

REFERRAL OF A PROJECT FOR A DECISION ON THE NEED FOR ASSESSMENT UNDER THE *ENVIRONMENT EFFECTS ACT 1978*

REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Eighth Edition, 2023). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

It will generally be useful for a proponent to discuss the preparation of a Referral with the Impact Assessment Unit (IAU) at the Department of Transport and Planning (DTP) before submitting the Referral.

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
 - a brief description of potential changes or risks to environmental assets resulting from the project;
 - available information on the likelihood and significance of such changes;
 - the sources and accuracy of this information, and associated uncertainties.

Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.

- A USB copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 10MB as they will be published on the Department's website.**
- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

**Minister for Planning
PO Box 500
EAST MELBOURNE VIC 8002**

Couriers

**Minister for Planning
Level 16, 8 Nicholson Street
EAST MELBOURNE VIC 3002**

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to ees.referrals@delwp.vic.gov.au is required. This will assist the timely processing of a referral.

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	Holcim (Australia) Pty Ltd
Authorised person for proponent: Position: Postal address: Email address Phone number: Facsimile number:	Matt Dodd Project Manager - Vic Aggregates Level 3, 290 Burwood Road Hawthorn VIC 3122 matt.dodd@holcim.com 0429 791 318 N/A
Person who prepared Referral: Position: Organisation: Postal address: Email address Phone number: Facsimile number:	Joseph Thom Principal Environmental Planner Umwelt Australia Pty Ltd Suite 4, Level 1, 50 Queen Street, Melbourne VIC 3000 jthom@umwelt.com.au 0400 599 803 N/A
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	<p>The proponent:</p> <p>One of the largest integrated suppliers and manufacturers of building materials and solutions in Australia & New Zealand. In Australia, Holcim (Australia) Pty Ltd (Holcim) has a rich history in the extractive industry, dating back to 1901 when it began serving the industry under the well-known Readymix and Humes brands.</p> <p>Holcim operates hard rock, sand and gravel quarries. These quarry materials are used as key ingredients in the manufacturer of products like concrete and asphalt, which are essential construction materials.</p> <p>The Consultant:</p> <p>Umwelt Australia Pty Ltd (Umwelt) has been engaged by Holcim as the Lead Consultant to coordinate preparation of this referral under the Victorian <i>Environment Effects Act 1978</i> (EE Act) for this Project.</p> <p>Umwelt is experienced in undertaking environmental impact assessments, conducting specialist impact studies and obtaining approvals for complex major infrastructure developments.</p> <p>Holcim has also engaged suitably qualified consultants to undertake a range of technical investigations for the Project. The following technical investigations and documents have been prepared to support this referral:</p> <ul style="list-style-type: none"> ● Referral Figures (Attachment 1)

	<ul style="list-style-type: none"> ○ Figure 1 Regional Context ○ Figure 2 Work Authority Boundary Context ○ Figure 3 Proposed Extension Area ○ Figure 4 Previously Approved Extraction Area at the PEA ○ Figure 5 Planning Zones ○ Figure 6 Planning Overlays ○ Figure 7 PEA Ecological Impacts ○ Figure 8 Sensitive Receptors Within 1km of PEA ● Preliminary Ecological Assessment, prepared by Ecology and Heritage Partners (EHP; 2023) (Attachment 2) ● Biodiversity Assessment prepared by EHP (EHP, 2024) (Attachment 3) ● Groundwater Impact Assessment, prepared by MSH Groundwater (2024) (Attachment 4) ● Preliminary Landscape and Visual Impact Assessment, prepared by Landform Architects (2024) (Attachment 5) ● Air Quality Assessment, prepared by Katestone (2024) (Attachment 6) ● Cultural Heritage Due Diligence, prepared by Umwelt (2023) (Attachment 7) ● Site Assessment and Letter of Cultural Heritage Advice, prepared by Umwelt (2024) (Attachment 8) ● Pakenham Quarry Environment Management Plan (Attachment 9)
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2. Project – brief outline

<p>Project title: Pakenham Quarry Extension Project</p>																	
<p>Project location: (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context)</p> <p>The subject land is at the Mt Shamrock, Pakenham Quarry (the Quarry) on land described as 2/LP200083, located at 95 Mount Shamrock Road, Pakenham Victoria 3810. The Quarry is within the Cardinia Shire Council (Council) local government area (LGA), approximately 65 km south east of Melbourne and 2.5 km north of the Pakenham township (Figure 1 of Attachment 1).</p> <p>The subject land in this referral is the Proposed Extension Area (PEA), which is located to the northeast of current Quarry operations (Figure 2 of Attachment 1). The total area for the PEA is 11 ha. The Australian Map Grid coordinates of the PEA are detailed below:</p>																	
<table border="1"> <thead> <tr> <th>Location point</th> <th>Easting</th> <th>Northing</th> </tr> </thead> <tbody> <tr> <td>Extension northern corner</td> <td>145.477063</td> <td>-38.021494</td> </tr> <tr> <td>Extension southern corner</td> <td>145.483381</td> <td>-38.026598</td> </tr> <tr> <td>Extension western corner</td> <td>145.475973</td> <td>-38.025584</td> </tr> <tr> <td>Extension eastern corner</td> <td>145.484393</td> <td>-38.022569</td> </tr> </tbody> </table>	Location point	Easting	Northing	Extension northern corner	145.477063	-38.021494	Extension southern corner	145.483381	-38.026598	Extension western corner	145.475973	-38.025584	Extension eastern corner	145.484393	-38.022569		
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<p>Short project description (few sentences):</p> <p>The Project seeks to extract a new basalt resource located within Holcim-owned land and within the approved Work Authority 174 (WA 174) boundary. WA 174 currently provides for the</p>																	

development and operation of the Quarry (**Figure 2 of Attachment 1**). The proposed area for extraction is immediately north east of the Quarry's current (approved) extraction limit. This area is referred to in this document and on the accompanying figures as the Proposed Extension Area (or PEA) (see **Figure 3 of Attachment 1**).

The figures also show the proposed new pit area, which includes the PEA and an area within the previously approved limit of extraction under WA 174.

In 2008, the PEA was removed from the approved limit of extraction due to it being deemed commercially unviable at the time (see Section 3 Background/rationale of project and **Figure 4 of Attachment 1**).

Holcim is seeking approval to extract the resource at the PEA, which is estimated at seven (7) to nine (9) million tonnes (Mt) of fresh and weathered basalt that is located beneath 30 m of overburden and highly weathered rock. The maximum depth of the extraction at the PEA would be approximately RL 160

Basalt extraction operations at the PEA would occur at the same time as operations at the existing Quarry. Holcim will use existing infrastructure at the Quarry to transfer basalt extracted from the PEA via existing internal haul roads to the Quarry's processing plant. No changes will be made to existing infrastructure. No changes are proposed to processing activities, the rate of production, or the hours of operation at the Quarry.

As the PEA is located entirely within the approval boundary for WA 174, an application for a Work Plan variation will be made to include proposed extraction operations at the PEA under the existing Work Plan for WA 174. A new planning permit for the use and development of the PEA will also be sought under Clause 53.22 (Significant economic development) of the Cardinia Planning Scheme (the Planning Scheme).

3. Project description

Aim/objectives of the project (what is its purpose / intended to achieve?):

The aim of the project is to ensure Holcim can maintain a consistent supply (approximately 1 Mt per annum) of high-quality basalt products from the Quarry to support infrastructure projects in Victoria.

A further aim or objective is to provide this basalt supply by capitalising on existing quarry infrastructure, which avoids and minimises adverse effects on communities and the environment by opening a quarry in a new location

Background/rationale of project (describe the context / basis for the proposal, e.g. for siting):

Existing Works Approval WA 174

Holcim own and operate the Quarry in Pakenham, which has operated as a basalt quarry (extractive industry) since 1974 and supplies approximately 1 Mt of high-grade basalt products annually. At this production rate, Holcim has determined that the Quarry has approximately 6 years' worth of basalt resource remaining.

The PEA is within the approved Work Authority 174 (WA 174) boundary which provides for the development and operation of the Quarry (**Figure 2 of Attachment 1**).

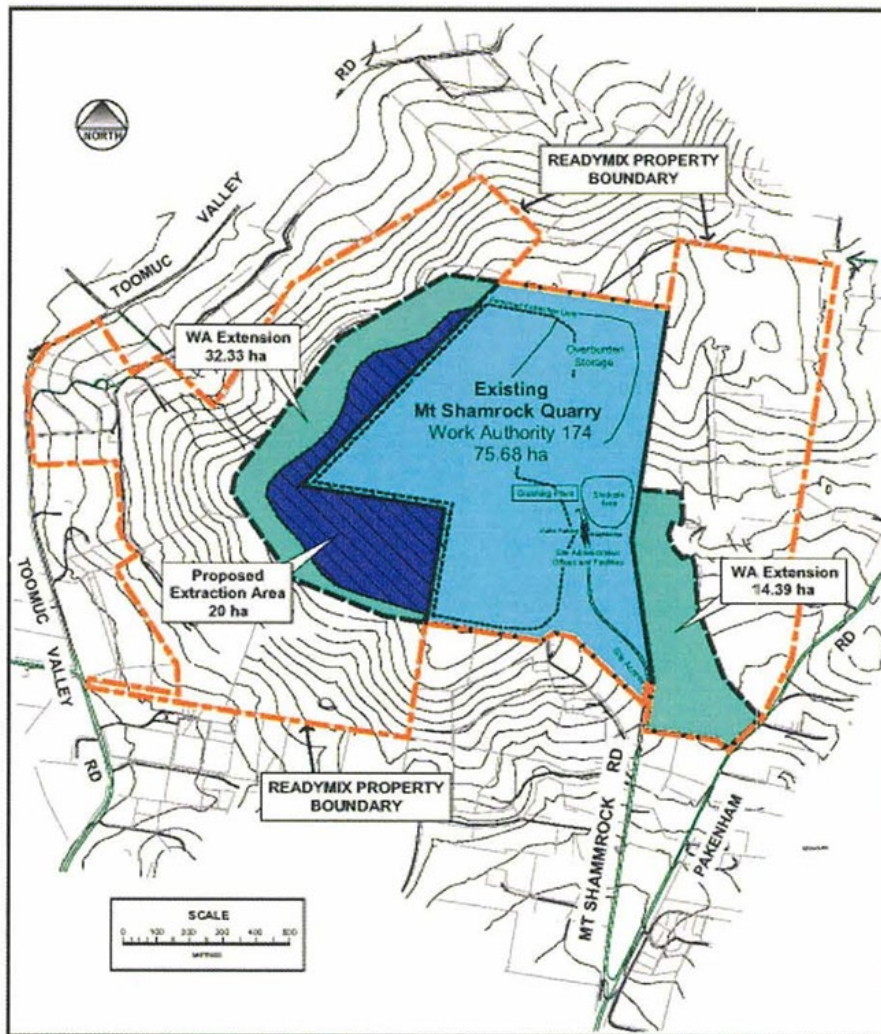
Historically, the PEA was located within the approved limit of extraction for the wider Quarry under WA 174. In 2008, the PEA was removed from the approved limit of extraction due to it being deemed commercially unviable at the time (see **Figure 4 of Attachment 1**).

2005 Mt Shamrock Quarry EES

In 2005 the Quarry's then operator, CSR Readymix, proposed to extend the area of operations within the existing Quarry site to allow for the extraction of high-quality basalt and extend the operating life for another 20 years. Under this proposal, the total area covered by the Work Authority would increase to 122.4ha, including 32.35ha to the south and west (of which 20ha would be available for extraction under the then proposed Variation to the Work Plan) and 14.39ha to the south-east, which would be used for the management of surface water.

During this process, Readymix elected to remove the PEA from the Quarry's proposed expanded limit of extraction, as is reflected in the associated Planning Panel report (DSE, 2005), on the basis that the basalt resources within the PEA was located under a considerable volume of overburden and considered to be financially unviable to extract. No extraction activities have occurred within the PEA.

The map below, taken from the 2005 EES Main Report, shows the 2005 proposed Work Authority boundary and extraction limit which includes the PEA land.



The works proposed within the 2005 extension proposal, are of the same nature as works that are now proposed within the PEA, including:

- the removal of soil and overburden, extraction of basalt by drilling and blasting
- the loading and transportation of extracted basalt to internal storage areas or to the processing plant
- crushing and screening of rock into useable product
- stockpiling and sale of rock products on site and the transport of products by a variety of haulage vehicles

The Planning Panel convened by the Minister for Planning to review the 2005 EES and provide recommendations found that the proposed extension to the Quarry was consistent with the relevant planning and environmental framework and that potential adverse environmental and amenity impacts of the proposed expansion could be effectively managed so that the environmental impacts could be effectively minimised and managed. The subsequent 2006 Minister's Assessment concluded that the proposal should be allowed to proceed, subject to appropriate conditions. No recommendations were made by the Minister for Planning regarding the PEA within the Quarry site at that time.

Changes to the Quarry's Work Authority boundary and extraction limit were subsequently approved in 2008.

The Proposed Extension Area (PEA)

Changes to market conditions since 2008 coupled with a shortage of high-quality quarry material close to market have since made extraction operations at the PEA commercially viable. Holcim have also identified a need for further overburden and fill to support landform rehabilitation

activities at the Quarry. These developments have prompted Holcim to conduct a series of assessments of potential quality resource opportunities within Holcim owned land and existing boundaries including geotechnical investigations and resource assessment drilling programs conducted in early 2024. These investigations have enabled Holcim to develop a substantial geological model and determine that there is an additional 7-9 Mt of basalt resource at the PEA.

It is predicted that extraction operations at the PEA would enable the Quarry to continue operations for another 6-8 years while maintaining the current operational output of approximately 1 Mt per annum. Basalt extracted from the PEA would use existing processing and transport infrastructure at the Quarry, and would not require changes to the existing operations at the Quarry, including:

- Processing operations;
- The locations of existing ancillary infrastructure (i.e. haul roads);
- The annual extraction rate;
- The Quarry's hours of operation;
- Traffic routes entering and exiting the Quarry; and
- The approved Work Authority 174 Boundary

Extraction operations at the PEA would enable continued supply of a high-quality basalt resource for a range of construction and industrial applications. An extension to the operational life of the Quarry would also ensure continued direct and ongoing employment opportunities to the local region, as well as significant economic multiplier effects in the local and State economies.

Extraction within the PEA requires approval under the *Mineral Resources (Sustainable Development) Act 1990* (MR(SD) Act) and *Planning and Environment Act 1987* (P&E Act) (see Section 10).

Main components of the project (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

The Project involves the extraction of basalt from an approximate 11 ha area north east of the Quarry (the PEA).

Extraction activities at the PEA would generally consist of:

- Stripping and stockpiling of vegetation, topsoil and overburden material for use in bunding and rehabilitation areas
- Excavation of overburden material and weathered rock and storage for use in rehabilitation activities (i.e. rehabilitation of final pit faces), to control drainage, or to maintain pit face stability
- Extraction of the basalt resource using conventional drilling and blasting techniques
- Haulage of blasted rock via dump trucks to the existing multi stage crushing and screening plant at the Quarry.
- Placement of overburden & topsoil to achieve the rehabilitation profile
- Hydroseeding and direct seeding of approved species for revegetation of the area

No changes to existing infrastructure footprint or new infrastructure is required for the Project.

The Project would not change current (approved) operations at the Quarry such as the processing plant, annual throughput, hours of operation, or access & egress onto the local road network.

A detailed description of proposed operations at the PEA will be outlined in an application for a Work Plan variation to WA 174 for the Project.

Ancillary components of the project (e.g. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

With the exception of minor extensions to existing internal haul roads within the WA 174 to access the PEA, no changes to the locations or use of existing infrastructure at the Quarry site are proposed. The Project would not change current (approved) operations at the Quarry such as the processing plant, annual throughput, hours of operation, or access & egress onto the local road network.

Key construction activities:

Extensions to existing internal haul roads would be required to connect the PEA to existing quarry infrastructure. No other construction activities are proposed.

Key operational activities:

Operational activities include site preparation, extraction and transport of basalt rock reserves extracted at the PEA.

Vegetation, Soil and Overburden Removal and Storage

Vegetation at the site would be largely cleared and removed in a staged manner for most of the PEA. A 20 m wide landscaping screen, consisting of existing planted vegetation, will be retained and improved along the northern and eastern boundaries of the PEA and within the WA 174 boundary (**Figure 3 of Attachment 1**). Topsoil would be stripped via an excavator/bulldozer/front end loader, and either hauled to areas under rehabilitation or stockpiled for future rehabilitation use within the boundary of WA 174. Where soil is stockpiled for future use, mounds would not be located within identified areas where native vegetation is to be retained, or within the drip-line of existing trees. Mounds would be constructed and located to minimise any visual disturbance, erosion (i.e. contoured and grassed) and to avoid contamination with other materials.

Basalt Extraction and Transport

Extraction of basalt within the PEA would be undertaken in a progressive manner, via conventional drill and blasting. A tracked hydraulic percussion drill rig would be used to drill blast holes, which are to be loaded with explosives and initiated by non-electric detonation. Secondary breaking of blasted rock may be undertaken via an excavator mounted hydraulic rock breaker to facilitate loading of rock onto dump trucks.

Blasting will be undertaken during current approved blasting times which are between 11:00am to 12 noon and 2:00pm to 3:00pm Mondays to Fridays. Blasting would occur on average once a week. There would be no blasting on weekends or public holidays, or at any other time unless approval has been given by the responsible authorities.

Blasted rock would be hauled via dump trucks on internal haul roads to the existing multi stage crushing and screening plant at the Quarry.

Processing and Export

Processing and export of quarry materials would be done using plant and equipment operating under the Quarry's approved Planning Permit T050156 and work authority WA 174.

The Project would not change current (approved) operations at the Quarry such as the processing plant, annual throughput, hours of operation, or access & egress.

Key decommissioning activities (if applicable):

Upon completion of extractive operations, Holcim's end use concept is to rehabilitate the inner batters of the PEA to a stable and ecologically sustainable landform. The progressive excavation of the PEA would enable rehabilitation to occur concurrently at areas in which the basalt resource has been exhausted.

The primary objective of rehabilitation is to create a safe and functional landscape, and would generally include the following activities:

- Earthworks to develop batter and bench profiles that ensure stability and control potential erosion effects (i.e. channel surface water flows effectively into drains);
- Planting programs that are compatible with the surrounding landscape (including visual amenity). Planting programs would utilise stockpiled topsoil, and feature a variety of planting techniques (tube and cell planting, direct seeding, hydroseeding) to create an environment that will provide habitat for fauna whilst minimising the visual impact of extraction operations upon the existing landscape;
- Ongoing monitoring and maintenance of rehabilitated areas, including weed management and vegetation watering, to ensure successful establishment of planting programs, or guide further rehabilitation activities where required.

A new Rehabilitation Plan for the PEA would be implemented in line with the proposed Work Plan variation for the Project.

Is the project an element or stage in a larger project?

No Yes If yes, please describe: the overall project strategy for delivery of all stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages).

Is the project related to any other past, current or mooted proposals in the region?

No Yes If yes, please identify related proposals.

The Project would add a new extraction area for basalt at the Quarry and would use existing Quarry infrastructure to transport and process basalt extracted from the PEA. The Project is not related to any past or mooted proposals in the region.

What is the estimated capital expenditure for development of the project?

Capital expenditure for the Project is approximately \$1 Million.

4. Project alternatives**Brief description of key alternatives considered to date** (eg. locational, scale or design alternatives. If relevant, attach A4/A3 plans):

In recognition that current operations at the Quarry will exhaust the approved basalt resource within the next 6 years at the current extraction rate, Holcim have undertaken preliminary investigations to identify additional basalt resources proximal to the Quarry and extend the operational life of the Quarry.

Resource investigations subsequently identified a considerable basalt resource at the PEA. This area is expected to host approximately 7-9 Mt of basalt resource that would extend the operational life of the Quarry for another 6-8 years.

Holcim have considered the development of alternative quarrying sites proximal to Pakenham and within the surrounding region, however, have not identified suitable locations with a sufficient basalt resource that is close to the market to warrant the capital expenditure required to establish a greenfield site. Procurement of high-quality materials from Holcim's other quarry sites have also been identified to be financially unviable. No alternative sites have therefore been considered for the Project.

Brief description of key alternatives to be further investigated (if known):

Beyond minor refinements to the pit footprint and staging currently being investigated as part of the detailed design process, no further alternatives are being investigated for the Project.

5. Proposed exclusions**Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:**

No further project stages or ancillary activities for the Project are being considered beyond what is described in this referral.

6. Project implementation

Implementing organisation (ultimately responsible for project, i.e... not contractor):

Holcim (Australia) PTY LTD

Implementation timeframe:

Works are expected to commence soon after Holcim receives all necessary planning and work authority approvals, currently estimated as Q4 of 2025.

Proposed staging (if applicable):

Holcim are proposing to conduct staged extraction of the basalt resource at the PEA, and is currently investigating this staging as part of the detailed design process for the Project. Detailed staging will be outlined in a Work Plan variation capturing extraction operations at the PEA for the Project under the existing Work Plan for WA 174.

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

No Yes If no, please describe area for investigation.

If yes, please describe the preferred site in the next items (if practicable).

The PEA is detailed in **Figure 3 of Attachment 1**.

General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

The PEA is located to the northeast of the Quarry within the existing WA 174 approval boundary (see **Figure 3 of Attachment 1**). The PEA features steep to undulating topography, treed and grassed areas, internal access tracks, and a small depression containing shallow water. Disturbance associated with operations at the Quarry is present at the southern and western-most extents of the PEA.

The PEA has historically been subject to significant ground disturbance since the late 1970's, with the site being used as an overburden storage area at the Quarry. Historic disturbance has included significant vegetation and topsoil stripping of the site, including cutting, levelling and subsequent stacking with overburden (filling). Benching created from landform stabilisation cuts and overburden stacking has resulted in the current topography which ranges from steep rises to an undulating landscape.

During historic disturbance, most of the land at the PEA was cleared of native vegetation, however some small remnant patches were retained. These patches are disturbed and found primarily in the far north west and central south of the site. Vegetation at the site predominantly consists of planted and direct seeded revegetation, which has been sown during several stages of rehabilitation activities conducted throughout the operational life of the Quarry.

Images taken of the PEA in April 2024 are shown in Plates 1 – 5 below.



Plate 1: Grassed area at the PEA.



Plate 2: Gravel track at the PEA.



Plate 3: Gravel and dirt tracks at the PEA.



Plate 4: Replanted trees and evidence of modified topography and rehabilitated benching at the PEA (1/2).



Plate 5: Replanted trees and evidence of modified topography and rehabilitated benching at the PEA (2/2).

Site area (if known): Approximately 11 hectares.

Route length (for linear infrastructure) N/A and **width** N/A

Current land use and development:

The PEA is located within WA 174, which provides for the development and operation of the Quarry. The PEA has historically been used for overburden storage and was removed from the Quarry's approved limit of extraction in 2008. No extraction or operational activities have therefore been undertaken at the PEA. The site comprises largely of revegetated treed and grassed areas, which serve to stabilise soil and reduce erosion of the rehabilitated landform. The site is currently not utilized for any other purposes. Outside of historic use as an overburden storage site, the PEA has not undergone any additional development.

Description of local setting (eg. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):

The PEA is located within the northeast corner of WA 174. There is no direct road to the site from the public road network, however access is provided by tracks connecting to the Quarry plant and sales area and Holcim's adjacent freehold landholdings. The closest public road to the PEA is Mt Shamrock Road to the south, which provides access to the Quarry (**Figure 3 of Attachment 1**). No other infrastructure is located at the site.

The closest township is Pakenham, approximately 5 km to the south.

The land surrounding the site is either Holcim's freehold land or is generally used for rural residential purposes. The Pakenham Pony club at Huxtable Road Horse Riding Reserve is located directly to the north of the PEA.

Sensitive land uses are defined as any land uses that require a particular focus on protecting the beneficial uses of the air environment relating to human health and wellbeing, local amenity, and aesthetic enjoyment, for example residential premises, childcare centres, pre-schools, primary schools, education centres or informal outdoor recreation sites. The nearest sensitive receptor is

a residential dwelling located approximately 430 m to the northeast of the PEA's north easternmost extent. There are 44 dwellings within 1 km of the PEA. None of these sensitive uses are anticipated to be adversely impacted from the proposed expansion of quarry activities.

Planning context (eg. strategic planning, zoning & overlays, management plans):

Policy Documents

The Project aligns with key policy documentation and strategies published by the Victorian government and related agencies, pertaining to the prioritisation of securing and developing high quality extractive resource opportunities for Victoria's immediate and long-term construction requirements.

Helping Victoria Grow: Extractive Resources Strategy

Prepared by the former Department of Economic Development, Jobs, Transport and Resources, the *Helping Victoria Grow: Extractive Resources Strategy* (the Strategy) establishes a framework for securing and maintaining a sufficient supply of high quality extractive resources to ensure that high quality construction materials continue to be available at a competitive price to support Victoria's immediate and long-term infrastructure construction requirements. The strategy seeks to strengthen the security of future extractive resources through improved forward planning (including planning specific to transport and delivery infrastructure), and through building greater certainty, confidence and investment in the sector. The strategy also seeks to build community awareness of the extractive industry, and promote sustainability, environmental stewardship and innovation practices relevant to extractive and rehabilitation methodologies post-closure.

The Project is aligned with the Strategy as the proposed extension of the Quarry will ensure a continued high quality basalt resource will be available to the Victorian market, to support construction investment and economic development.

Strategic Extractive Resources Roadmap

The Strategic Extractive Resources Roadmap (Roadmap) has been developed to support resource and land use planning priority actions in the Extractive Resources Strategy. The Roadmap has been developed to progress mapping updates and planning provisions that better identify and secure strategic extractive resources in priority locations across Victoria. In recognition that extractive resources like sand, stone and gravel are vital for the construction of critical infrastructure required for the growth of Victorian communities, the Roadmap establishes a plan of action based on currently available evidence and advice to identify land with the greatest potential and suitability for future quarry development.

As an accessible and developable basalt resource within the WA 174 boundary, the Project is aligned with the strategic intent of the Roadmap in that it provides a suitable existing site for ongoing quarrying activities and operations.

Plan Melbourne

Prepared by DTP (formerly Department of Environment, Land, Water and Planning), *Plan Melbourne* is a metropolitan planning strategy that provides a long-term plan designed to respond to the statewide, regional and local challenges and opportunities Victoria is expected to face to 2050. Integrating long-term land use, infrastructure and transport planning; *Plan Melbourne* outlines a strategy for supporting jobs and growth while building on Melbourne's legacy of distinctiveness, liveability and sustainability. The plan includes a total of nine principles to guide policies and actions to achieve seven outcomes considered required to create a competitive, liveable and sustainable city. Directions and policies are also detailed defined to achieve proposed outcomes.

The Project aligns with Plan Melbourne's strategic planning intent to support the productive use of land and quarry resources in a non-urban area of Melbourne and ensure a continued supply of construction material for Victoria's future growth.

Recommended Separation Distances for Industrial Residual Air Emissions

Prepared by the Environment Protection Authority (EPA), originally released in 1977 and amended in 2013, '*Recommended Buffer Distances for Industrial Residual Air Emissions*' is a guide to appropriate buffers between various types of industry and nearby sensitive land uses. This document relates only to residual air emissions and does not address other off-site amenity issues such as vibration and noise. The guidelines indicate adequate buffer distances to enable these emissions "to dissipate without adverse impacts on sensitive land uses". The recommended

buffer distance between hard rock quarrying (with blasting) and sensitive land uses is 500m. However, this distance can be reduced subject to demonstrating that the proposed buffer is appropriate by meeting strict environmental criteria.

In accordance with this guidance, Holcim have established a 500m buffer distance for the majority of sensitive receptors proximal to the Project. One dwelling is located approximately 430 m from the PEA, and Holcim will implement strict management measures to mitigate the potential for impacts on this receptor (see Section 15).

Planning Policy Framework

Applicable clauses of the Planning Policy Framework under the Planning Scheme for the Project are:

- Clause 11.01 – Green Wedges – Metropolitan Melbourne
- Clause 11.03 – Peri-urban areas
- Clause 12.01 – Native Vegetation Management
- Clause 13.05 – Noise Management
- Clause 13.06 – Air Quality
- Clause 13.07 – Land use compatibility
- Clause 14.02 – Water Quality
- Clause 14.03 – Resource exploration and extraction
- Clause 15.03 – Aboriginal cultural heritage
- Clause 17.03 – Sustainable industry

Relevant clauses within the MSS are:

- Clause 21.03 – Vision – Strategic Framework
- Clause 21.04 – Objectives – Strategies – Implementation

Planning Zones and Overlays

The applicable planning zone for the Project is:

- Clause 35.04 – Green Wedge Zone - Schedule 1.

Applicable planning overlays for the Project include:

- Clause 42.01 – Environmental Significance Overlay – Schedule 1 (ESO1); and
- Clause 44.01 – Erosion Management Overlay (EMO).

Relevant planning zones applicable to the PEA are detailed in **Figure 5 of Attachment 1**.

Relevant planning overlays applicable to the PEA are detailed in **Figure 6 of Attachment 1**.

Particular Provisions

Applicable particular provision for the Project include:

- Clause 52.08 – Earth and Energy Resources Industry
- Clause 52.09 – Extractive Industry and Extractive Industry Interest Areas
- Clause 52.17 – Native Vegetation
- Clause 53.22 – Significant Economic Development

Land Use Terms

Pursuant to Clause 73.03 of the Planning Scheme, the land use term for the proposed works is considered to be 'Extractive industry', which is defined as:

'Land used for the extraction or removal of stone from land for commercial use, or to use the stone for building, construction, road, or manufacturing works. It includes:

- *The rehabilitation of land; and*
- *The treatment of stone (such as crushing and processing) or the manufacture of bricks, tiles, pottery, or cement or asphalt products on, or adjacent to, the land from which the stone is extracted or removed.'*

Local government area(s):

Cardinia Shire LGA

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity

(cf. general description of project site/study area under section 7):

The PEA is an approximately 11 ha area located to the northeast of the WA 174 approval boundary for the Quarry. The site has historically been used as an overburden storage area, beginning in the late 1970's and continuing until the early 1990's, resulting in significant modification and disturbance to native vegetation and the original landform. Given this history of disturbance, environmental values at the PEA are predominantly the result of subsequent rehabilitation activities, however some remnant values remain.

The key environmental sensitivities in the biodiversity study area (inclusive of the PEA) are shown in Figure 2a of the Preliminary Ecological Assessment, prepared by Ecology and Heritage Partners (EHP, 2023) (Attachment 2). These can be summarised as follows:

Flora

The composition of flora and vegetation at the PEA is predominantly the result of historic modification and subsequent staged rehabilitation of the site throughout the operational life of the Quarry. Primarily, the PEA is covered in planted and direct seeded revegetation; however some small patches of native remnant communities are present. Three Ecological Vegetation Classes (EVCs) under the Gippsland Plain Bioregion have been identified within the PEA:

- Damp Forest (EVC 29)
- Aquatic Herbland (EVC 48)
- Shrubby Foothill Forest (EVC 45).

An additional EVC was identified outside the PEA but within the study area, being Lowland Forest (EVC 16). This EVC is in the north-west of the study area however outside of the PEA, and there are no predicted impacts on this EVC, or the three large trees (in patches) contained within this patch (see Figure 2a of the Preliminary Ecological Assessment, prepared by Ecology and Heritage Partners (EHP, 2023) (Attachment 2).

11 large trees have been identified within the PEA within the Damp Forest EVC (EVC 29).

Fauna

Modified vegetation at the PEA limits the potential for critical habitat for native fauna, however foraging habitat has been identified at the site for several significant fauna species including two species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act); Gang-gang Cockatoo (*Callocephalon fimbriatum*) and Blue-winged Parrot (*Neophema chrysostoma*), as well as three species listed under the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act); Powerful Owl (*Ninox strenua*), Sooty Owl (*Tyto tenebricosa*) and Southern Toadlet (*Pseudophryne semimarmorata*).

9. Land availability and control

Is the proposal on, or partly on, Crown land?

X No Yes If yes, please provide details.

Current land tenure (provide plan, if practicable):

Current land tenure of the Quarry is freehold land owned by Holcim, described as 2/LP200083.

Intended land tenure (tenure over or access to project land):

No change to land tenure is proposed.

Other interests in affected land (eg. easements, native title claims):

None

10. Required approvals

State and Commonwealth approvals required for project components (if known):

Mineral Resources (Sustainable Development) Act 1990 (Vic)

The Project (extractive industry at the PEA) represents a 'change in work' that is not consistent with approved activities in WA 174 for the Quarry. An application for a Work Plan variation will therefore be prepared for the Project, given the Project is entirely located within the approval boundary for WA 174.

In accordance with requirements of the MR(SD) Act, the Work Plan variation will provide a detailed description of the proposed staging of extraction operations at the PEA, as well as associated risks, rehabilitation and community engagement conducted for the Project.

Key components of the Work Plan include:

- How the Work Plan Variation relates to the current approved Work Plan and its setting within the existing Work Authority boundary, including a description of the potential hazards arising from operations.
- How any new risks or changed methods would be appropriately managed, including any new management or mitigation measures that would be needed.
- How engagement with the community and key stakeholders will be undertaken or impacted by the new works.
- Any required updates to the existing rehabilitation and closure plan

A key part of the Work Plan Variation process is the identification of hazards and sensitive receptors, including the assessment of inherent risks, the development of appropriate risk control measures, and an assessment of residual risks as part of the update of the Risk Management Plan that supports the overall Work Plan.

This EES referral contemplates potential effects on receptors to a distance of 500 metres. The assessment found:

- no substantial effects are predicted with the implementation of industry-standard mitigation.
- progressing extraction of the quarry to the north-east would locate operations nearer to dwellings in the north-east, however assessments predicted compliance with the operational limits for air quality and noise. .
- Given that the impacts of the project meet acceptable limits within 500m as demonstrated in this referral, it can be concluded that potential effects beyond 500m will be negligible.

Assessment of the Work Plan Variation and any proposed risk management approach and measures will be undertaken by the Earth Resources Regulator (ERR). No Project works can be conducted until endorsement is provided by ERR and planning approval is obtained.

Planning and Environment Act 1987 (Vic)

A planning permit will be sought through the Clause 53.22 planning pathway, which would be facilitated by DTP, following endorsement of the Work Plan variation by Earth Resources Regulation (ERR). The planning permit application would be for the use and development of an extractive industry in accordance with the relevant requirements of the planning scheme and the P&E Act.

In accordance with Clause 52.09 (Extractive Industry and Extractive Industry Interest Areas) of the Cardinia Planning Scheme, an application to use and develop land for extractive industry must be accompanied by a copy of a Work Plan. For the Project, a variation to an approved Work Plan that has received statutory endorsement under Section 77TD of the MR(SD) Act would be submitted alongside the planning permit application.

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

Potential habitat for two Matters of National Environmental Significance (MNES) have been identified within the PEA: Gang-gang Cockatoo (*Callocephalon fimbriatum*) and Blue-winged Parrot (*Neophema chrysostoma*).

Significant impact assessments have been carried out for the Project which conclude that a significant impact on these MNES is unlikely. Based on this, a referral to the Commonwealth Minister for the Environment under the EPBC Act is not required.

Further information is provided in Section 11.

Aboriginal Heritage Act 2006 (Vic)

A Cultural Heritage Due Diligence Assessment (Umwelt, 2023) and Site Assessment (Umwelt, 2024) have been conducted for the Project, to identify the likelihood for potential harm to Aboriginal cultural heritage and determine the statutory requirements for further assessment under the AH Act or *Aboriginal Heritage Regulations 2018*. These assessments found that the PEA has historically been subject to significant ground disturbance since the late 1970's and did not identify any Aboriginal cultural heritage or Historic cultural heritage within the site or its immediate proximity. Review of the *Aboriginal Heritage Regulations 2018* has identified that the Project is considered a high impact activity, however the PEA is not located within an area of cultural heritage sensitivity. There is no mandatory requirement for a CHMP for the Project under Section 46 of the AH Act, as it does not meet the two-trigger threshold under the regulations.

The existing conditions of the Consent to Disturb (17 May 2007, relating to known Aboriginal places to the west outside of the PEA) are still valid as they apply to any other locations as specified in the consent regarding the Pakenham Quarry, until such time as the consent is deemed fulfilled. There are no further statutory requirements in relation to the Project.

Have any applications for approval been lodged?

X No Yes If yes, please provide details.

Approval agency consultation (agencies with whom the proposal has been discussed):

Early engagement and consultation has been carried out with the following agencies:

- Department of Transport and Planning (Victoria), Impact Assessment Unit (DTP IAU);
- Resources Victoria;
- Earth Resources Regulator (ERR);
- Department of Energy, Environment and Climate Action (DEECA); and
- Cardinia Shire Council.

A summary of the consultation conducted to date for the Project is defined under Section 21 'Consultation Program'.

Other agencies consulted:

Nonapplicable.

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

Overview of potentially significant environmental effects (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

The Project is unlikely to have significant environmental effects of local, regional or state significance.

The primary potential environmental effect is the removal of 1.67 ha of native vegetation, comprising three EVCs:

- 1.38 ha Damp Forest (EVC 29 – Least Concern)
- 0.05 ha of Aquatic Herbland (EVC 48 – Endangered)
- 0.24 ha Shrubby Foothill Forest (EVC 45 – Least Concern).

No national or state significant flora species have been identified at the PEA. Appendix 1.4 of the Project's Biodiversity report (EHP, 2024) assessed the potential for significant flora recorded within 10 kilometres of the study area and concluded that the likelihood of occurrence of significant flora is low.

A Preliminary Ecological Assessment for the Project identified suitable habitat for five fauna species listed under either the Environment Protection and Biosecurity Conservation Act 1999 (EPBC Act) or the Flora and Fauna Guarantee Act 1988 (FFG Act) within the PEA:

- Gang-gang Cockatoo (*Callocephalon fimbriatum*) – Endangered under EPBC Act and FFG Act
- Blue-winged Parrot (*Neophema chrysostoma*) – Vulnerable under EPBC Act
- Powerful Owl (*Ninox strenua*) – Endangered under FFG Act
- Sooty Owl (*Tyto tenebricosa*) – Endangered under FFG Act
- Southern Toadlet (*Pseudophryne semimarmorata*) – Endangered under FFG Act

While the proposed use of the PEA for extractive purposes requires the removal of habitat for these sensitive species, the Project is unlikely to significantly impact threatened fauna.

Potential effects on water environments, landscape and soils, social environments, cultural heritage, and energy, wastes and greenhouse gas are all predicted to be within acceptable limits with the implementation of management measures. It is anticipated that the risk-based approach used as part of obtaining a variation to the work plan and the assessments required to meet the requirements of the planning scheme would suitably manage any residual uncertainties.

Technical assessments have been completed to identify and determine potential environmental effects associated with the Project. The following assessments and reports provide further detail on the existing environment within the PEA and are included as attachments to this referral:

- Referral figures (**Attachment 1**)
- Preliminary Ecological Assessment, prepared by Ecology and Heritage Partners (EHP, 2023) (**Attachment 2**)
- Biodiversity Assessment prepared by EHP (EHP, 2024) (**Attachment 3**)
- Groundwater Impact Assessment, prepared by MSH Groundwater (MSH; 2024) (**Attachment 4**)
- Preliminary Landscape and Visual Impact Assessment, prepared by Landform Architects (2024) (**Attachment 5**)
- Air Quality Assessment, prepared by Katestone (2024) (**Attachment 6**)
- Cultural Heritage Due Diligence, prepared by Umwelt (2023) (**Attachment 7**)
- Letter of Cultural Heritage Advice (Umwelt, 2024) (**Attachment 8**)
- Pakenham Quarry Environment Management Plan (**Attachment 9**)

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?

NYD No Yes If yes, answer the following questions and attach details.

What investigation of native vegetation in the project area has been done? (briefly describe)

A Preliminary Ecological Assessment was conducted at the PEA on 11th October 2023 by Ecology and Heritage Partners (EHP, 2023) (**Attachment 2**) to understand the potential ecological values present. Findings of the preliminary assessment informed subsequent assessments of the PEA, including a Biodiversity Assessment, conducted on 2 May 2024 to identify the extent and type of native vegetation and ecological communities present at the site (EHP, 2024) (**Attachment 3**).

What is the maximum area of native vegetation that may need to be cleared?

NYD Estimated area: 1.67 hectares

The Project would result in the removal of up to 1.67 ha of native vegetation at the PEA.

How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?

X N/A approx. percent (if applicable)

Which Ecological Vegetation Classes may be affected? (if not authorised as above)

NYD Preliminary/detailed assessment completed. If assessed, please list.

EVCs at the PEA and their bioregional conservation statuses include:

- Damp Forest (EVC 29 – Least Concern)
- Aquatic Herbland (EVC 48 – Endangered)
- Shrubby Foothill Forest (EVC 45 – Least Concern).

The Project will require the removal of a total of 1.67 hectares of these EVCs:

- 1.38 ha Damp Forest
- 0.05 ha of Aquatic Herbland
- 0.24 ha Shrubby Foothill Forest.

Have potential vegetation offsets been identified as yet?

NYD Yes If yes, please briefly describe.

Review of the Native Vegetation Credit Register has identified 11 offset sites within the Melbourne Water CMA and/or Cardinia Shire that can be used to satisfy the general habitat unit and large tree offset requirements for the Project. An offset strategy is included at **Attachment 3**. Holcim are also currently investigating the possibility of securing offsets within Holcim's freehold land surrounding the Quarry.

The Project would result in the loss of 1.67 hectares of native vegetation including 11 large trees at the PEA.

This vegetation removal falls under the Detailed Assessment pathway outlined in the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (DELWP, 2017) and will require offsets of 0.750 general habitat units and 11 large trees (EHP, 2024).

Other information/comments? (eg. accuracy of information)

Please refer to the following ecological assessment reports for the PEA:

- Preliminary Ecological Assessment (EHP, 2023) (**Attachment 2**)
- Biodiversity Assessment (EHP, 2024) (**Attachment 3**).

NYD = not yet determined

Flora and fauna

What investigations of flora and fauna in the project area been done?

(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

Flora

A Preliminary Ecological Assessment conducted for the Project by EHP (2023) (**Attachment 2**) assessed the potential ecological values present within the PEA. The assessment did not identify any nationally or state significant flora, nor habitat values for significant flora species within the PEA. Given the significant degree of historic modification of the PEA, with most of the understorey subject to considerable disturbance or total clearing, and subsequent revegetation associated with rehabilitation activities; the presence of significant flora species was highly unlikely at the PEA.

The Biodiversity Assessment (EHP, 2024; **Attachment 3**) identified a total of 11 Large Trees within the PEA, restricted to patches of Damp Forest (EVC 29). These trees largely consisted of Messmate Stringybark, with occasional Swamp Gum and Narrow-leaf Peppermint.

Fauna

Findings of the Preliminary Ecological Assessment also informed the need for a Targeted Fauna Assessment for significant fauna species identified as potentially occurring at the PEA (Appendix 5 of **Attachment 3**). Targeted surveys were undertaken for two fauna species listed under the EPBC Act (Gang-gang Cockatoo *Callocephalon fimbriatum* and Blue Winged Parrot *Neophema chrysostoma*), and three species listed under the FFG Act (Southern Toadlet *Pseudophryne semimarmorata*, Powerful Owl *Ninox strenua* and Sooty Owl *Tyto tenebricosa*).

No Gang-gang Cockatoo's were identified within the PEA. Gang-gang Cockatoo was observed during the assessment within the broader Quarry site. EHP's assessment considered Gang-gang Cockatoo to be unlikely to use the PEA for breeding purposes, as limited HBTs are present, and of these, few are suitably sized to support breeding. Suitable foraging habitat (predominantly replanted eucalyptus and acacia trees) was observed within most of the PEA, and EHP considered Gang-gang Cockatoo to demonstrate potential to forage occasionally at the site.

A significant impact assessment for Gang-gang Cockatoo was completed against *Matters of National Environmental Significance Significant Impact Guidelines 1.1* and *Conservation Advice for Callocephalon fimbriatum*. The assessment found removal of foraging habitat at the PEA is unlikely to have a significant impact on Gang-gang Cockatoo, given this species is unlikely to rely upon the PEA as important habitat with higher quality areas of available habitat surrounding the PEA at Bunyip State Park, Cardinia Reservoir and Beaconsfield Nature Conservation Reserve.

Foraging habitat for Blue-winged Parrot was identified at the PEA during targeted surveys, in the areas of open grassland which were largely dominated by exotic grasses. While this species is known to forage on a variety of shrubs, limited shrub cover was identified within the PEA. Potential breeding and roosting habitat for Blue-winged Parrot was limited within the study area, with four trees identified as potentially providing breeding habitat, however these trees were considered unlikely to be suitable given they featured hollow openings that were upward-facing or were located close to the ground (i.e. within 3 meters) increasing the likelihood of predation by cats. As a highly mobile species, EHP considered Blue-winged Parrot highly likely to use a range of habitats in the surrounding landscape. This would include large fields of open grassland and high-quality forest at proximal conservation reserves that provide a higher selection of suitable breeding hollows. In comparison, habitat for Blue-winged Parrot is far less suitable for foraging, nesting or breeding at the PEA.

Targeted surveys did not observe Powerful Owl or Sooty Owl, nor suitable breeding habitat for these species (i.e. mature trees with large hollows > 30 cm wide). Some foraging habitat was identified at the PEA which may be opportunistically used by these species; however, this use is expected to be occasional only given the nearby presence of higher quality habitat at conservation reserves in the region. EHP ultimately considered Powerful Owl or Sooty Owl unlikely to rely on habitat at the PEA, given limited preferred habitat characteristics and all past records of Powerful and Sooty Owl occurring within dense bushland, which is unavailable at the PEA, however is found in abundance in the surrounding Beaconsfield Nature Conservation Reserve and Bunyip State Park.

No Southern Toadlet were observed or heard calling during EHP's assessment of the PEA. Southern Toadlet occurs in damp habitats that are inundated during late autumn and winter, such as ephemeral depressions and waterbodies, often where logs or leaf litter are present. Four sites within the PEA were selected to undertake habitat suitability surveys and call-playback for Southern Toadlet, however it was found that most survey sites lacked a substantial canopy and shrub layer for this species (although leaf litter along scattered logs was identified). Southern Toadlet have been recorded within 4 km of the PEA, however given the lack of connectivity, small home range of the species and results of the targeted surveys, a population of Southern Toadlet is not considered to be present at the PEA.

Have any threatened or migratory species or listed communities been recorded from the local area?

NYD No Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

Threatened Ecological Communities

A Biodiversity Assessment undertaken for the Project (EHP, 2024) (**Attachment 3**) identified two Threatened Ecological Communities (TECs) listed under the EPBC Act which are likely to occur within 10 km of the PEA. These are:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered under the EPBC Act), and
- Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered under the EPBC Act)

Targeted surveys of the PEA did not identify these TECs. Vegetation at the PEA does not contain the required species or meet the condition thresholds that define *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* and *Natural Damp Grassland of the Victorian Coastal Plains*.

No Victorian significant ecological communities have been recorded with 10 km of the PEA. On-ground surveys confirmed that no State significant ecological communities are present within the PEA.

Threatened Flora

Review of the Victorian Biodiversity Atlas (VBA) undertaken as part of the Biodiversity Assessment (EHP, 2024) (**Attachment 3**) identified records of six EPBC Act listed flora species, and 45 FFG Act listed flora species within 10 km of the PEA. A review of the EPBC Protected Matters Search Tool found an additional 15 EPBC Act listed species demonstrating potential to occur within 10 km of the PEA.

In-situ surveys for the Project did not identify these species at the PEA. Significant historic clearing and modification, as well as subsequent revegetation of the PEA has limited the potential habitat available for significant flora species.

Threatened Fauna

A review of the VBA shows records of 22 EPBC Act listed species, and 23 FFG Act listed species within 10 km of the PEA. A search of the EPBC Protected Matters Search Tool found an additional 25 EPBC Act listed threatened species with the potential to occur within 10 km of the PEA, and 16 EPBC Act migratory species with the potential to occur within 10 km of the PEA (EHP, 2024).

A likelihood of occurrence assessment undertaken for these species during the Project's Biodiversity assessment (EHP, 2024) identified five of these species that demonstrated potential to occur within the PEA:

- Gang-gang Cockatoo
- Blue-winged Parrot
- Powerful Owl
- Sooty Owl
- Southern Toadlet.

Targeted assessments for these species observed Gang-gang Cockatoo within the broader Quarry, however, did not record this species at the PEA. No other species demonstrating potential to occur within 10 km of the PEA were identified.

If known, what threatening processes affecting these species or communities may be exacerbated by the project? (eg. loss or fragmentation of habitats) Please describe briefly.

Extraction operations at the PEA would require the staged clearing and removal of vegetation at the site, which predominantly consists of replanted vegetation, which includes 1.67 ha of native vegetation. This vegetation is considered to provide some foraging habitat value for five fauna species listed under the EPBC Act or FFG Act, however, is not considered critical habitat for any species. Better quality, more contiguous habitat is available in nearby areas.

Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?

~~NYD~~ No ~~Yes~~ If yes, please:

List these species/communities:

Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

Potential effects on threatened species and communities are outlined in the sections above – with the investigations concluding there is negligible potential for effects on these.

No migratory species were recorded within or around the PEA and there are no foreseeable impact pathways between the PEA and migratory species.

Other species of conservation significance and listed communities are also discussed on the preceding sections, with the investigations concluding development of the PEA is unlikely to affect any threatened or migratory species or species of conservation significance.

Is mitigation of potential effects on indigenous flora and fauna proposed?

~~NYD~~ ~~No~~ Yes If yes, please briefly describe.

Findings of the ecological assessments of the PEA have informed Holcim's approach to the extraction footprint.

Changes have been made to the PEA and pit shell design to avoid impacting old growth trees and vegetation outside of the north western corner of the PEA.

Native vegetation management and mitigation measures

The following management measures outlined in the Environment Management Plan will be adopted to avoid, manage or mitigate impacts to native vegetation:

- Native vegetation (areas of sensitivity) would be mapped on plans and any personnel working in close proximity to these areas would be provided with appropriate briefings and mapping
- Vegetation to be retained onsite that is in proximity to the extraction area (within 100 metres) would be protected with vegetation protection fencing (that does not restrict the movement of fauna throughout the landscape). These areas will be identified as No-Go Zone areas to avoid loss of vegetation cover, soil disturbance, compaction and weed infestation.;
- Tree Protection Zones (TPZs) would be implemented to prevent indirect losses of native vegetation to be retained during construction activities (DSE 2011).
- No extraction works or associated activities would take place within No-Go Zones and fences would not to be moved during the entire works period and would not be removed until all works have been completed.

- Specific areas designated for vehicle refuelling and maintenance, removal of waste and storage of materials and equipment would be located outside the No-Go Zones.;

Native fauna management and mitigation measures

The following management and mitigation measures are proposed in addition to those for native vegetation, to avoid, manage or mitigate impacts to native fauna:

- A staged removal of vegetation would be undertaken to reduce impacts to fauna, including planning for the removal of vegetation.
- Any vegetation removal will be outside of the breeding periods for native fauna likely to reside within the study area.
- Vegetation to be retained onsite that is in proximity to the extraction area (within 100 metres) would be protected with vegetation protection fencing (that does not restrict the movement of fauna throughout the landscape).
- Large logs or felled trees that contain hollows and placed in the surrounding revegetation areas would be retained, where feasible to provide habitat for ground-dwelling fauna in surrounding revegetation areas.

Other information/comments? (eg. accuracy of information)

Please refer to the following ecological assessment reports for the PEA for further details:

- Preliminary Ecological Assessment (EHP, 2023) (**Attachment 2**); and
- Biodiversity Assessment (EHP, 2024) (**Attachment 3**).

13. Water environments

Will the project require significant volumes of fresh water (eg. > 1 Gl/yr)?

~~NYD~~ No ~~Yes~~ If yes, indicate approximate volume and likely source.

The Project would not require significant volumes of fresh water.

Will the project discharge waste water or runoff to water environments?

~~NYD~~ No ~~Yes~~ If yes, specify types of discharges and which environments.

Waste water is not produced at the Quarry and would not be produced by the Project.

There is very little run off generated within the PEA. All surface water runoff at the Quarry is captured and managed via the existing pump and containment system in accordance with management measured outlined in the Quarry EMP. Captured water is stored in Quarry dams and is used for dust suppression, product blending and in rehabilitation activities. Where excess water is collected that is not required for these activities, Holcim discharges this water via a v notch weir to Kennedy Creek, in compliance with the operational requirements of the Quarry's discharge license (EPA license OL000000544). This discharge occurs as needed. Plate 6 details the water management system at the Quarry.

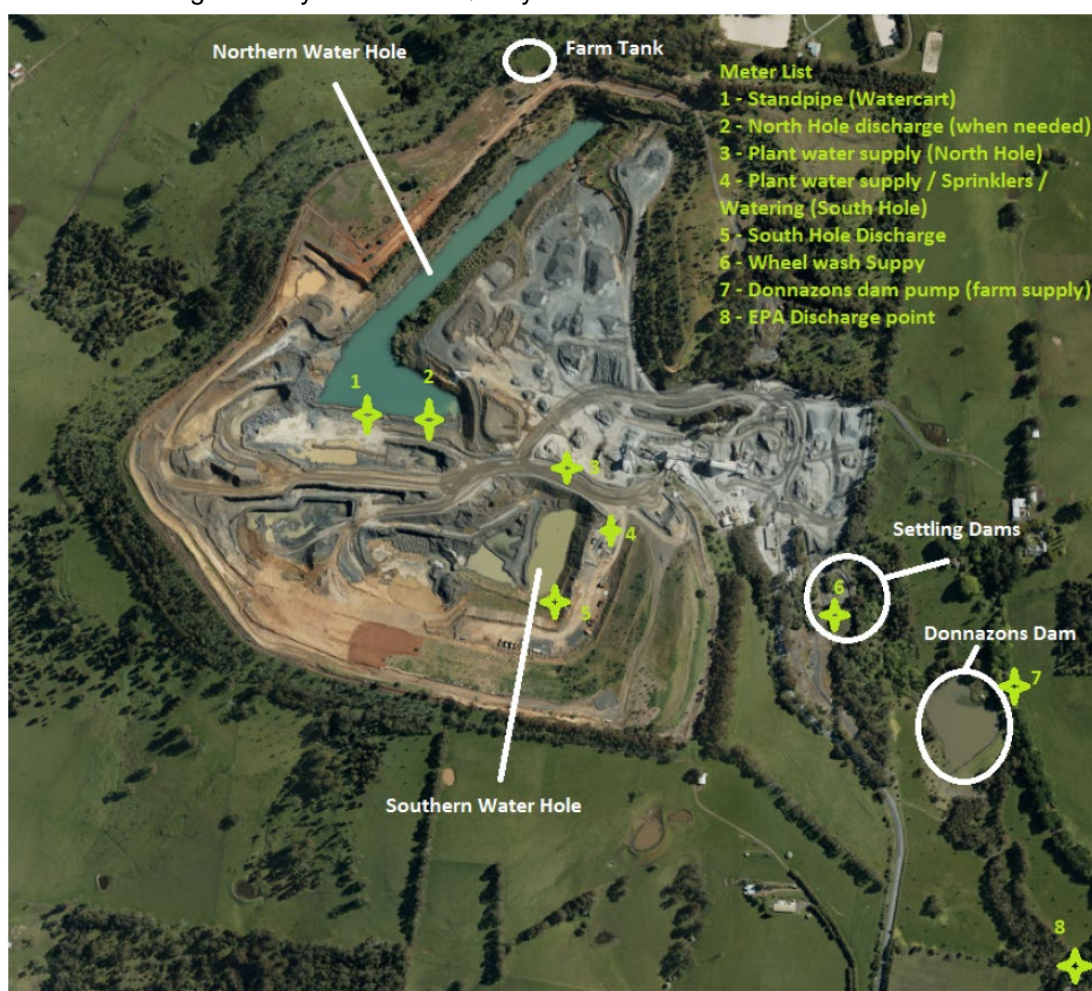


Plate 6: Water management system at the Quarry

Holcim will update the Quarry EMP to include the management of runoff at the PEA, which will be captured and managed via the Quarry's pump and containment system. Excess water would continue to be discharged only when required in accordance with EPA licence OL000000544. Holcim does not intend on modifying this licence for the Project

Are any waterways, wetlands, estuaries or marine environments likely to be affected?

~~NYD~~ No ~~Yes~~ If yes, specify which water environments, answer the following questions and attach any relevant details.

No waterways, wetlands, estuaries or marine environments are likely to be affected.

The Project will not impact on any onsite or offsite surface water flow paths. The nearest waterways are Kennedy Creek (to the south-east of the PEA) and Toomuc Creek (approximately 1 km to the west of the PEA) (see **Figure 2 of Attachment 1**).

As described in this section, surface runoff at the PEA will be collected and managed through the Quarry's existing pump and containment system, primarily for internal use in dust suppression, processing, and rehabilitation activities. Discharges of this water may occur, however only in volumes and within water quality parameters set by EPA License OL000000544, which are intended to prevent any broader impacts on the health or function of Kennedy Creek and interconnected waterways or downstream hydrological systems.

Are any of these water environments likely to support threatened or migratory species?

~~NYD~~ No ~~Yes~~ If yes, specify which water environments.

As described above, the Project would not impact water environments, including those supporting threatened or migratory species.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

~~NYD~~ No ~~Yes~~ If yes, please specify.

As described above, the Project would not affect wetlands. This includes wetlands listed under the Ramsar Convention and wetlands in 'A Directory of Important Wetlands in Australia'.

Could the project affect streamflows?

~~NYD~~ No ~~Yes~~ If yes, briefly describe implications for streamflows.

The Project would not affect streamflows, there are no flow paths at the PEA or in proximity that would be impacted by the Project.

Surface runoff at the PEA would be captured and managed via the existing Quarry pump and containment system. Infrequent discharges of this water may occur, however only in volumes and within water quality parameters set by EPA License OL000000544 which currently prevent broader impacts to the discharge point (Kennedy Creek) and interconnected waterways or downstream flows.

Waste water would not be produced by the Project.

Could regional groundwater resources be affected by the project?

~~NYD~~ No ~~Yes~~ If yes, describe in what way.

Regional groundwater resources would not be affected by the Project. Groundwater would flow towards the PEA throughout operation, during rehabilitation and post-rehabilitation (at the final landform). The groundwater quality beyond the pit cannot therefore be impacted or affect regional groundwater resources.

A groundwater impact assessment undertaken for the Project has identified the potential for impacts to groundwater levels, quality and flow to be negligible (MSH Groundwater, 2024) (**Attachment 4**). The assessment reviewed over 20 years of monitoring data for the Quarry and identified that extractive activities and historic groundwater abstraction during this period has not resulted in clearly discernible, measurable or long-term impacts to proximal groundwater reserves, or connected systems (i.e. local springs, consumptive use bores, groundwater dependant ecosystems etc.). The assessment found the Project would not change this outcome.

The hydrogeological setting at the Quarry is a localised groundwater flow system of limited vertical and lateral extent.

<p>The Project would quarry below the water table and create a hydraulic gradient towards the pit. The decline in groundwater levels away from the PEA (the cone of depression) was estimated to be local in extent and would not reach surrounding registered groundwater bores or springs. Regional groundwater resources were not found to be affected.</p> <p>The hydrogeological setting, proposed depth of extraction for the PEA, and proposed operational footprint aligns with current operations at the Quarry, which have resulted in negligible impacts to the regional groundwater system, as well as connected systems.</p>
<p>Could environmental values (beneficial uses) of water environments be affected?</p> <p><input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)</p> <p>The Project would produce a negligible potential for impacts to water environments or beneficial uses. As described above, surface water runoff would be collected and managed in accordance with the existing management system at the Quarry, such that there will be no impacts on the health or function of the discharge system (Kennedy Creek) as well as interconnected waterways or downstream hydrological systems.</p> <p>The Project's groundwater impact assessment reviewed over 20 years of monitoring data for the Quarry, and concluded that extractive activities and historic groundwater abstraction during this period has found no clearly discernible, measurable or long term impacts to proximal groundwater reserves, or connected systems (i.e. local springs, consumptive use bores, groundwater dependant ecosystems etc.). The assessment found the Project would not change this outcome.</p>
<p>Could aquatic, estuarine or marine ecosystems be affected by the project?</p> <p><input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p> <p>There is negligible potential for aquatic, estuarine or marine ecosystems to be affected by the Project.</p> <p>As described in this section, the Quarry's current water management process and EPA Licence OL000000544 will be applied for the collection and management of surface water runoff at the Project, mitigating the potential for offsite flow or water quality impacts to local ecosystems or downstream estuarine/marine systems.</p> <p>There are no other processes by which the Project could impact aquatic, estuarine or marine ecosystems.</p>
<p>Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.</p> <p>There is negligible potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term. As described in this section, the Project would not impact regional groundwater systems, and the Quarry's current water management process and EPA Licence OL000000544 will be applied to the Project to mitigate the potential for offsite flow or water quality impacts to local hydrological systems or downstream estuarine/marine systems.</p>
<p>Is mitigation of potential effects on water environments proposed?</p> <p><input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Section 2.4 of the Quarry EMP defines surface water, drainage, and groundwater management and monitoring requirements for the Quarry. No further mitigation measures are proposed beyond those in the current Environmental Management Plan which will be extended to include the PEA site.</p>

Surface Water

The Quarry's current surface water management practices and process will be maintained which retains all surface water on site. If required, any additional management and mitigation measures will be considered to ensure receiving environments are not impacted.

Any surface water runoff from the PEA would be managed in accordance with the Quarry's discharge licence (EPA licence OL000000544). Holcim does not intend on modifying this licence for the Project.

Groundwater

Holcim does not extract groundwater for any use at this site.

There are local registered groundwater users within proximity to the quarry. The site has an Existing approved Groundwater Management Plan which will be extended to cover the PEA. The plan's purpose is to assess any long term trends in groundwater levels. This plan includes a series of groundwater management measures including assessment of beneficial uses of groundwater in accordance with EPA .

Other information/comments? (eg. accuracy of information)

The assessment of potential effects on water environments presented in the preceding sections has been informed by technical studies (see Groundwater Impact Assessment report for the PEA (MSH, 2024) at **Attachment 4**) and review of existing work practices and the EMP for the quarry. The accuracy of information in relation to water environments is robust and suitably detailed for reaching the conclusions presented.

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

~~No~~ Yes If yes, please attach.

A Preliminary Landscape and Visual Impact Assessment (PLVIA) has been prepared for the Project (Landform Architects, 2024) (**Attachment 5**). The assessment identified the significance of the change in landscape and visual impacts associated with the development of the Project.

Findings of the PLVIA determined that visual impacts associated with the Project are negligible, as existing vegetation and topography screens views from dwellings, roads or other key viewpoint locations in proximity to the site. The Project would modify the landform at the PEA, however, is located within proximity to a major growth corridor and within a landscape consisting of many modifications and instances of built form. Impacts to landscape values are negligible.

Is the project to be located either within or near an area that is:

Subject to a Landscape Significance Overlay or Environmental Significance Overlay?

~~NYD~~ ~~No~~ Yes If yes, provide plan showing footprint relative to overlay.

The Project is located within the Environmental Significance Overlay – Schedule 1 (ESO1 – Northern Hills) (**Figure 5 of Attachment 1**).

Identified as of regional or State significance in a reputable study of landscape values?

~~NYD~~ No ~~Yes~~ If yes, please specify.

The Project is not located within or near an area of regional or State significance as identified in reputable studies of landscape values.

Within or adjoining land reserved under the *National Parks Act 1975* ?

~~NYD~~ No ~~Yes~~ If yes, please specify.

The Project is not located within or adjacent to land reserved under the National Parks Act 1975.

Within or adjoining other public land used for conservation or recreational purposes ?

~~NYD~~ ~~No~~ Yes If yes, please specify.

The PEA is entirely located on Holcim-owned freehold land. Agricultural land located immediately to the west of the PEA is also owned by Holcim and provides a buffer between the Quarry and neighbouring sensitive receptors. Existing Quarry operations are located immediately to the east and south of the PEA.

The Pakenham Pony Club is located north of the PEA, on a triangular parcel of land covering approximately 18.58 ha and immediately adjoining the northern boundary of Holcim's land (**Figure 3**). Cardinia Shire owns and leases this land to the Pakenham Pony Club to enable its use for public recreational purposes, providing for equestrian activities that are accessible to the public. The Project will decrease the separation between working faces of the quarry and the Pakenham Pony Club, however, will not negatively impact the Pony Club. The Quarry and the Pony Club have co-existed since the establishment of the Pony Club, and clear schedules have been established to ensure operations at the Quarry (such as blasting) are timed such that they do not interfere with the activities of the Pony Club.

Given an extensive history of co-existence between the Quarry and the Pakenham Pony Club, and that the Project would conform to the existing operational schedules at the Quarry; no additional impacts to recreational activities at the Pakenham Pony Club are expected.

Throughout development of the Project, Holcim have regularly engaged with the Pakenham Pony Club, with consultation to date indicating that the club is supportive of the Project and does not expect extraction at the PEA to interfere with recreational activities. Holcim is committed to maintaining a positive working relationship with the Pakenham Pony Club and will continue to conduct regular engagement with the club throughout all phases of the Project.

Is any clearing vegetation or alteration of landforms likely to affect landscape values?

~~NYD~~ ~~No~~ Yes If yes, please briefly describe.

The Project will require vegetation clearing and would alter the landform at the PEA, however this would not affect landscape values of the surrounding area.

The PEA is well screened by local topography and retained vegetation, and located within a landscape that includes many instances of built form and other modifications through transitional change in Melbourne's urban fringe. Stockpiles and processing infrastructure at the Quarry that would be used by the Project have also been sited and designed so that they do not adversely impact the area's diverse and interesting landscape.

When viewed from the surrounding region, the Project would be a background element and oblique to views that also include many instances of built form and other modifications characteristic of urban fringe areas.

Is there a potential for effects on landscape values of regional or State importance?

~~NYD~~ No ~~Yes~~ Please briefly explain response.

A PLVIA undertaken for the Project did not identify a potential for effects on landscape values of regional or State importance (Landform Architects, 2024) (**Attachment 5**).

Is mitigation of potential landscape effects proposed?

~~NYD~~ No ~~Yes~~ If yes, please briefly describe.

The Project will be obscured by local topography and retained vegetation screens, within a landscape that includes a major growth corridor and many instances of built form and other modifications through transitional change. A PLVIA for the Project did not consider additional mitigation to be required (Landform Architects, 2024).

A Rehabilitation Plan detailing planting proposed for the PEA at the conclusion of extractive activities will be prepared for the Work Plan Variation. In accordance with the *Preparation of Rehabilitation Plans – Guideline for Extractive Industry Projects* (DJPR, 2020) the Rehabilitation Plan will include:

- concepts and proposal for the end utilisation of the proposed quarry site, including progressive rehabilitation, stabilisation and revegetation of extraction areas
- waste disposal areas, stockpile areas, the use of water on the site, dams and other land affected by the operations
- proposals for landscaping to minimise the visual impact of the quarry site
- proposals for the final rehabilitation and closure of the site, including the security of the site and the removal of plant and equipment, taking into account any potential long-term degradation of the environment

Other information/comments? (eg. accuracy of information)

Please refer to the Preliminary Landscape and Visual Assessment report for the PEA (Landform Architects, 2024) for further details (**Attachment 5**).

Note: A preliminary landscape assessment is a specific requirement for a referral of a wind energy facility. This should provide a description of:

- The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;
- The location of nearby dwellings, townships, recreation areas, major roads, above-ground utilities, tourist routes and walking tracks;

- Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.

Soils

Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?

~~NYD~~ No ~~Yes~~ If yes, please briefly describe.

Detailed geotechnical assessments are currently being undertaken to inform design of the Project, including the bench / batter profiles required to avoid the potential for land instability or erosion at the PEA. Product testing results for the PEA have indicated a negligible potential for acid sulphate soils to be present.

Section 2.4 and 2.5 of the Quarry EMP will be updated to include the management of potential land instability or erosion risks at the PEA. Internal pit slopes at the PEA will undergo regular visual inspections in accordance with monitoring schedules outlined in the EMP, as well as following blasting activities. Visual inspections will assess any change in slope conditions such as cracking, heaving or settlement of the pit walls or floor, as well as increased areas of seepage or any other expected movement. Progressive rehabilitation of pit slopes will include construction of internal and surface drainage, vegetation establishment and fill compaction.

Areas susceptible to erosion will also be subjected to erosion control techniques, dependent on site conditions. An Erosion Sediment Control Plan (ESCP) will be prepared and implemented for the PEA prior to the commencement of works.

Are there geotechnical hazards that may either affect the project or be affected by it?

~~NYD~~ No ~~Yes~~ If yes, please briefly describe.

The nature of the underlying geology at the Quarry (weathered and fresh basalt) limits the potential for any instability in these materials. An extensive geotechnical drill program conducted for the Project in April 2024 determined that the geological conditions and therefore potential for geotechnical hazards at the PEA correspond with those of the existing Quarry. Extraction operations at the PEA are not expected to produce material changes to the risk of geotechnical hazards.

Additional geotechnical assessment of the PEA is currently being undertaken by Holcim, to identify the operating conditions, required controls, closure requirements and expected monitoring programs required for the management of geotechnical hazards if identified to occur during extraction at the site.

Following the geotechnical assessment, Holcim will commence engagement with the Earth Resources Regulator (ERR) prior to the submission of a Work Plan Variation for the Project. As the PEA is located within the current WA 174 boundary, Holcim will update the Quarry's EMP and Slope Stability Management Plan to capture the management of potential geotechnical hazards at the PEA.

Other information/comments? (eg. accuracy of information)

An Erosion and Sedimentation Control Plan (ESCP) and Rehabilitation Plan will also be prepared for the Project, that will outline management measures to ensure the risk of impacts to local groundwater and from surface water runoff is minimised as far as reasonably practicable.

15. Social environments

Is the project likely to generate significant volumes of road traffic, during construction or operation?

~~NYD~~ No ~~Yes~~ If yes, provide estimate of traffic volume(s) if practicable. The Project will not result in additional traffic accessing or departing the Quarry. Therefore, there is negligible potential for the Project to generate significant volumes of road traffic.

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?

~~NYD~~ No ~~Yes~~ If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.

As noted in Section 11, technical assessments have been completed to identify and determine potential environmental impacts associated with the Project. The Project design will result in extraction activities being conducted closer to receptors to the northeast of the existing Quarry pit, however direct or in-direct exposure to the community from dust or noise emissions is not expected over the short or long term.

The PEA is within the existing WA 174 boundary and operations will predominantly be conducted within a 500 m setback from the nearest sensitive receptor (**Figure 6 of Attachment 1**). One receptor (an occupied dwelling) is located within 430 m of the PEA; however, Holcim will mitigate the potential for indirect impacts such as air and noise emissions to this dwelling (and proximal receptors) through the implementation of a range of strict controls, appropriate industry standard design, mitigation methods and compliance monitoring. The Project would not result in changes to existing operating hours, blasting rates or schedules, extraction operations, processing or transport arrangements at the Quarry.

Holcim will implement management measures for potential amenity impacts for the Project as they have been implemented for the Quarry to produce a negligible potential for amenity impacts, as detailed below.

Dust Emissions

An Air Quality Assessment has been conducted for the Project. The assessment considered potential sources for dust emissions to be the removal of topsoil and overburden, extraction activities (conventional drilling and blasting), as well as transportation of blasted rock (Katestone, 2024) (**Attachment 6**). The assessment concluded that the Project would not result in significant increases in dust concentrations or nuisance impacts at sensitive receptor locations.

A conservative approach was taken for air quality modelling for the Project, which identified negligible changes to incremental and cumulative dust emissions associated with the removal of topsoil and overburden, and extraction of basalt. Air quality modelling identified minor increases to the total rate of Total Suspended Particles (TSP), PM10 and PM2.5 emissions by 8%, 5%, and 4% respectively, which were attributed primarily to the greater travel distance for the haul of basalt from the PEA to the Quarry processing plant. Despite these minor increases, the predicted maximum incremental dust concentrations at receptors closest to the PEA remain below relevant air quality criteria.

In accordance with the *Recommended Buffer Distances for Industrial Residual Air Emissions* guidelines, Project activities with the potential to produce air quality emissions that could affect proximal sensitive receptors will not be conducted within the 500 m setback buffer at the PEA where possible. Potential air quality impacts to the once receptor located approximately 430 m from the PEA would be managed in accordance with Section 2.1 the Quarry EMP which defines the management and monitoring requirements for potential air quality impacts and would be updated to apply to the Project. Mitigation measures implemented to manage minor increases for dust emissions associated with basalt haulage will include watering of haul roads, management of load sizes and strict adherence to designated speed limits to minimise the potential for spillages. These measures are expected to manage the risks for dust emission impacts to sensitive receptors as far as reasonably practicable.

Noise Emissions

Activities (with the exception of blasting) under the Project would adhere to management measures for noise emissions as outlined in the Quarry's Noise Management Plan and EMP, which specify that noise emanating from operations at the Quarry must not exceed 45dB(A)

LAeq when measured at the nearest prescribed noise monitoring locations within Holcim's freehold land boundary. Holcim will update these management plans to include the Project.

Relative to blasting, the Project will adhere to scheduled hours for blasting and operations which are currently implemented at the Quarry, as well as comply with ERR environmental guideline limits in strict accordance with the Quarry's Blast Management Plan (WA5.4.067.V.PAK) which will be updated to include the Project.

A Noise and Vibration Impact Assessment will be undertaken to inform the Work Plan Variation for the Project and confirm the Project's potential impact (if any) to sensitive receptors. Holcim will conform to existing operational schedules and implement management measures currently administered for the Quarry to minimise the noise-related impacts to sensitive receptors proximal to the PEA as far as reasonably practicable. A 500 m setback buffer has also been established for operations at the PEA and will apply to all neighbouring dwellings. One dwelling is located approximately 430 m from the PEA, and Holcim will implement strict management measures to mitigate the potential for noise impacts on this receptor. An audit of the Quarry conducted in 2021 identified sustained compliance related to noise emissions since 2009, with no noise-related complaints during this time.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

~~NYD~~ No ~~Yes~~ If yes, briefly describe the hazards and possible implications.

Please refer to responses above.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

~~NYD~~ No ~~Yes~~ If yes, briefly describe potential effects.

The Project does not displace residence or result in severance of residential access.

Are non-residential land use activities likely to be displaced as a result of the project?

~~NYD~~ No ~~Yes~~ If yes, briefly describe the likely effects.

No non-residential land use activities will be displaced because of the Project. The PEA is within the approved boundary for WA 174 and is designated for extractive activities.

Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?

~~NYD~~ No ~~Yes~~ If yes, briefly describe the potential effects.

The Project would not result in changes in non-residential land use activities or have potential adverse effects on local residents/communities, social groups or industries.

Is mitigation of potential social effects proposed?

~~NYD~~ No ~~Yes~~ If yes, please briefly describe.

The proposed extension is not expected to result in impacts at surrounding sensitive receptor locations. Holcim will apply the same proven management and monitoring requirements implemented for the existing Quarry to the PEA for the Project.

Dust Mitigation

Impacts from the proposed extension can be adequately managed using the continuation of the operation and management measures that are already in place in the Quarry EMP.

These include watering on internal roads to minimise dust, wetting the active quarry face during the extraction and removal of basalt, the enclosure of transfers at the processing plant as well as water sprays, wet suppression and dust collectors (amongst other measures) during crushing, screen and transfers of extracted material between processing.

Noise Monitoring

All activities within the PEA will adhere to management measures for noise emissions as outlined in the Quarry's Noise Management Plan and EMP, which specify that noise emanating from operations at the Quarry must not exceed 45dB(A) LAeq when measured at the nearest prescribed noise monitoring locations within Holcim's freehold land boundary. Holcim will update these management plans to include the PEA.

Blasting activities will adhere to permitted hours for blasting which are currently implemented at the Quarry, and as well as comply with ERR environmental guideline limits in strict accordance with the Quarry's Blast Management Plan (WA5.4.067.V.PAK) which will be updated to include the Project.

Community Engagement

Holcim have commenced a regular program of engagement for the Project, and has consulted with key stakeholders including Council, the Pakenham Pony Club, the local community and other stakeholders to the Quarry and the Project. A Community and Stakeholder Engagement Plan (CSEP) is currently being prepared that will build on existing engagement undertaken for the Project and the Quarry. Further information is detailed in Section 20.

Other information/comments? (eg. accuracy of information)

Please refer to the Project's Air Quality Assessment for further details (Katestone, 2024) (**Attachment 6**).

Cultural heritage**Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?**

~~No~~ If no, list any organisations that it is proposed to consult.

Yes If yes, list the organisations so far consulted.

The Registered Aboriginal Party (RAP) for the region that encompasses the PEA is Bunurong Land Council Aboriginal Corporation (BLCAC). The boundary between the BLCAC and Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) was redrawn and approved in June 2021 by the Victorian Heritage Council. Prior to this change, WWCHAC were the RAP for the area.

In accordance with requirements under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, Holcim consulted with the WWCHAC for the previous application to extend the Quarry's extraction limit under the EE Act (see **Section 3**). This consultation culminated in a Consent to Disturb being issued for the Quarry on 17 May 2007, and Holcim continue to engage with WWCHAC for this consent. All other activities beyond those explicitly mentioned in the consent require the involvement and consultation of BLCAC.

Holcim will engage with BLCAC following submission of the Project referral under the EE Act.

What investigations of cultural heritage in the project area have been done?

(attach details of method and results of any surveys for the project & describe their accuracy)

A Cultural Heritage Due Diligence assessment was prepared by Umwelt for the Project, to outline the potential requirements relating to the protection of heritage values at the PEA under the AH Act and Heritage Act. The assessment reviewed seven previous Cultural Heritage Assessments undertaken for the Quarry, including site surveys, test / salvage excavations and compliance surveys dating from 2003 to 2015, to provide an assessment on the expected archaeological and cultural heritage values of the PEA (Umwelt, 2023) (**Attachment 7**).

The assessment found that the Project is considered a 'high impact activity' under the AH Act, however a mandatory CHMP is not required as the PEA is not located within an area of cultural heritage sensitivity. Umwelt considered that previous archaeological investigations for the Quarry, as well as registered Aboriginal places in proximity to the PEA, indicated a potential for Aboriginal heritage values of the site. Review of Victorian heritage databases did not identify any non-

Aboriginal cultural heritage ('historical') sites at the PEA, and there is no requirement for statutory approvals under the Heritage Act.

A Letter of Cultural Heritage Advice was subsequently prepared for the Project to assess potential Aboriginal heritage values at the PEA (Umwelt, 2024) (**Attachment 8**). A site assessment was conducted to confirm the level of ground disturbance at the PEA and whether the Project could pose a significant risk to heritage values. Review and re-evaluation of the statutory requirements under Victorian heritage protection legislation was also provided in support of the existing due diligence assessment.

Assessment of the PEA showed clear and significant landform and vegetation stripping, cutting and filling of the landscape with overburden. Use of auger probes did not identify any natural landform elements, instead indicating a relatively unconsolidated but compacted substrate composed of mining waste, natural redeposited fill and stabilised by modern revegetation. These changes to the land are considered to be an indication of significant ground disturbances as defined in the *Aboriginal Heritage Regulations 2018*. Although there is a small possibility for there to be Aboriginal cultural heritage artefacts or historic artefacts within the redeposited natural fill, these would be completely displaced from both their place of origin and from one another, and any archaeological investigation of the 30 m deep overburden is unlikely to yield any results or find any potential artefacts.

The Letter of Cultural Heritage Advice concluded that the PEA has been subject to significant historic ground disturbance and given no evidence of Aboriginal cultural heritage was identified, it is unlikely that any Aboriginal or Historic cultural heritage is present at the site.

Is any Aboriginal cultural heritage known from the project area?

~~NYD~~ No ~~Yes~~ If yes, briefly describe:

- Any sites listed on the AAV Site Register
- Sites or areas of sensitivity recorded in recent surveys from the project site or nearby Sites or areas of sensitivity identified by representatives of Indigenous organisations

Aboriginal cultural heritage assessments of the PEA, including a Due Diligence Assessment (Umwelt, 2023) and a Letter of Cultural Heritage Advice (Umwelt, 2024) determined the PEA has been subject to significant ground disturbance, where no Aboriginal cultural heritage or historic cultural heritage within the PEA were identified or expected to occur. Both assessments reviewed requirements of the AH Act, *Aboriginal Heritage Regulations 2018*, Heritage Act and *Heritage Regulations 2017* in light of these findings, and concluded that there are no statutory requirements for the Project.

Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* within the project area?

~~NYD~~ No ~~Yes~~ If yes, please list.

There are no listed cultural heritage places at the PEA.

Is mitigation of potential cultural heritage effects proposed?

~~NYD~~ No ~~Yes~~ If yes, please briefly describe.

Appendix 14 of the Quarry EMP defines a Chance Finds Procedure, which outlines measures for the discovery of human remains or other Aboriginal cultural heritage at the Quarry. Holcim will update the EMP to include the Project and would implement these measures in the unlikely event that Aboriginal cultural heritage values are identified at the PEA.

Other information/comments? (eg. accuracy of information)

Please refer to the following cultural heritage assessment reports for the PEA for further details:

- Cultural Heritage Due Diligence Assessment (Umwelt, 2023) (**Attachment 7**); and
- Site Assessment and Letter of Cultural Heritage Advice (Umwelt, 2024) (**Attachment 8**).

16. Energy, wastes & greenhouse gas emissions

What are the main sources of energy that the project facility would consume/generate?

- Electricity network. If possible, estimate power requirement/output
- ~~Natural gas network. If possible, estimate gas requirement/output~~
- ~~Generated on-site. If possible, estimate power capacity/output~~
- ~~Other. Please describe.~~

Please add any relevant additional information.

The Project would involve the extraction of basalt at the PEA concurrent to extraction operations at the existing Quarry. As no changes to the operational output are proposed, the total power requirement for extraction at the PEA and Quarry would generally align with current electricity requirements for the Quarry (approximately 3,059 Mwh/annum).

What are the main forms of waste that would be generated by the project facility?

- ~~Wastewater. Describe briefly.~~
- ~~Solid chemical wastes. Describe briefly.~~
- Excavated material. Describe briefly.
- ~~Other. Describe briefly.~~

Please provide relevant further information, including proposed management of wastes.

The main forms of waste generated by the Project would be excavated waste material consisting of overburden, waste rock and weathered basalt that has no commercial market value. Holcim will either utilise this material for the rehabilitation of disturbed areas at the Quarry (i.e. for pit faces, drainage control features, or to maintain pit face stability), or stockpile excavated waste for later use during rehabilitation activities at the PEA. Excavated material and overburden stockpiles will be maintained at the Quarry, in accordance with management and monitoring controls outlined in Section 2.12 the Quarry EMP. Holcim will update the EMP to include material excavated by the Project.

What level of greenhouse gas emissions is expected to result directly from operation of the project facility?

- Less than 50,000 tonnes of CO₂ equivalent per annum
- ~~Between 50,000 and 100,000 tonnes of CO₂ equivalent per annum~~
- ~~Between 100,000 and 200,000 tonnes of CO₂ equivalent per annum~~
- ~~More than 200,000 tonnes of CO₂ equivalent per annum~~

Please add any relevant additional information, including any identified mitigation options.

Current Quarry operations emit approximately 4,900 tonnes of CO₂-e per annum. CO₂-e emissions for the Project are expected to be approximately equal or lower annually.

17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

- No ~~Yes~~ If yes, briefly describe.

18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)

- X Siting: Please describe briefly
 X Design: Please describe briefly
 X Environmental management: Please describe briefly.
 ~~Other: Please describe briefly~~

Add any relevant additional information.

Holcim pursued the PEA following identification of a considerable basalt resource that would enable an extension to the operational life of the Quarry. Extraction of the PEA has been pursued at this site is entirely located within the existing WA 174 boundary and contains a fresh basalt resource, estimated at 7-9 Mt, located beneath 30 m of overburden and weathered rock.

Significant disturbance of the PEA during historic overburden storage activities has stripped the natural stratification at the PEA site and resulted in the current, highly modified landform. The PEA has been progressively rehabilitated since overburden storage activities originally removed the majority of native vegetation at the site. Development of the Project is therefore not expected to result in significant impacts to the current environment at the PEA.

Mitigation and management measures identified and discussed throughout this referral have been selected following technical assessment of the PEA site. The Project will also implement mitigation measures detailed in the Quarry EMP, providing operational, environmental, cultural, rehabilitation and monitoring requirements which form an integral part of the Holcim's overarching Safety Health and Environment Management system. Mitigation and management measures will continue to be refined as assessments continue for the Project's Work Plan Variation.

The current Quarry EMP is provided as **Attachment 9**.

The proposed siting, design and mitigation measures detailed in this referral are therefore expected to minimise the potential for impacts to sensitive receptors, heritage and environmental values as far as reasonably practicable for the Project.

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

~~NYD~~ X No ~~Yes~~ If yes, briefly describe.

Potential cumulative effects associated with the operations of the existing quarry coinciding with operations of the PEA have been considered as appropriate in the sections above of this referral form, and in the relevant technical studies that have been prepared to support this referral.

It is predicted that extraction operations at the PEA would enable the Quarry to continue operations for another 6-8 years while maintaining the current operational output of approximately 1 Mt per annum. Basalt extracted from the PEA would use existing processing and transport infrastructure at the Quarry, and would not require changes to the existing operations at the Quarry, including:

- Processing operations;
- The locations of existing ancillary infrastructure (i.e. haul roads);
- The annual extraction rate;
- The Quarry's hours of operation;
- Traffic routes entering and exiting the Quarry; and
- The approved Work Authority 174 Boundary

Extraction operations at the PEA would enable continued supply of a high-quality basalt resource for a range of construction and industrial applications. An extension to the operational life of the Quarry would also ensure continued direct and ongoing employment opportunities to the local region, as well as significant economic multiplier effects in the local and State economies.

A review of existing and proposed (to the extent information is publicly available) activities around the Quarry did not identify any projects or activities with potential to generate cumulative effects.

20. Investigation program

Study program

Have any environmental studies not referred to above been conducted for the project?

X No Yes If yes, please list here and attach if relevant.

Has a program for future environmental studies been developed?

No X Yes If yes, briefly describe.

Technical assessments undertaken in support of this referral will also be used to support the preparation of a Work Plan Variation, planning permit application and other relevant documentation (such as management plans) for the Project.

The following additional technical studies will also be undertaken for the Project to support the work plan variation and planning permit application:

- Noise and Vibration Assessment;
- Blast Impact Assessment;
- Surface Water Assessment; and
- Community and Stakeholder Engagement Plan.

Consultation program

Has a consultation program conducted to date for the project?

No X Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

An Environment Review Committee (ERC) was formed by Cardinia Shire Council in 2005 for the Quarry, comprising of representatives of key stakeholders including Holcim, Council, ERR, relevant state government agencies, and community representatives. The ERC is independently chaired and follows procedures established by Council.

The community consultation and engagement program for the Project commenced in December 2023 and has progressively delivered Project updates to a number of key stakeholders during Project development.

- December 2023
 - Meetings with ERR and DEECA to identify any key issues arising from operational activities, suggestions for mitigation and enhancement measures and to share information regarding future planning.
- January 2024
 - The Project was introduced to DTP IAU to seek initial guidance from the authority to help facilitate the requirement for EES Referral.
- February 2024
 - Face to face meetings with key community members and neighbours to inform them of the Project.
 - February ERC meeting introduced the Project to ERC members. Discussions of upcoming resource assessment program.
 - Phone calls were made to ERC members not present at ERC meeting.
 - The Quarry webpage was updated with Project information.

- Project information sheet and FAQs document sent by mail or letter box drop to nearby neighbours of the Quarry with a brief update on an investigative drilling program for the Project.
- Letter box/door knock for residents on Huxtable and Mt Shamrock road. Others by post.
- May 2024
 - Meeting with ERR to update on technical assessments and resource assessment outcomes for the Project.
 - A site tour with ERC members which provided the latest updates on the Project and discussed technical assessments and status of a draft EES referral. Approximately 18 members of the local community (residents of dwellings located within 1 km of the PEA, mainly from Huxtable Rd and the Toomuc Valley) and the ERC were in attendance.
- August 2024
 - Meeting with DTP IAU to provide an update on the progress of the EES referral and the outcomes of technical assessment undertaken for the Project.
 - Huxtable Road Reserve committee (Pakenham Pony Club) engagement session
 - Scheduled ERC meeting

Throughout development of the Project, Holcim have continually engaged and provided Project updates to the following key stakeholders:

- Residents on Holcim’s freehold land surrounding the Quarry;
- Immediate neighbours (within 1 km of the PEA);
- Local environmental groups;
- Pakenham Pony Club;
- Cardinia Shire Council;
- ERR;
- DTP IAU;
- DEECA; and
- ERC.

To date, feedback received from the local community for the Project has generally been neutral.

Has a program for future consultation been developed?

~~NYD~~ X No ~~Yes~~ If yes, briefly describe.

Holcim considers it important that trusting relationships are developed between the people on the ground who are involved in the Quarry on a day-to-day basis, and the stakeholders that are part of, and connected to, the local community and region.

To date, Holcim’s consultation approach with stakeholders has prioritised proactive and genuine engagement. Holcim have built trust in the community by being transparent, flexible and responsive. Holcim will continue engagement with key stakeholders throughout the planning approvals phase right through the life of the Project, in accordance with a program for engagement activities that will be detailed in a CSEP currently in development for the Project.

Authorised person for proponent:

I, Matthew Dodd, Project Manager, confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature _____  _____

Date 6/12/2024

Person who prepared this referral:

I, Joseph Thom, Principal Environmental Planner,

confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature  _____

Date: 6/12/2024