Global Quarries Australia Pty Ltd

Marulan Quarry DA

Preliminary Environmental Assessment

April 2019

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1. Introduction

1.1 Background

Global Quarries Australia Pty Ltd seeks to develop a quarrying operation on Lots 3 and 4 of DP 247199, and Lot 7001 of DP 1025585 in Marulan in the Southern Tablelands of NSW (the project). The project involves extraction of up to 500,000 tonnes per year of hard rock for the supply of high grade cement feedstock to the Sydney and regional markets over an approximate 18 year period. The target resource is a tuffaceous aggregate and is estimated to exceed 6 million tonnes of saleable product at the site.

The project will also involve the progressive rehabilitation of the extraction area through emplacement of VENM, ENM and other clean fill materials. The emplacement material will be sourced through back-loading of haulage vehicles with clean fill from construction projects throughout the Sydney basin. This will allow the site to be progressively returned to a condition more closely representing the original landscape and will maximise resource recovery through diversion of clean fill away from landfills.

The project constitutes development for the purpose of an extractive industry that extracts up to 500,000 tonnes of material per year from a total resource area of more than 5 million tonnes. The project is therefore defined as State Significant Development (SSD) under Clause 7 of Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*. As such, an Environmental Impact Statement (EIS) will need to be prepared to accompany the DA for the Project, for determination by the NSW Minister for Planning or delegate.

1.2 Project overview

1.2.1 Objectives

The key objectives for the Project are to:

- Supply tuffaceous aggregate to cement producers and construction companies in the greater Sydney region
- Develop the tuff resource to economically maximise recovery and yield from the identified resource
- Contribute to the local, regional and State economies through capital expenditure, employment and supply of raw materials to the construction industry
- Conduct operations in an environmentally responsible manner by understanding and effectively managing environmental impacts
- Divert of VENM, ENM and other clean waste materials away from landfill for beneficial reuse in site rehabilitation activities
- Undertake the development to be sympathetic to the surrounding land-use and environmental setting
- Develop an ongoing relationship with the community via effective and regular consultation and provision of employment opportunities to local residents.

1.2.2 The Project

The project involves the following:

- Establishment of primary processing facilities and haul route from an existing forestry haul road running within the site
- Extraction of up to 500,000 tonnes per year of the tuff resource through drill, blast and primary crushing
- Vehicle haulage to access Sydney and regional markets via Winfarthing Road and the Hume Highway
- Site rehabilitation through emplacement of VENM, ENM and other clean fill delivered to site by back loading haulage vehicles.

1.2.3 The Proponent

The proponent for the development is Global Quarries Australia Pty Ltd.

1.2.4 Purpose of this report

Submission of this Preliminary Environmental Assessment (PEA) represents the initiation of approval-related environmental assessment and engagement to support the development application process. This report has been prepared as part of the request to the NSW Department of Planning and Environment (DP&E) to receive the Secretary's Environmental Assessment Requirements (SEARS) for the preparation of an EIS under Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This report provides an outline of the statutory approvals process, a description of the project, a preliminary environmental risk screening to identify and prioritise potential environmental impacts and an outline of the stakeholder engagement activities proposed for the project.

2. Background to the Project

2.1 Site context

2.1.1 Location

The proposed quarry site is located within the Goulburn Mulwaree local government area, around 10 km kilometres south west of Marulan in NSW as shown on Figure 1.

Situated on the eastern side of Hume Highway, it is accessed via Winfarthing Road, a sealed local road that intersects the Hume Highway with dedicated left and right turn lanes. An established forestry haul trail connects Winfarthing Road to the proposed site.

2.1.2 Environmental setting

The project site has a total area of 82.2 ha and is divided into three lots. The eastern lot (Lot 4) is 14.7 ha and consists almost entirely of cleared land. There is evidence of a small disused quarry in the northern portion of the lot, possibly created during the construction of the Hume Highway. Lot 3, on the western side, is 67.5 ha and is primarily light bushland. There is a small dam on the western side of the lot, and a trigonometrical station at the highest elevation across a wider area. Lot 7001 is located in the middle of Lot 3 and is primarily light bushland.

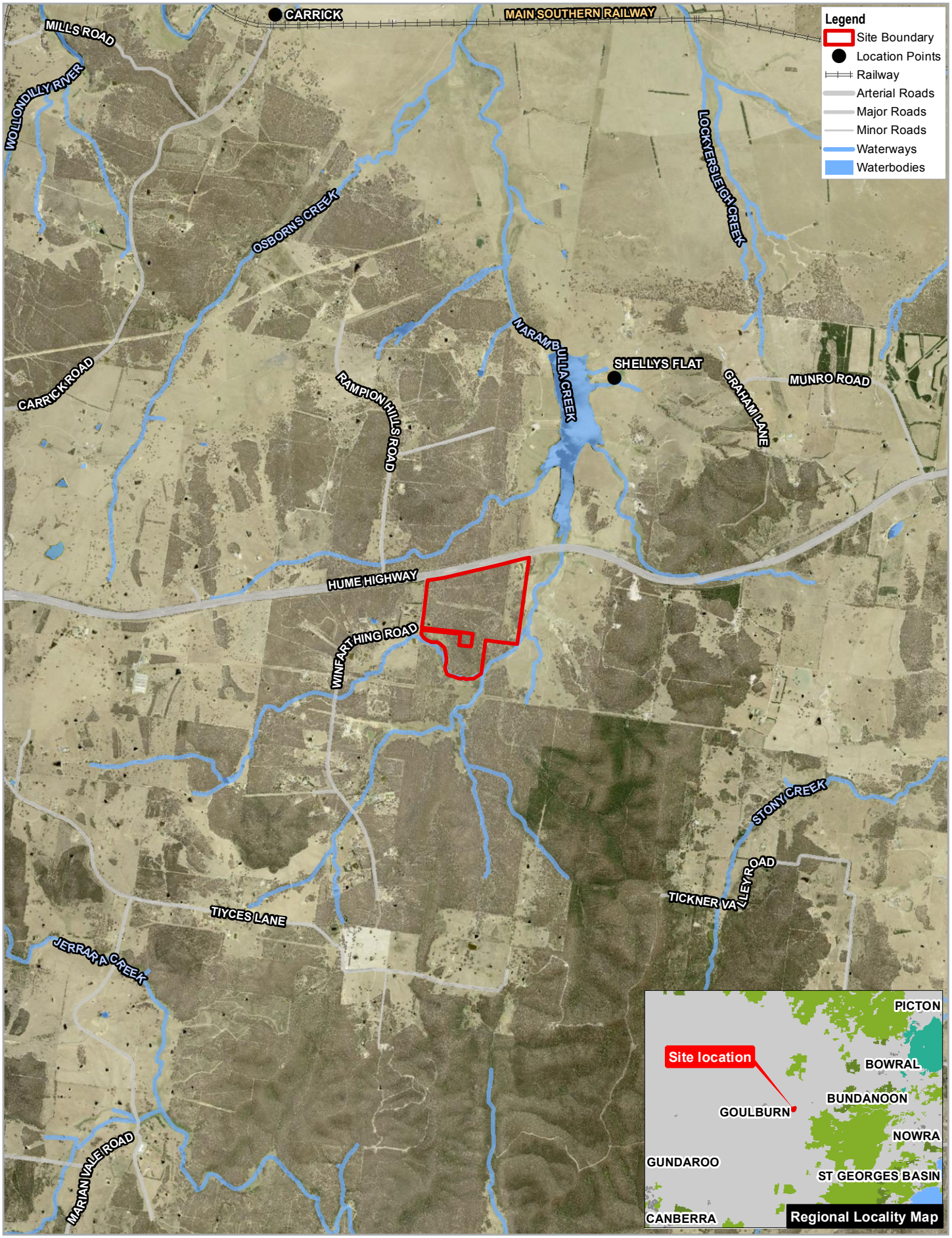
The topography of the project site is gently to moderately inclined, with a mostly north-easterly aspect. The highest point is 698 m above sea level, upon which a trigonometric station has been established. The peak is located on the southern side of in Lot 3 with a gradual slope running north (dropping approximately 40 m to the northern edge of the Lot 600m away). On the southern side of the peak it is steeper dropping approximately 80m over a 200m distance.

The project site is located within the Wollondilly River catchment within the upper reaches of the Hawkesbury Nepean basin and forms part of Sydney's drinking water catchment. Water drains from the site to the south and east into Naramballa Creek, which runs along the southern and eastern boundary of the property. An existing in-line water storage is located on Naramballa Creek to the north of the Hume Highway (refered to as Naramballa Lake), which subsequently flows to the Wollondilly River and Lake Burragorang.

The site is immediately surrounded by a mixture of cleared land and light bushland. It is located on bush fire prone land (vegetation category 1).

2.1.3 Crown land

Lot 7001 of DP 1025585 is crown land. The proponent is currently enquiring to purchase this land in accordance with the *Crown Land Management Act 2016*.



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Metres

Horizontal Datum: GDA 1994
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GHD

MARULAN QUARRY

SITE LOCALITY MAP

Project No. 21-26915
Revision No. -
Date 13/12/2017

FIGURE 1

2.1.4 Biodiversity

Vegetation

The extent of the proposed quarry contains a monotypic patch of Stringybark (identified as *Eucalyptus sparsifolia* during preliminary surveys) that comprises a variant of Tableland Hills Grassy Woodland and Tableland Low Woodland. It is likely that the vegetation was clear-felled then managed by selective logging and pollarding over the last 60 years. There are no mature or over-mature trees, the midstorey layer is mostly absent and groundcover is very sparse. Surrounding vegetation comprises Tableland Hills Grassy Woodland and Tableland Low Woodland with a more characteristic community structure and floristics.

It is apparent that the vegetation has been affected by a long drought period, with the result that grasses and small forbs are absent to scarce and some shrub species, especially *Daviesia* spp. have been heavily grazed.

Tableland Hills Grassy Woodland and Tableland Low Woodland are not listed as Threatened Ecological Communities under the *Biodiversity Conservation Act 2016* or the EPBC Act.

Of the threatened flora species which have been previously recorded or predicted to occur within a 10km radius of the site, the following species have the potential to occur on the project site:

- Hoary Sunray (Leucochrysum albicans var. tricolor)
- Cotoneaster Pomaderris (Pomaderris cotoneaster)
- Pultenaea pedunculata (Matted Bush-pea).

No individuals or populations of these or any other threatened plant species were recorded during a preliminary site survey in March 2018. However, the winter and summer drought, combined with heavy selective grazing may have hampered detection of threatened plants if present.

Fauna and fauna habitats

The Tableland Hills Grassy Woodland and Tableland Low Woodland communities in and surrounding the project site provide foraging, shelter and potential breeding habitat for a range of fauna typical of grassy woodland and forest habitats, including in particular woodland birds and mammals. The monotypic stand of Stringybarks that occurs within the proposed quarry footprint is of lower habitat value for most fauna than the surrounding woodland vegetation, lacking mature hollow-bearing trees and having limited floristic and structural diversity as a result of previous clearing and selective logging.

The project site and surrounding woodland areas provide potential habitat for a variety of threatened fauna previously recorded or predicted to occur in the locality, including woodland birds such as the Little Eagle (*Hieraaetus morphnoides*), Speckled Warbler (*Chthonicola sagittata*) and Diamond Firetail *Stagonopleura guttata*), and mammals, including the Koala (*Phascolarctos cinereus*), Squirrel Glider (*Petaurus norfolkensis*) and a variety of microchiropteran bats.

State and Regional Biodiversity Corridors

The project area is located within a terrestrial Biodiversity zone. Lot 3 is also located in a South East and Tablelands (SEAT) Biodiversity corridor.

Regional biodiversity corridors are native vegetation links within a region, between regions or between significant biodiversity features. They expand and link different habitats and are critical to long-term ecological connections, particularly in the context of long-term climate change.

2.1.5 Heritage

The Wandi Robert Plumb's Inn is located east of the site and is listed on the State Heritage Register due to its association with the bushranger Ben Hall. Currently located on a private rural property on an adjoining property, the former coaching Inn is in poor condition according to a 2009 report.

A search of the Aboriginal Heritage Information Management System (AHIMS) and NSW Atlas of Aboriginal Places maintained by the Office of Environment and Heritage was undertaken to determine the presence of any listed Indigenous heritage items in the vicinity of the site. No Aboriginal heritage items were identified at the site although sites were located in proximity to Naramballa Creek.

2.2 Surrounding land use

The area immediately surrounding the project site is characterised by a mixture of land uses, in the most part extensive and intensive agriculture. There are a small number of rural residential properties located on Winfarthing Road. Winfarthing Road is also used by forestry trucks for haulage.

The wider area around the proposed site is engaged in primary industry. This includes a number of quarries located on recognised mineral and resource land, forestry and agricultural farmlands.

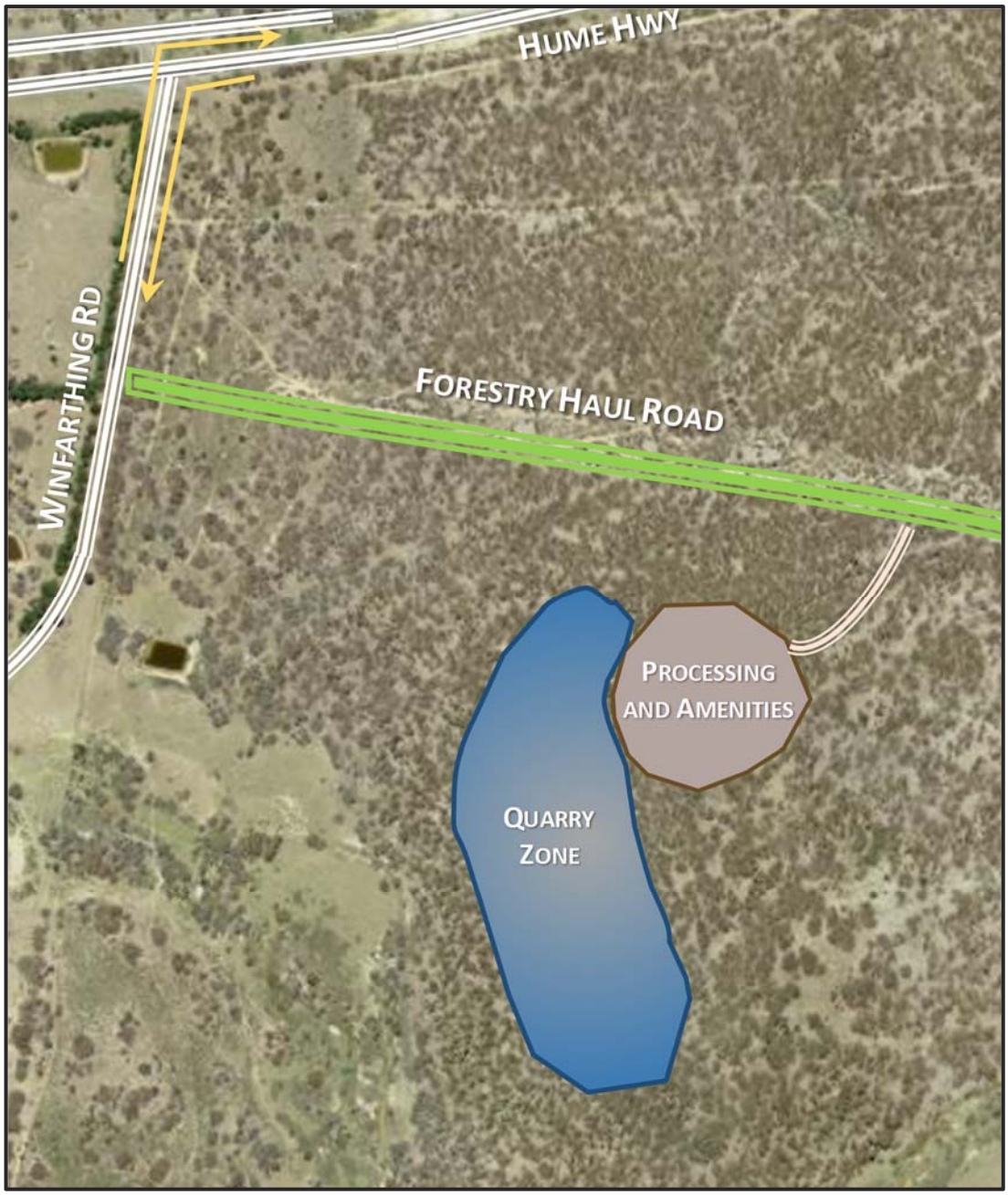
Protected areas located in proximity to the project site include Bungonia National Park (located 10.5 km south east of the site), Cookbundoon Nature Reserve (located 9. 5 km north west) and Pomaderries Nature Reserve (located 11.5 km south west).

3. The Project

3.1 Overview

The project aims to develop the tuff resource found at the site in a manner that maximises recovery and yield, while being both environmentally and economically sustainable. The construction phase of the project involves establishment of site amenities and construction of a haul road through a partially vegetated area as shown on Figure 2. A production cycle of drilling, blasting, processing and haulage will produce up to 500,000 tonnes of tuffaceous aggregate annually, for an estimated 18 year life of the project.

Figure 2 Site Layout



3.2 Resource

3.2.1 Target

"***Tuff***" is a rock type that forms when ash from a volcanic eruption flows down the side of the volcano and settles. When crushed, the chemical and physical properties of this material are advantageous when included as a component of cement.

The target for quarrying activities at this site is a specific type of tuff deposit known as an '***ignimbrite***'. This rock type is essentially formed when a tuff flow is sufficiently hot at the time of deposition to weld together. Once extracted and crushed, it has chemical and physical properties that are highly valued in making cement.

The target resource within project site occurs as a topographic high within the wider region. This is due to the resistance to weathering and the high silica content of the ignimbrite resulting in an erosion resistant surface, essentially defining the physical expression extent of the resource.

A preliminary estimate for the target resource has been undertaken, based upon an initial drilling program. A resource of 6 million tonnes of saleable quality ignimbrite, with crushing on-site the only post-extractive processing required. A Joint Ore Reserves Committee standard resource statement will be completed in the near future, potentially increasing the estimated resource and estimated life of the project.

3.2.2 Product and markets

The final processed product will be a 20mm tuffaceous aggregate, primarily for use in cement making. This material will be transported to cement making plants and associated consumers across greater Sydney and regional markets for use in cement intensive developments.

3.3 Construction

The main construction activities undertaken for the project will be establishment of processing and amenities area (offices, toilets, bunded area for storage) and stockpile areas at the base of a hilltop 300 metres south of the Hume Highway.

An upgrade of an existing access track will also be undertaken so it can be used as a haul route between the site and an existing forestry road running through the site to Winfarthing Road. Haul road construction will involve vegetation clearing, minor grading, placement of gravel, and erection of signs and fencing.

3.4 Operations

3.4.1 Drilling and blasting

The resource will be progressively drilled and blasted, with material extracted between each blasting event through use of in pit plant including excavators, bulldozers and haul trucks. The size, shape and orientation of the resource suggest blasting events will be spaced over a 50m x 200 metres area with 10 metres depth. Traditional drill and blast methods would be used, requiring a drill rig stationed on top of each production bench. This rig will drill a series of holes that are later charged with explosives, detonators and delays.

3.4.2 Extraction and processing

The blasted rock will be excavated and shovelled on to trucks or bulldozed to a designated stockpile area near the processing facilities at the base of the hill. The tuff will then be further crushed and screened into the various product specifications required.

3.4.3 Haulage

Material will be loaded for vehicle haulage from the site using truck and trailer combinations of up to 42.5 tonne capacity. An average of 45 trucks per day will transfer product from the site via the existing forestry haul road, Winfarthing Road and the Hume Highway to access the Sydney and the regional cement market.

3.5 Rehabilitation

The progressive rehabilitation of the site is a key aim of the project. The intention is to rehabilitate the site through the importation of virgin excavated natural material (VENM), excavated natural material (ENM) and other clean fill material sourced from construction projects across Sydney and the local regional area. This will allow the void to be progressively refilled and return the site to condition more representative of the original landscape.

The final landform would be revegetated with locally endemic species to provide effective control or erosion and integration with the surrounding landscape.

Transport of clean emplacement material to the site will be achieved by back-loading the haulage vehicles transporting product from the site.

4. Approval pathway

4.1 Introduction

This section sets out the key planning and environmental regulatory framework applicable to the project, including the identification of relevant environmental planning instruments and the approval pathway. Both Commonwealth and NSW legislation are presented and will be further considered in any environmental impact assessment process that follows.

4.2 Commonwealth legislation

4.2.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation that provides a legal framework to protect and manage environmental values considered to be of national environmental significance.

The EPBC Act requires approval from the Commonwealth Minister for the Environment and Resources for actions that may have a significant impact on listed matters of national environmental significance (MNES).

The project is considered an "action" which is broadly defined under the EPBC Act to include a project, development, undertaking, activity or series of activities. It is the responsibility of the applicant proposing to undertake an action to initially consider whether the proposal is likely to have a significant impact on any MNES. If the applicant considers there is potential for significant impacts upon any matters protected under the EPBC Act, then a referral is required to be submitted to the Minister for the Environment. Developments considered likely to result in significant impacts are defined as "controlled actions" and require assessment and approval under the EPBC Act.

Consideration of potential impacts upon listed threatened species and communities and any other MNES potentially impacted by the project will be undertaken as part of the EIS.

A referral will be submitted to the Minister for the Environment if any unexpected impacts are identified through the EIS assessment process, which potentially constitute a controlled action.

4.3 New South Wales legislation

4.3.1 Environmental Planning and Assessment Act 1979

The *EP&A Act* contains three parts that impose requirements for planning approval. These are generally as follows:

- Part 4 provides for the assessment and approval of 'development' that requires development consent from the local council, a regional planning panel or the NSW government for development which is classed as State Significant Development (SSD)
- Part 5 (Division 5.1) provides for the environmental assessment of 'activities' that do not require approval or development consent under Part 4
- Part 5 (Division 5.2) provides for control of State Significant Infrastructure (SSI) including Critical SSI.

The need or otherwise for consent for a new development application is set out in environmental planning instruments including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs).

Goulburn Mulwaree Local Environmental Plan 2009

The Goulburn Mulwaree Local Environmental Plan 2009 is the environmental planning instrument which guides land use and development across the Goulburn Mulwaree local government area.

The Project is located within the E3 zoning of the Goulburn Mulwaree Local Environment Plan. The objectives of the zone are:

- To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values
- To provide for a limited range of development that does not have an adverse effect on those values
- To facilitate the management of water catchment areas, environmentally sensitive land and areas of high conservation value.

The Project and associated activities are best defined as an “Extractive Industry” under the Goulburn Mulwaree Local Environmental Plan 2009. Extractive industries are not permitted with or without consent under the E3 zoning classification. It is noted that extensive agriculture is permitted without consent and the project is permitted with consent through application of the State Environmental Planning Policy (Mining, Petroleum and Extractive Industries) 2007 (Mining SEPP) as discussed below.

State Environmental Planning Policy (Mining Petroleum and Extractive Industries) 2007

The aims of the Mining SEPP are, in recognition of the importance to New South Wales of mining, petroleum production and extractive industries:

(a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State,

(b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and

(c) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources.

Under the SEPP, extractive industries may be carried out with consent on any land for which agriculture or industry is permitted with or without consent. Extensive agriculture is permitted without consent in the E3 Environmental Management Zone under the Goulburn Mulwaree LEP and the project is therefore permitted with consent.

Development applications are required to take into consideration a number of factors including;

- Compatibility with other surrounding land-uses (including other extractive industries)
- Natural resource and environmental management
- Resource recovery
- Transport
- Rehabilitation.

State Environmental Planning Policy (State and Regional Development) 2011

The aim of the State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP) is to identify development that is State Significant development, state significant infrastructure and to confer functions on joint regional planning

panels to determine development applications. If the Project meets any of the criteria in the Clause applicable to developments of this type, it will be considered a State Significant Development (SSD). The Minister for Planning is the consent authority for SSD and the project will be assessed by preparation of an EIS for assessment through the DP&E.

The Project is a quarrying operation, which is considered an extractive industry under the SEPP. Any extractive industry development that meets one of the criteria is considered an SSD. Clause 7 (1) of Schedule 1 presents these criteria:

(1) Development for the purpose of extractive industry that:

(a) extracts more than 500,000 tonnes of extractive materials per year, or

(b) extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or

(c) extracts from an environmentally sensitive area of State significance.

As a development proposes to extract material from a total resource of more than 6 million tonnes, the project is considered a State Significant Development.

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across NSW and allows for a range of developments to be permitted with and without consent.

Division 23 of the Infrastructure SEPP includes definitions and consent requirements of Waste or Resource Management facilities.

In accordance with Clause 121 (3) of the Infrastructure SEPP:

Development for the purpose of the recycling of construction and demolition material, or the disposal of virgin excavated natural material (as defined by the Protection of the Environment Operations Act 1997) or clean fill, may be carried out by any person with consent on land on which development for the purpose of industries, extractive industries or mining may be carried out with consent under any environmental planning instrument.

Extractive industries are permissible within the E3 Environmental Management zoning in accordance with the Mining SEPP as described above. Importing of VENM, ENM and other clean waste material for the purpose of site rehabilitation is considered permissible with consent in accordance with the Infrastructure SEPP.

State Environmental Planning Policy (Sydney Drinking Water Catchment)

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the Sydney Drink Water Catchment SEPP) applies to land within Sydney's Drinking Water Catchment including the project site which drains to the Wollondilly River. The aims of the policy are:

(a) to provide for healthy water catchments that will deliver high quality water while permitting development that is compatible with that goal, and

(b) to provide that a consent authority must not grant consent to a proposed development unless it is satisfied that the proposed development will have a neutral or beneficial effect on water quality, and

(c) to support the maintenance or achievement of the water quality objectives for the Sydney drinking water catchment.

The policy requires any development within the catchment area to incorporate Water NSW's current recommended practices and standards or demonstrate how any alternative practices

and standards will achieve equivalent or improved outcomes. There is also a requirement to demonstrate a neutral or beneficial effect on water quality.

A neutral or beneficial effect on water quality is satisfied if the development:

(a) has no identifiable potential impact on water quality, or

(b) will contain any water quality impact on the development site and prevent it from reaching any watercourse, waterbody or drainage depression on the site, or

(c) will transfer any water quality impact outside the site where it is treated and disposed of to standards approved by the consent authority.

A water management system will be developed as part of the EIS to guide the construction and operation of the quarry and manage discharges to ensure a neutral or beneficial effect for the catchment is achieved.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State and Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33) requires the consent authority to consider particular matters in determining a development application for a project that is a potentially hazardous industry or potentially offensive industry.

An application guideline (Applying SEPP33) was prepared to support SEPP 33 by providing guidance regarding the identification and assessment of potentially hazardous industry.

The Applying SEPP33 guideline states that the first step in determining whether SEPP 33 applies to a project is to determine whether the proposed use falls within the definition of 'industry' adopted by the planning instrument which applies.

The project does not meet the definition of industry under the Goulburn Mulwaree LEP as it does not involve a building or place on which an industrial activity will be undertaken. Therefore, the provisions of SEPP 33 do not apply to the project.

4.3.2 Protection of the Environment Operations Act

The objectives of the *Protection of the Environment and Operations Act 1997* (PoEO Act) are to protect, restore and enhance the quality of the environment, in recognition of the need to maintain ecological sustainable development.

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

Clause 19 of Schedule 1 defines extractive industries that are considered scheduled activities and includes land based extraction activities that involves the extraction, processing or storage of more than 30,000 tonnes per year of extractive materials.

The project involves extraction of up to 500,000 tonnes per year of hard rock and therefore triggers the need for an EPL for an extractive industry under the PoEO Act.

The project also involves the progressive rehabilitation of the quarry pits through the emplacement of ENM, VENM and other clean fill. Application of waste to land is considered to be a scheduled activity in accordance with Clause 39 of Schedule 1 of the PoEO Act. However, under the Protection of the Environment Operations (Waste) Regulation 2014 (2014 Waste Regulation), has introduced a series of resource recovery orders and resource recovery exemptions which can in specific circumstances remove the need to obtain an EPL and payment of the waste levy. Each order includes conditions which generators and processes of

exempt waste must meet to supply the waste for land application and each exemption includes conditions for the consumers of exempt waste to apply to land.

The excavated natural material exemption 2014 applies to excavated natural material that is intended to be applied to land as engineering fill or in earthworks and exempts the requirement to obtain an EPL for a scheduled activity, to track waste, pay the waste levy and miscellaneous reporting requirements to the EPA. Application of the exemption is subject to the following conditions:

- At the time the excavated natural material is received at the premises, the material must meet all chemical and other material requirements (via stringent sampling and testing) for excavated natural material which are required before the supply of excavated natural material under 'the excavated natural material order 2014'
- The excavated natural material can only be applied to land as engineering fill or for use in earthworks
- The consumer must keep a written record of the following for a period of six years:
  - the quantity of any excavated natural material received
  - the name and address of the supplier of the excavated natural material received
- The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request
- The consumer must ensure that any application of excavated natural material to land must occur within a reasonable period of time after its receipt.

All fill material entering the site will meet the requirements of the excavated natural material order or a specific resource recovery order issued by the EPA for the site.

The PoEO Act also is the relevant legislation in regard to the discharge of waters. This Act makes a blanket statement that it is an offence to pollute waters. The EIS will include a water resources assessment to demonstrate that the extractive operations and the rehabilitation of the site with clean fill will not result in a detrimental impact to receiving waters.

4.3.3 Water Management Act 2000

The *Water Management Act 2000* (WM Act) is intended to ensure that water resources are conserved and properly managed for sustainable use benefitting both present and future generations. It is also intended to provide a formal means for the protection and enhancement of the environmental qualities of waterways and their catchments.

Part 2 of the WM Act applies to the requirement to obtain a licence for the "taking of water" from a water source. An access licence entitles its holder to specified shares in the available water within a specified water management area or from a specified water source. It enables the licence holder to take water from the environment in accordance with specified rates and conditions under the terms of the licence.

Part 3 of the WM Act specifies approval requirements for water use, water management works approvals and activity approvals. There are two kinds of activity approvals including controlled activity approvals and aquifer interference approvals.

Controlled activity approvals confer a right for the holder to carry out a specified controlled activity on waterfront land which is defined as land within 40 metres of a river, lake, estuary or shoreline. A river includes 'any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved'.

An aquifer interference approval may be required for any works that involve:

a. The penetration of an aquifer

b. the interference with water in an aquifer

c. the obstruction of the flow of water in an aquifer

d. the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations

e. The disposal of water from an aquifer as referred to in paragraph (d).

The project is not anticipated to required excavation within 40 metres of Naramballa Creek and preliminary drilling of the resource did not intersect significant groundwater resources. It is understood that aquifer interference approvals are not switched on under the WM Act and an approval will therefore not be required.

Further investigation into the need for a controlled activity approval and any associated licencing requirements for water take will be investigated as part of the EIS.

4.3.4 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017 and has repealed the T*hreatened Species Conservation Act 1995.* The BC Act aims to conserve biodiversity at a bioregional and state scale and lists a number of threatened species, populations and ecological communities to be considered in deciding whether there is likely to be a significant impact on threatened biota, or their habitats. The project would be unlikely to have a significant impact on any threatened species, populations or ecological communities listed under the Biodiversity Conservation Act, however a biodiversity development assessment report will be undertaken as part of the EIS in accordance with section 7.9 of the BC Act.

4.3.5 Biosecurity Act 2015

The *Biosecurity Act 2015* (Biosecurity Act) repealed the *Noxious Weeds Act 1993* on 1 July 2017. The Biosecurity Act specifies the duties of public and private landholders as to the control of priority weeds. Under this Act, priority weeds have been identified for Local Government Areas and assigned duties for control. Part 3 provides that any person who deals with biosecurity matter (ie weeds) and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter has a duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised.

As such, if present, priority weeds located on the project site should be assessed and controlled.

4.3.6 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is concerned with all aspects of heritage conservation ranging from basic protection against indiscriminate damage and demolition of buildings and sites, through to restoration and enhancement.

Heritage places and items of particular importance to the people of NSW are listed on the State Heritage Register. Approval under section 60 of the Heritage Act is required for any direct impacts on a state listed heritage item. Approval from the NSW Heritage Council under section 139 of the Heritage Act is required prior to the activities likely to disturb a relic while section 140 of the Heritage Act provides for the application for a permit.

The Wandi Robert Plumb's Inn is located east of the site and is listed on the State Heritage Register due to its association with the bushranger Ben Hall. Currently located on a private rural property, the former Coaching Inn is in poor condition according to a 2009 report. Further

consideration of the potential impact of the development on heritage values of the area will be undertaken as part of the EIS.

4.3.7 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the NPW Act, an Aboriginal object is defined as: any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises New South Wales, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the NPW Act provides a series of defences against the offences listed in Section 86 which includes if the harm was authorised by and conducted in accordance with the requirements of an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act.

The potential for impacts upon Aboriginal cultural heritage will be considered in the EIS. No Aboriginal heritage items have been previously recorded in the immediate vicinity of the site.

4.4 Approval Pathway

The Minister for Planning (or his or her delegate, such as the NSW Independent Planning Commission or DP&E) determines development applications for State significant development under Part 4 of the EP&A Act.

Under Division 4.7 of the EP&A Act, development will be 'State significant development' if it is permitted with consent and declared to be such by the State and Regional Development) 2011 (SRD SEPP).

The site is located within an E3 Environmental Management Zone under the Goulburn Mulwaree LEP. Extractive industries are permitted with consent in the E3 Environmental Management Zone in accordance with the Mining SEPP and emplacement of clean fill within a quarry void is permitted with consent is accordance with the Infrastructure SEPP.

The Project is State significant development as defined under Clause 7 (1) of Schedule 1 of the State and Regional Development SEPP because it is development for the purposed of a extractive industry that extracts 500,000 tonnes per annum and from a total resource of greater than 5 million tonnes.

The project is therefore State significant development and an EIS will need to be prepared to accompany the DA for the Project, for determination by the NSW Minister for Planning or delegate.

5. Key Environmental Issues

5.1 Identification

The key project-related issues warranting detailed assessment in the EIS will be identified through:

- The existing environmental context and surrounding locality
- The legislative framework applicable to the project
- The preliminary environmental risk screening undertaken as a part of this PEA
- The outcomes of consultation to be undertaken with government agencies and other relevant stakeholders.

5.2 Environmental risk analysis

A preliminary environmental risk screening was undertaken to identify potential environmental impacts that may arise as a result of the proposed project.

The preliminary environmental risk screening was undertaken in the form of a preliminary, desktop-level risk assessment, to broadly assess the potential environmental risks that may arise as a result of the construction and operation of the project to identify key areas for the assessment.

The environmental risk analysis for the project involved:

- Identifying environmental aspects
- Identifying the source of potential risks associated with each of these aspects
- Identifying the potential impact associated with each risk
- Identifying priority issues for the EIS.

Table 5-1 provides the environmental risk analysis for the Project, it includes:

- A summary of the potential key impacts/risks
- Consideration of the priority for the assessment
- A discussion regarding the findings of the preliminary risk screening.

5.3 Priority assessments for the EIS

5.3.1 Overview

Based upon the results of the preliminary environmental analysis, the following broad qualitative risk ratings were assigned for each environmental attribute.

- High – Biodiversity, soils and landform, water resources
- Moderate – Heritage, air quality, noise, traffic and visual amenity
- Low – Chemical use and storage, social-economic, waste

The detailed scope of these assessments will be considered following the receipt of the SEARs for the project.

An EIS with supporting technical assessments will be prepared, based upon contemporary government guidelines and in accordance with the SEARs issued for the Project.

Table 5-1 Preliminary environmental risk screening results

Environmental Aspect	Source Of Risk	Potential Impact	Priority Of Assessment	Discussion
Soils and landform	Erosion of soils during construction and operation	Sedimentation of drainage lines, erosion of the area or neighbouring properties.	Medium	There is potential to increase erosion and sediment transport to receiving waters in the area due to quarrying activities. Management of the site and soil stockpiles will be important to prevent increased erosion or sedimentation. The EIS would describe the proposed soil and water management measures required to minimise the potential impacts from the project.
	Changing the typology of the land through both the operation of the quarry and the surrounding infrastructure	Change natural runoff patterns and affect drainage.	High	A water management system will be developed as part of the ongoing design of the quarry and final landform in accordance with managing Urban Stormwater: Soils and Construction ('the Blue Book").Volume 2E Mines and Quarries. This will include clean and dirty water management systems and a detailed water balance for progressive stages of the development. VENM, ENM and other clean waste materials will be beneficially reused in site rehabilitation activities progressively refill the quarry voids and return the site to a landform more closely resembling the current landscape.
Water resources	Quarry operational activities	Contamination of local source of water including Narambulla Creek and Sydney's drinking water catchment area	High	Appropriate management of the flow and quality of all discharges will be implemented to ensure NoRBE is achieved for the project. The EIS will also document measures to minimise potential impacts from accidental spills and leaks. Water resources investigations will be undertaken as part of the EIS.
		Impacts to groundwater	High	Minimal groundwater was encountered during preliminary drilling at the site and the pit is not anticipated to intercept any significant groundwater resources. Further assessment will be undertaken as part of the EIS to determine the maximum groundwater inflow to the pit throughout the progression of the quarry plan and the contribution to the overall water balance for the project.

Environmental Aspect	Source Of Risk	Potential Impact	Priority Of Assessment	Discussion
Biodiversity	Clearing of native vegetation and landscape disturbance for the construction of the quarry	Vehicle strike and degradation of habitat values in adjoining areas	High	The project will result in the removal of native vegetation and landscape features that provide potential habitat for a wide range of common woodland and forest species as well as threatened flora and fauna species listed under the BC and EPBC Act. Further biodiversity assessments, including targeted flora and fauna surveys will be undertaken as part of the EIS to identify biodiversity values and appropriate measures to avoid and minimise adverse direct and indirect impacts of the project. A Biodiversity Development Assessment Report (BDAR) will be prepared under the NSW BC Act in accordance with the NSW Biodiversity Offsets Scheme and Biodiversity Assessment Methodology (BAM). The assessment will identify measures to avoid, mitigate and offset impacts on biodiversity values in accordance with the BAM.
	Vehicle movements, light, noise and vibration associated with the operation of the quarry	Removal of native vegetation and loss and disturbance of habitats	High	There is the potential for ongoing adverse impacts on fauna and flora, including fauna injury or mortality through vehicle strike and habitat degradation as a result of light, noise, vibration and edge effects associated with the operation of the quarry. Further biodiversity assessments, including targeted flora and fauna surveys will be undertaken as part of the EIS to identify biodiversity values and appropriate measures to avoid and minimise adverse direct and indirect impacts of the project during the construction and operational stages. A Biodiversity Development Assessment Report (BDAR) will be prepared under the NSW BC Act in accordance with the NSW Biodiversity Offsets Scheme and Biodiversity Assessment Methodology (BAM). The assessment will identify measures to avoid, mitigate and offset impacts on biodiversity values in accordance with the BAM.
Noise and vibration	Operation of vehicles in the quarry.	Noise emissions exceeding noise limits and affecting sensitive receptors.	Medium	Heavy machinery and blasting will be used in the extraction of material from the quarry site and for the movement and shaping of material as part of the rehabilitation activities.

Environmental Aspect	Source Of Risk	Potential Impact	Priority Of Assessment	Discussion
				The site is not located in close proximity to any sensitive residential receivers or recreational areas. Further modelling of noise impacts in accordance with the EPA's Noise Policy for Industry will be undertaken as part of the EIS.
	Increased movement of heavy vehicles on local road	Noise emissions exceeding noise limits and affecting sensitive receptors.	Medium	Haulage from the site will occur via an existing forestry haul road and Winfarthing Road to the Hume Highway. There are no sensitive receivers in close proximity to the initial haulage route and the haulage vehicles will result in minimal changes to overall vehicle numbers on the Hume Highway and the regional road network. Further assessment in accordance with the EPA's Road Noise Policy will be undertaken as part of the EIS.
	Operation noise including blasting	Noise emissions exceeding noise limits and affecting sensitive receptors.	Low	Standard operation hours will be adopted on site to limit the impact of noise of construction and operation on the local area. A noise and vibration assessment will be undertaken as part of the EIS
	Vibration impacts during operation	Vibration created during operation negatively effecting the nearby habitats and residents	Low	A blasting strategy will be developed as part of the EIS including minimising blast size and frequency to ensure minimal impacts upon surrounding receivers
Waste	Waste created during operation	Inappropriate handling, storage, recovery and disposal of waste generated by the project	Low	Minimal waste is anticipated to be generated during the development of the quarry Diversion of VENM, ENM and other clean waste materials away from landfill for beneficial reuse in site rehabilitation activities will assist in meeting the NSW Government's strategic policy framework for waste management
Chemical usage and storage	Chemicals used during the proposal (e.g. fuel).	Chemical spill or leak during transport or usage, impacting on soil, groundwater or stormwater.	Low	The quarrying and processing activities proposed involve minimal chemical and fuel use or storage. Standard incident management procedures would be required to address potential spills or leaks from vehicles or equipment, and appropriate facilities for storage will be constructed in the site amenities area depicted on the project layout.

Environmental Aspect	Source Of Risk	Potential Impact	Priority Of Assessment	Discussion
Visual	Alteration of the landform through extraction of resource	Impacts to the visual amenity of the surrounding area.	Medium	Visibility of the project site will be limited to vehicles travelling on the Hume Highway and on a small number of local residents. Visual impacts will be partially offset by the rehabilitation of the landform with clean fill material. Assessment visual impacts associated with the proposed extraction and rehabilitation activities will be undertaken in the EIS.
Air quality	Air emissions (dust and exhaust) during construction, extraction, haulage and emplacement activities.	Dust and exhaust emissions causing nuisance to sensitive receptors.	Medium	The project has potential to generate dust during extraction and rehabilitation phases – blasting, excavations and processing etc. The EIS will include an assessment of air quality with a focus on dust impacts. It will include mitigation measures to control dust and minimise the potential for off-site amenity impacts.
Traffic and access	Disruption to local road network during operation	Potential disruption to local road users	Medium	Haul truck movements are anticipated to result in increased traffic on the local road network, particularly on Winfarthing Road and its intersection with the Hume Highway. It is unlikely there will be a change to the safety or operational capacity for the local road network. A traffic impact assessment will be undertaken as part of the EIS.
	Traffic safety issues created through the increase in haulage vehicles	Potential risk of haulage vehicles traveling along Winfarthing Road and turning off and on to the Hume Highway	Medium	There is currently dedicated left and right turning lanes at the T intersection between the Hume Highway and Winfarthing road. The EIS will include a traffic impact assessment which considers the potential impact of the project on the local and regional road network.
Heritage	Impacts on items of Aboriginal and non-Aboriginal heritage significance	Encounter and disturb items of cultural heritage during construction and operation.	Medium	There are currently no identified items of Aboriginal and non-Aboriginal heritage significance on site. In the event that items of potential heritage significance are encountered, mitigation procedures would be implemented. Outside of the site there are a number of Aboriginal heritage sites located along Narambulla Creek and Winfarthing Road. The EIS will include a heritage assessment that will address the possible impacts and mitigation measures that need to be taken to accurately protect the heritage in the area.

Environmental Aspect	Source Of Risk	Potential Impact	Priority Of Assessment	Discussion
	Proximity to the Wandi Robert Plumb's Inn inducing dust, visual and vibration impacts	Works on site could negatively impact the Wandi Robert Plumb's Inn	Low	The Wandi Robert Plumb's Inn located at 16501 Hume Highway, Narambulla Creek, NSW 2579 is a State significant historic site. The EIS will include a heritage assessment that will address the possible impacts and mitigation measures that need to be taken to accurately protect the heritage in the area.
Socio-economic	Activities in and around the quarry associated with its construction and operation	Impacts to local community through increased noise and traffic	Low	Develop an ongoing relationship with the community via effective and regular consultation and provision of employment opportunities to local residents. Consideration of the impacts to the local community, particularly on Winfarthing Road as part of an EIS. Economic justification and analysis for the proposal will also be undertaken as part of the EIS.

6. Stakeholder consultation

6.1 Consultation to date

A formal stakeholder engagement program has been started for the project.

A Social Impact Assessment (SIA) Scoping Report (GHD 2019) has been prepared in accordance with the objectives of Section 3 (Scoping the SIA for the EIS) of the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (NSW Department of Planning and Environment, 2017).

The SIA Scoping Report outlines the consultation measures completed to date and the feedback received by the community.

6.2 Next steps

The SIA Scoping Report outlines the next steps proposed for consultation during development of the project and will continue in some form throughout the operational life of the quarry. A community engagement plan will be developed which will provide a framework to identify and appropriately consult with stakeholders that may be influenced by or have an interest in the Project. Key stakeholders include:

- Community
- Local industry
- Non-government organisations and community bodies
- government (Federal, State and Local).

A stakeholder consultation log will be maintained as a record of the consultation activities undertaken. Consultation to be undertaken throughout the approvals process for the Project will include:

- Meetings with the most directly affected residential receivers
- General information provision via a community newsletter
- Creation of a ‘1800 number’ and community e-mail address, providing a receptive avenue of communication for community stakeholders
- Meetings with other stakeholders where required.

7. Summary and justification

Global Quarries Australia Pty Ltd propose the development of a quarry at Lots 3 and 4 of DP 247199 and Lot 7001 of DP 1025585, off Winfarthing Road, southwest of Marulan in NSW. The project involves establishment of hard rock quarry and progressive rehabilitation of the pits with VENM, ENM and other clean fill material.

The quarry will produce tuffaceous aggregate for use in cement making, demand for which is strong throughout the greater Sydney region. It is considered a premium product, and requires minimal processing (other than crushing to a 20mm grain size) after blasting and extraction occur. The site will be progressively rehabilitated to be representative of its original landform at the conclusion of extraction activities. The project is permissible with consent and is considered state significant development in accordance with Schedule 1 of the SRD SEPP. An EIS will be prepared to accompany the DA for the project and will consider all potential impacts associated with the construction and operation of the facility.

This PEA has been prepared to provide an overview of the project and enable the DP&E to issue the SEARs for the preparation of the EIS.

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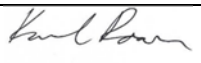
1	D. Stewart	K Rosen		K. Rosen		03 04 2019

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