of construction, and include:
   (a) a detailed description of the measures that would be implemented to achieve the construction noise limits in the *Environmental Noise Control Manual 1994* and the operational noise criteria in condition 4*;*
   (b) a community notification protocol for the proposed construction activities;
   (c) a description of the measures that would be implemented where the construction noise limits and/or operational noise limits are unlikely to be achieved or are not being achieved; and
   (d) details of who would be responsible for monitoring, reviewing and implementing the plan.

Operational Noise Impact Assessment Criteria

4. The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1.

Residential Receiver	***Day Shift***	***Night Shift***		
	Day $L_{Aeq(15\ minute)}$	*Evening* $L_{Aeq(15\ minute)}$	*Night*	
			$L_{Aeq(15\ minute)}$	$L_{A1(1\ minute)}$
2	39	35	35	45
5	35	35	35	45
6	35	35	35	45
16	41	35	35	45
Any other noise sensitive location	35	35	35	45

Table 1: Noise Impact Assessment Criteria

Notes:

- *The identified "Day" noise criteria apply throughout the period of the site's Day Shift (ie 7.00am to 7.00pm) on all days, despite the general definitions of Evening and Night otherwise applying to the approval. The identified "Evening" and "Night" criteria apply only during the period of the site's Night Shift (ie 7.00pm to 7.00am).*
- *Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*
- *Residential receiver locations are shown in Appendix 2A.*

Land Acquisition Criteria

5. If the noise generated by the project exceeds the criteria in Table 2, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 6-8 of Schedule 4.

Residential Receiver	***Day*** $L_{Aeq(15\ minute)}$	***Evening / Night*** $L_{Aeq(15\ minute)}$
2	44	44
5	40	40
6	40	40
16	44	44

Table 2: Land Acquisition Criteria

Note: The notes under Table 1 apply equally to Table 2.

Cumulative Noise Criteria

6. The Proponent shall take all reasonable and feasible measures to ensure that the noise generated by the project combined with the noise generated by other extractive industries does not exceed the following amenity criteria on any privately owned land, to the satisfaction of the Director-General:
   - $L_{Aeq(11\ hour)}$ *50 dB(A) – Day;*
   - $L_{Aeq(4\ hour)}$ *45 dB(A) – Evening; and*
   - $L_{Aeq(9\ hour)}$ *40 dB(A) – Night.*

Additional Noise Mitigation Measures

7. Upon receiving a written request from the owner of residential receiver 3 (except where a negotiated noise agreement is in place) the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the owner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Proponent 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 Director-General for resolution.

8. Within 3 months of this approval, the Proponent shall notify the owner of residential receiver 3 that he/she is eligible for additional noise mitigation measures.

Operating Conditions

9. The Proponent shall:
   (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the noise generated by the project;
   (b) investigate ways to minimise the noise generated by the project;
   (c) operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and noise monitoring data to guide the day to day planning of quarrying operations and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval;
   (d) minimise noise impacts during adverse weather conditions; and
   (e) report on these investigations and the implementation and effectiveness of these measures in the Annual Review,

   to the satisfaction of the Director-General.

Noise Management Plan

10. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with EPA and submitted to the Director-General for approval by the end of March 2012, and must:
   (a) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval;
   (b) describe the noise management system;
   (c) include a noise monitoring program that:
      - supports the noise management system;
      - provides information to evaluate the performance of the project;
      - includes a protocol for determining exceedances of relevant conditions of this approval; and
      - provides for the use of real-time and/or supplementary attended monitoring measures, if directed by the Director-General;
   (d) include a community notification protocol for the proposed construction activities; and

(e) detail who would be responsible for monitoring, reviewing and implementing the plan.

Hours of Operation

11. The Proponent shall comply with the hours of operation in Table 3.

Activity	*Day*	*Time*
Construction works	Monday-Friday	7.00am to 6.00pm
	Saturday	8.00am to 1.00pm
	Sunday and public holidays	None
Topsoil/overburden removal/emplacement	Any day	7.00am to 7.00pm
Blasting	Monday-Saturday	9.00am to 5.00pm
	Sunday and public holidays	None
In-pit activities (including drilling, extraction, processing, and transfer of material out of the pit)	Any day	7.00am to 7.00pm
Out-of-pit activities (including processing, stockpiling, train loading and distribution, and maintenance)	Any day	24 hours

Table 3 – Hours of Operation

BLASTING AND VIBRATION

Airblast Overpressure Criteria

12. The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 4 at any residence on privately-owned land.

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

Table 4: Airblast Overpressure Impact Assessment Criteria

Ground Vibration Criteria

13. The Proponent shall ensure that the ground vibration level from blasting at the project does not exceed the criteria in Table 5 at any residence or sensitive receiver on privately-owned land.

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

Table 5: Ground Vibration Impact Assessment Criteria for Residences on Privately-owned Land

Operating Conditions

14. The Proponent shall implement best blasting practice to:
(a) ensure that no flyrock leaves the site;
(b) protect the safety of people, property, and livestock; and
(c) minimise the dust and fume emissions from blasting on the site,
to the satisfaction of the Director-General.

Public Notice

15. The Proponent shall:
    (a) notify the landowner/occupier of any residence within 2 kilometres of the quarry pit who registers an interest in being notified about the blasting schedule on site;
    (b) operate a blasting hotline, or alternative system agreed to by the Director-General, to enable the public to get up-to-date information on blasting operations at the project; and
    (c) keep the public informed about this hotline (or any alternative system),
    to the satisfaction of the Director-General.

Monitoring

16. The Proponent shall prepare and implement a Blast Monitoring Program for the project to the satisfaction of the Director-General. This program must:
    (a) be submitted to the Director-General for approval prior to the commencement of construction;
    (b) be prepared in consultation with the EPA; and
    (c) monitor the performance of the project against the relevant blasting criteria.

AIR QUALITY

Air Quality Impact Assessment Criteria

17. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 6, 7 and 8 at any residence on privately owned land, or on more than 25 percent of any privately owned land.

Table 6: Long term impact assessment criteria for particulate matter

Pollutant	***Averaging period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 7: Short term impact assessment criterion for particulate matter

Pollutant	***Averaging period***	***[d] Criterion***
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 8: Long term impact assessment criteria for deposited dust

Pollutant	***Averaging period***	***Maximum increase[2] in deposited dust level***	***Maximum total[1] deposited dust level***
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 6-8

[a] Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the project on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

Land Acquisition Criteria

18. If particulate matter emissions generated by the project exceed the criteria in Tables 9, 10, and 11 at any residence on privately-owned land, or on more than 25 percent of any privately owned land, then upon written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in conditions 6-7 of schedule 4.

Table 9: Long term land acquisition criteria for particulate matter

Pollutant	***Averaging period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 10: Short term land acquisition criteria for particulate matter

Pollutant	Averaging period	[da] Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 150 µg/m^3
Particulate matter < 10 µm (PM_{10})	24 hour	[b] 50 µg/m^3

Table 11: Long term land acquisition criteria for deposited dust

Pollutant	Averaging period	Maximum increase[2] in deposited dust level	Maximum total[1] deposited dust level
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes to Tables 9-11

[a] Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);

[b] Incremental impact (i.e. incremental increase in concentrations due to the project on its own);

[c] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and

[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Director-General.

Operating Conditions

19. The Proponent shall:
    (a) implement best management practice on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project;
    (b) minimise any visible air pollution generated by the project;
    (c) minimise the surface disturbance of the site generated by the project; and
    (d) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and air quality monitoring data to 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 approval;

    to the satisfaction of the Director-General.

Air Quality Management Plan

20. The Proponent shall prepare and implement a detailed Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be prepared in consultation with EPA and submitted to the Director-General by the end of March 2012;
    (b) describe the measures that would need to be implemented to ensure compliance with the relevant conditions of this approval;
    (c) include a program for the implementation of the measures referred to in (b) above; and
    (d) include an air quality monitoring program that:
        - uses a combination of high volume samplers and dust deposition gauges to evaluate the performance of the project;
        - supports the air quality management system;
        - provides information to evaluate the performance of the project;
        - includes a protocol for determining exceedances of relevant conditions of this approval; and
        - provides for the use of real-time monitoring measures, if directed by the Director-General.

METEOROLOGICAL MONITORING

21. For the life of the project, the Proponent shall ensure that there is a meteorological station in the vicinity of the site that:
    (a) complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline; and
    (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*.

SURFACE AND GROUND WATER

Water Supply

22. Prior to the commencement of construction, the Proponent shall obtain the necessary approvals for the project under the *Water Act 1912*.

Note: The Water Management Act 2000 may apply to the project. The Proponent shall consult with the NOW on the relevant approvals at the time the application is made.

Discharges

23. Except as may be expressly provided for by an EPL, the Proponent shall not discharge any dirty water from the quarry or ancillary operational areas.

23A. The Proponent shall prepare an onsite wastewater report for the proposed effluent management system consistent with the requirements of *Sydney Catchment Authority – "Developments in Sydney's Drinking Water Catchment" – Water Quality Information Requirements, 2011.* The effluent management system must be designed and constructed to be in accordance with this onsite wastewater report and its design must be approved by Council prior to construction.

Tangarang Creek Environmental Flow

24. The proponent shall provide an environmental flow to Tangarang Creek equivalent to 10% of average daily flows. Details of the management of these environmental flows shall be included in the Site Water Balance for the project (see below).

Sediment Dams

25. The Proponent shall ensure that:
    (d) critical structures such as "dirty water" dams are designed, constructed and maintained to a accommodate a 1 in 100 year ARI 24-hour event; and
    (e) other dams and water management structures are designed, constructed and maintained to accommodate a 1 in 20 year ARI 24-hour event.

Management and Monitoring

26. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval prior to the commencement of construction;
    (b) be prepared in consultation with the NOW, EPA and Sydney Catchment Authority; and
    (c) include a:
        - Site Water Balance;
        - Erosion and Sediment Control Plan;
        - Surface Water Monitoring Program;
        - Ground Water Monitoring Program; and
        - Surface and Ground Water Response Plan to address any potential adverse impacts associated with the project.

Site Water Balance

27. The Site Water Balance shall
    (a) include details of all water extracted (including make up water), dewatered, transferred, used and/or discharged by the project; and
    (b) describe measures to minimise water use by the project.

Erosion and Sediment Control

28. The Erosion and Sediment Control Plan shall:
    (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
    (b) identify activities that could cause soil erosion and generate sediment;
    (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
    (d) describe the location, function, and capacity of erosion and sediment control structures; and
    (e) describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.

Surface Water Monitoring

29. The Surface Water Monitoring Program shall include:
    (a) detailed baseline data on surface water flows and quality in Tangarang Creek and Barbers Creek;
    (b) surface water impact assessment criteria;
    (c) a program to monitor surface water flows and quality;
    (d) a protocol for the investigation of identified exceedances of the surface water impact assessment criteria; and
    (e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.

Ground Water Monitoring Program

30. The Ground Water Monitoring Program shall include:
    (a) detailed baseline data on ground water levels, flows, and quality, based on statistical analysis;
    (b) groundwater impact assessment criteria for monitoring bores;
    (c) a program to monitor regional ground water levels and quality; and
    (d) a protocol for the investigation of identified exceedances of the ground water impact assessment criteria.

TRAFFIC AND TRANSPORT

31. The Proponent shall prepare and implement a construction traffic management plan for the project to the satisfaction of the RMS and Council.

ABORIGINAL HERITAGE

32. The Proponent shall prepare and implement an Aboriginal Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (f) be submitted to the Director-General for approval prior to the commencement of construction;
    (g) be prepared in consultation with the OEH and relevant Aboriginal communities; and
    (h) include a:
    - description of the measures that would be implemented for the mapping, and salvage or relocation of the archaeological relics in the Tangarang Creek Dam 1 area;
    - description of the measures that would be implemented if any new Aboriginal objects or relics are discovered during the project; and
    - protocol for the ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site.

32A If historical archaeological relics are unexpectedly discovered during works, all works must cease and a suitably qualified and experienced historical archaeologist be brought in to assess the find. Depending on the nature of the discovery, additional assessment and recording may be required prior to the recommencement of excavation in the affected area. The Heritage Council (or its Delegate) must be notified of this discovery in writing in accordance with section 146 of the *Heritage Act, 1977.*

FLORA AND FAUNA

33. The Proponent shall:
    (a) rehabilitate the site in a manner that is generally consistent with the conceptual rehabilitation principles in Chapter 2.8 of the EA; and
    (b) implement the Habitat Management Area in a manner that is generally consistent with the documents listed in condition 2 of schedule 3 (and shown conceptually in Appendix 3), including the establishment, conservation and maintenance of at least 13.5 hectares of vegetation species characteristic of Box Gum Woodland,
    to the satisfaction of the Director-General.

Threatened Species Protection

33A. The Proponent shall:
    (a) prior to clearing of vegetation and site preparation on the site of the Western Overburden Emplacement and extension, clearly and securely mark out the proposed boundary of the emplacement and extension;
    (b) avoid disturbance of *Box Gum Woodland* Endangered Ecological Community and other native vegetation adjacent to the site of the Western Overburden Emplacement and extension;
    (c) only undertake clearing of vegetation on the site of the Western Overburden Emplacement and extension following a recent fauna survey undertaken by a suitably qualified expert who has been approved by the Director-General; and
    (d) seek to avoid clearing of native vegetation on the site of the Western Overburden Emplacement and extension during the period August to November of any year.

Landscape and Rehabilitation Management Plan

34. The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (e) be submitted to the Director-General for approval prior to the commencement of construction;
    (f) be prepared in consultation with the OEH and Council;
    (g) describe in general the short, medium, and long-term measures that would be implemented to:
    - rehabilitate the site;
    - implement the Habitat Management Area;
    - manage the remnant vegetation and habitat on the site; and
    - landscape the site (including the bunds and overburden emplacement areas) to mitigate any visual impacts of the project;

(h) describe in detail the measures that would be implemented over the next 5 years to rehabilitate and manage the landscape on the site;
(i) describe how the performance of these measures would be monitored over time; and
(j) set completion criteria for the rehabilitation of the site.

Rehabilitation Bond

35. Within 3 months of the first Independent Environmental Audit the Proponent shall lodge a rehabilitation bond for the project with the Director-General. The sum of the bond shall be calculated at $2.50/m^2 for the total area to be disturbed in each 5 year period, or as otherwise directed by the Director-General.

Notes:

- *If the rehabilitation is completed to the satisfaction of the Director-General, the Director-General will release the rehabilitation bond.*
- *If the rehabilitation is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the rehabilitation bond, and arrange for the satisfactory completion of the relevant works.*

36. Within 3 months of subsequent audits, the Proponent shall review, and if necessary revise, the sum of the bond to the satisfaction of the Director-General. This review must consider:
(a) the effects of inflation;
(b) any changes to the total area of disturbance; and
(c) the performance of the rehabilitation against the completion criteria of the Rehabilitation and Landscape Management Plan.

VISUAL IMPACT

Visual Amenity and Lighting

37. The Proponent shall:
(a) *minimise the visual impacts, and particularly the off-site lighting impacts, of the project;*
(b) *revegetate overburden emplacements, emplacement extensions and bunds as soon as practicable;*
(c) *take all practicable measures to further mitigate off-site lighting impacts from the project; and*
(d) *ensure that all external lighting associated with the project complies with* Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting*,*
to the satisfaction of the Director-General.

38. *(Deleted)*

39. *(Deleted)*

Advertising

40. The Proponent shall not erect or display any advertising structure(s) or signs on the site without the written approval of the Director-General.

Note – This does not include business identification, traffic management and safety or environmental signs.

WASTE MANAGEMENT

41. The Proponent shall:
(a) monitor the amount of waste generated by the project;
(b) investigate ways to minimise waste generated by the project;
(c) implement reasonable and feasible measures to minimise waste generated by the project; and
(d) report on waste management and minimisation in the Annual Review.
to the satisfaction of the Director-General.

42. The Proponent shall ensure that all waste generated or stored on site is assessed, classified and managed in accordance with the EPA's *Environmental Guidelines: Assessment Classification and Management of Liquid and Non-Liquid Wastes*.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

43. The Proponent shall ensure that the storage, handling, and transport of dangerous goods are conducted in accordance with the relevant *Australian Standards*, particularly AS1940 and AS1596, and the *Dangerous Goods Code*.

Safety

44. The Proponent shall secure the project to ensure public safety to the satisfaction of the Director-General.

Bushfire Management

45. The Proponent shall:
    (a) ensure that the project is suitably equipped to respond to any fires on-site; and
    (b) assist the rural fire service and emergency services as much as possible if there is a fire on-site.

PRODUCTION DATA

46. The Proponent shall:
    (a) provide annual production data to the DPI using the standard form for that purpose; and
    (b) include a copy of this data in the Annual Review.

QUARRY EXIT STRATEGY

47. The Proponent shall prepare and implement a Quarry Exit Strategy for the project to the satisfaction of the Director-General. This strategy must:
    (a) be submitted to the Director-General for approval at least 5 years prior to the cessation of the project;
    (b) be prepared in consultation with the relevant agencies;
    (c) define the objectives and criteria for quarry closure;
    (d) investigate options for the future use of the site, including any final void/s;
    (e) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the project; and
    (f) describe how the performance of these measures would be monitored over time.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner (excluding quarry owned properties) considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Proponent in writing for an independent review of the impacts of the project on his/her land.

   If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision, the Proponent shall:

   (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Director-General, to:
   - consult with the landowner to determine his/her concerns;
   - conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
   - if the project is not complying with these criteria then:
     - determine if the more than one quarry/mine is responsible for the exceedance, and if so the relative share of each quarry/mine regarding the impact on the land;
     - identify the measures that could be implemented to ensure compliance with the relevant criteria; and

   (b) give the Director-General and landowner a copy of the independent review.

3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Proponent shall:

   (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until the project complies with the relevant criteria; or

   (b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment criteria,

   to the satisfaction of the Director-General.

   If the independent review determines that the project is not complying with the relevant acquisition criteria, and that the project is primarily responsible for this non-compliance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in condition 6-7 below.

5. If the independent review determines that the relevant criteria are being exceeded, but that more than one quarry/mine is responsible for this exceedance, then together with the relevant quarry/mine/s, the Proponent shall:

   (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until there is compliance with the relevant criteria; or

   (b) secure a written agreement with the landowner and other relevant mine/s to allow exceedances of the relevant impact assessment criteria,

   to the satisfaction of the Director-General.

   If the independent review determines that the project is not complying with the relevant acquisition criteria in schedule 3, but that more than one mine is responsible for this non-compliance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant quarries/mine/s, in accordance with the procedures in conditions 6-7 below.

LAND ACQUISITION

6. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:

(i) the current market value of the landowner's interest in the property at the date of this written request, as if the land was unaffected by the project the subject of the project application, having regard to the:
- existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
- presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 7 of Schedule 3;

(j) the reasonable costs associated with:
- relocating within the Goulburn Mulwaree local government area, or to any other local government area determined by the Director-General; and
- obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and

(k) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

Upon receiving such a request, the Director-General will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:
- consider submissions from both parties;
- determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- prepare a detailed report setting out the reasons for any determination; and
- provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Director-General for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Director-General will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.

Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General's determination.

If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Director-General determines otherwise.

7. The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 6 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.

8. *(deleted)*

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT AND MONITORING CONDITIONS

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General for approval prior to the commencement of construction, and:
   (a) provide the strategic context for environmental management of the project;
   (b) identify the statutory requirements that apply to the project;
   (c) describe in general how the environmental performance of the project would be monitored and managed;
   (d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the construction, operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the life of the project;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   (e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the project.

ENVIRONMENTAL MONITORING PROGRAM

2. The Proponent shall prepare an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General prior to the commencement of construction, and consolidate the various monitoring requirements in Schedule 3 of this approval into a single document.

INCIDENT REPORTING

3. Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Proponent shall report the exceedance/incident to the Department and any relevant agencies. This report must:
   (a) describe the date, time, and nature of the exceedance/incident;
   (b) identify the cause (or likely cause) of the exceedance/incident;
   (c) describe what action has been taken to date; and
   (d) describe the proposed measures to address the exceedance/incident.

ANNUAL REVIEW

4. By the end of March each year, the Proponent shall prepare and submit a review of the environmental performance of the project to the satisfaction of the Director-General. This review must:
   (a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;
   (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against the
      - the relevant statutory requirements, limits or performance measures/criteria;
      - the monitoring results of previous years; and
      - the relevant predictions in the EA;
   (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
   (d) identify any trends in the monitoring data over the life of the project;
   (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
   (f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 3 years of the date of the commencement of construction, and every 5 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project, and its effects on the surrounding environment;
   (d) assess whether the project is complying with the relevant standards, performance measures and statutory requirements;

(e) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
(f) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.

6. Within 1 month of completion of each Independent Environmental Audit, the Proponent shall submit a copy of the audit report to the Director-General and relevant agencies, with a response to any of the recommendations in the audit report.

REVISION OF STRATEGIES, PLANS AND PROGRAMS

7. Within 3 months of:
- the submission of an incident report under condition 3 above;
- the submission of an Annual Review under condition 4 above;
- the submission of an audit report under condition 5 above; or
- any modification to the conditions of this approval, (unless the conditions require otherwise),

the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.

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

COMMUNITY CONSULTATIVE COMMITTEE

8. Prior to the commencement of construction, the Proponent shall establish a Community Consultative Committee (CCC) for the project. The CCC shall:
(a) be comprised of:
- 2 representatives from the Proponent, including the person responsible for environmental management at the quarry;
- 1 representative from Council (if available); and
- at least 3 representatives from the local community,

whose appointment has been approved by the Director-General;
(b) be chaired by an independent chairperson, whose appointment has been approved by the Director-General;
(c) meet at least twice a year;
(d) review the Proponent's performance with respect to environmental management and community relations;
(e) undertake regular inspections of the quarry operations;
(f) review community concerns or complaints about the quarry operations, and the Proponent's complaints handling procedures; and
(g) provide advice to:
- the Proponent on improved environmental management and community relations, including the provision of information to the community and the identification of community initiatives to which the Proponent could contribute;
- the Department regarding the conditions of this approval; and
- the general community on the performance of the quarry with respect to environmental management and community relations.

Notes
- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval.*
- *The membership of the CCC should be reviewed on a regular basis (every 3 years).*
- *If possible, an alternate member should be appointed for each of the representatives from the local community.*

9. At its own expense, the Proponent shall,:
(a) ensure that 2 of its representatives attend CCC meetings;
(b) provide the CCC with regular information on the environmental performance and management of the project;
(c) provide meeting facilities for the CCC;
(d) arrange site inspections for the CCC, if necessary;
(e) take minutes of the CCC meetings;
(f) make these minutes available to the public;
(g) respond to any advice or recommendations the CCC may have in relation to the environmental management or community relations; and
(h) forward a copy of the minutes of each CCC meeting, including a response to any recommendations from the CCC, to the Director-General within a month of the CCC meeting.

ACCESS TO INFORMATION

10. By 31 January 2012, the Proponent shall:
    (a) make copies of the following publicly available on its website:
        - the documents referred to in condition 2 of schedule 2;
        - all current statutory approvals for the project;
        - all approved strategies, plans and programs required under the conditions of this approval;
        - the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;
        - a complaints register, updated on a monthly basis;
        - minutes of CCC meetings;
        - the annual reviews of the project;
        - any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit;
        - any other matter required by the Director-General; and
        - keep this information up-to-date,

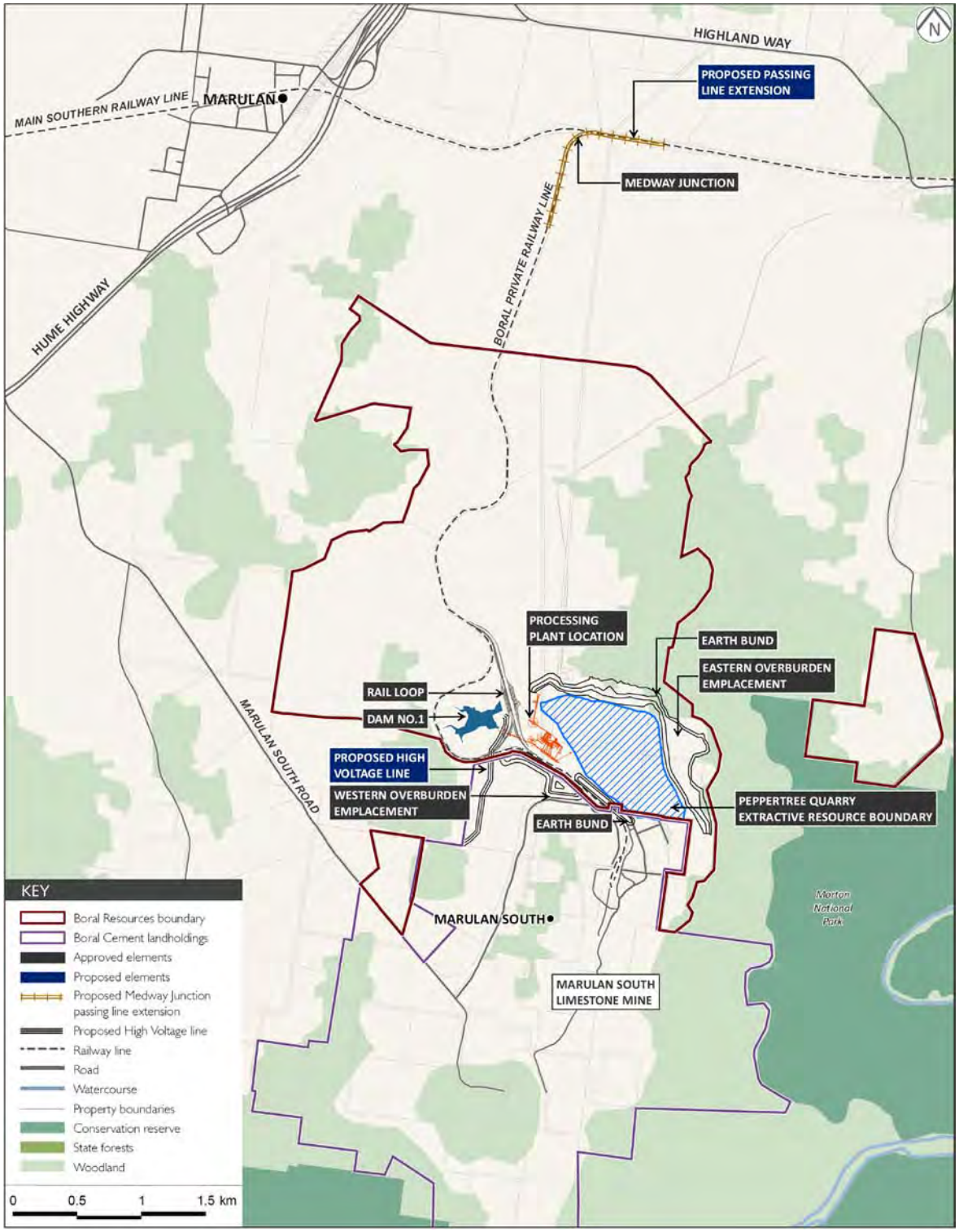
    to the satisfaction of the Director-General.

13. *(deleted)*

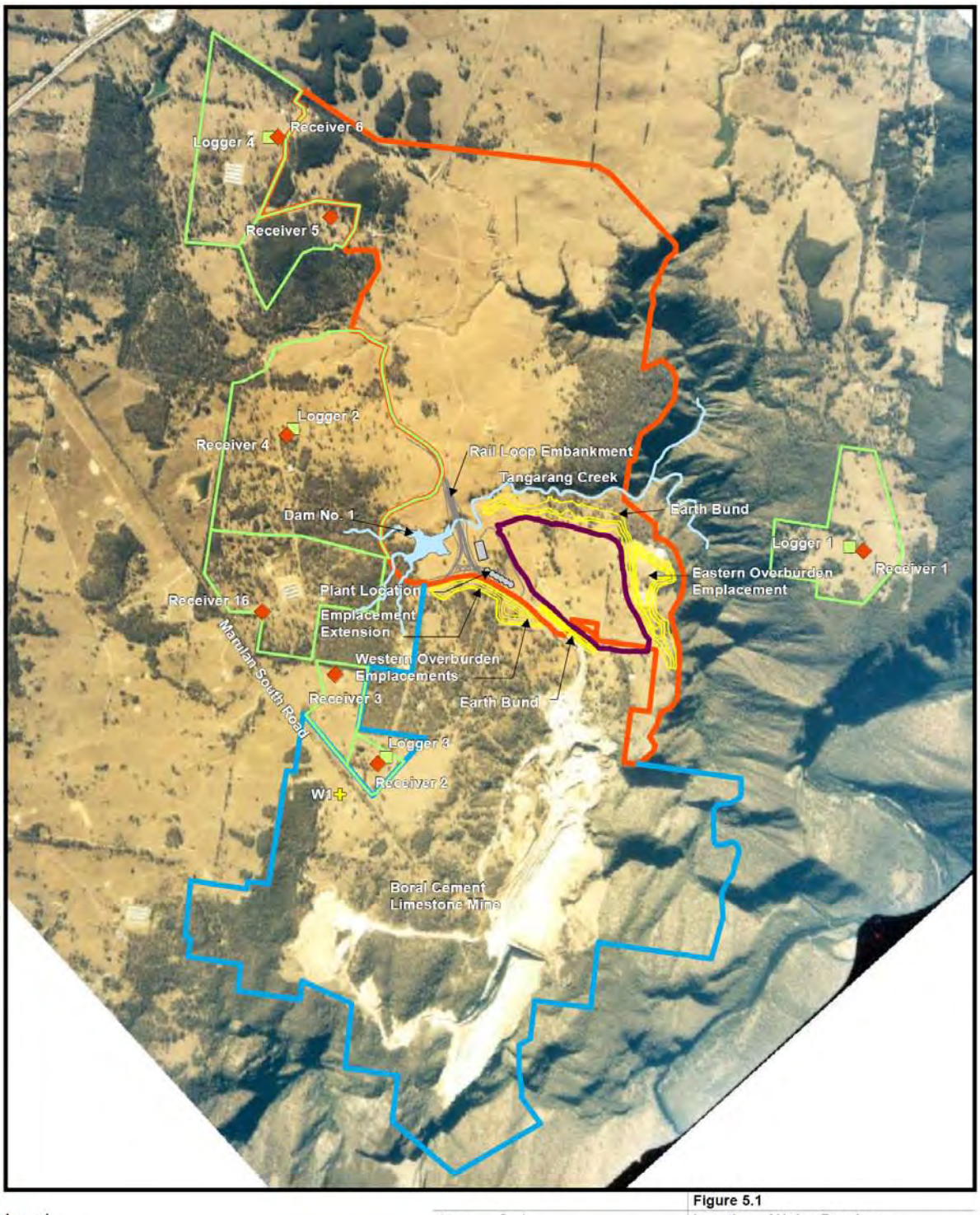
APPENDIX 1
SCHEDULE OF LAND

Lot	*DP*
23	867667
5	203290
95	750029
24	867667
109	750029
1	371167
1-6	261615
1	557562
143	750029
12	570616
2	557562
21	657523
100	1064794
4	106569
1-9	216767
11	570616
5	111641
22	867667
1	1124189
2	106569

APPENDIX 2
PROJECT SITE



APPENDIX 2A
NOISE RECEIVER LOCATION PLAN



Legend

- Receiver Locations
- Noise Logger Locations
- Weather Station
- Quarry Location
- Boral Cement Property Boundary
- Boral Peppertree Property Boundary
- Proposed Dam Location
- Proposed Plant Location
- Cadastre
- Tangarang Creek

Client:	Boral		
Project:	Peppertree Quarry		
Drawing	0118026s_Sect75W_G016_R0.mxd		
Date:	27/10/2011	Drawing Size:	A4
Drawn By:	SQW	Reviewed By:	RS
Projection:	GDA 1994 MGA Zone 56		
Scale:	Refer to scale bar		

N

0 250 500 750m

Maps and figures contained within this document may be based on third party data, may not be to scale and is intended for use as a guide only. ERM does not warrant the accuracy of any such maps or figures.

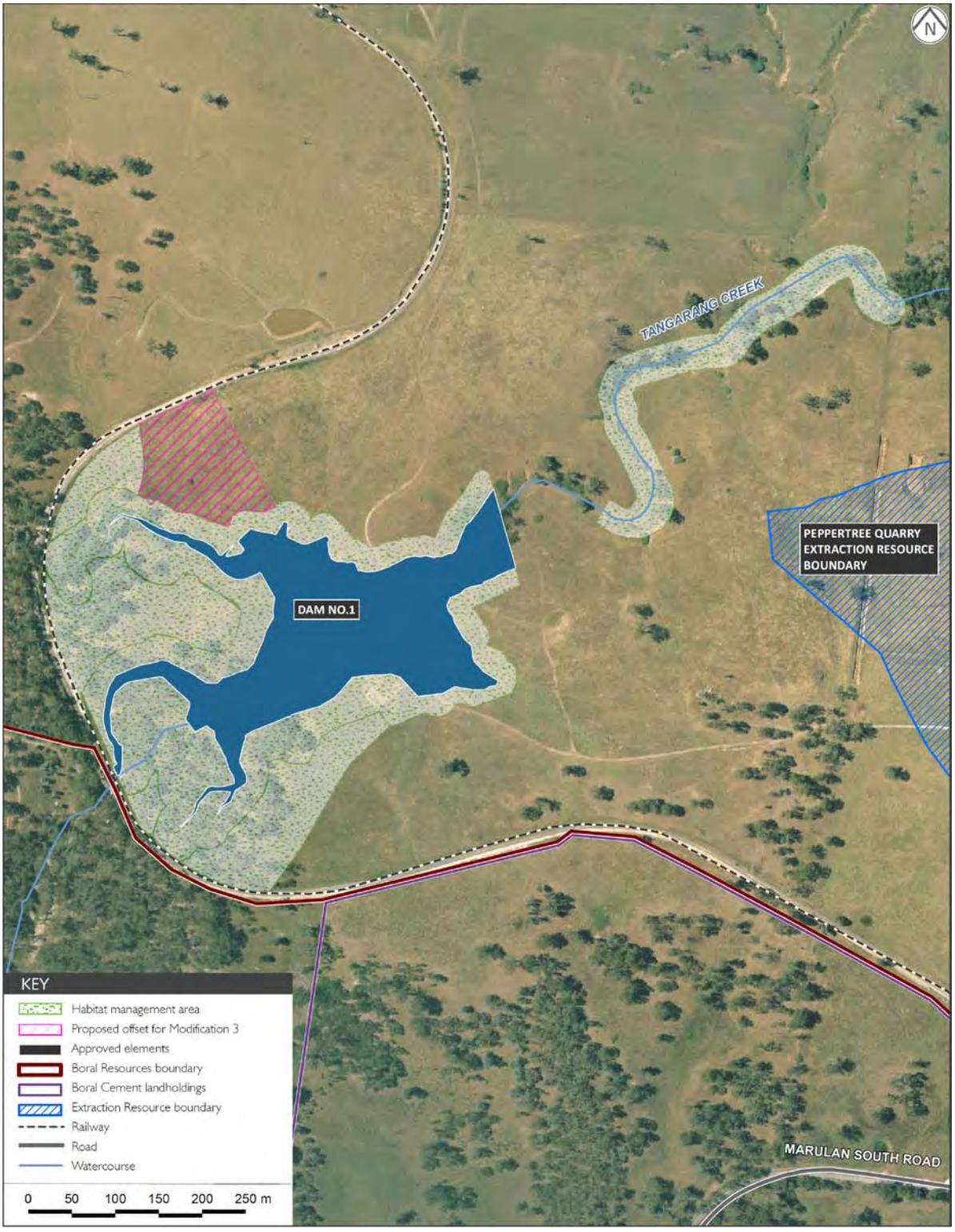
Figure 5.1
Location of Noise Receivers

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

APPENDIX 3
HABITAT MANAGEMENT AREA




CAMBIUM
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