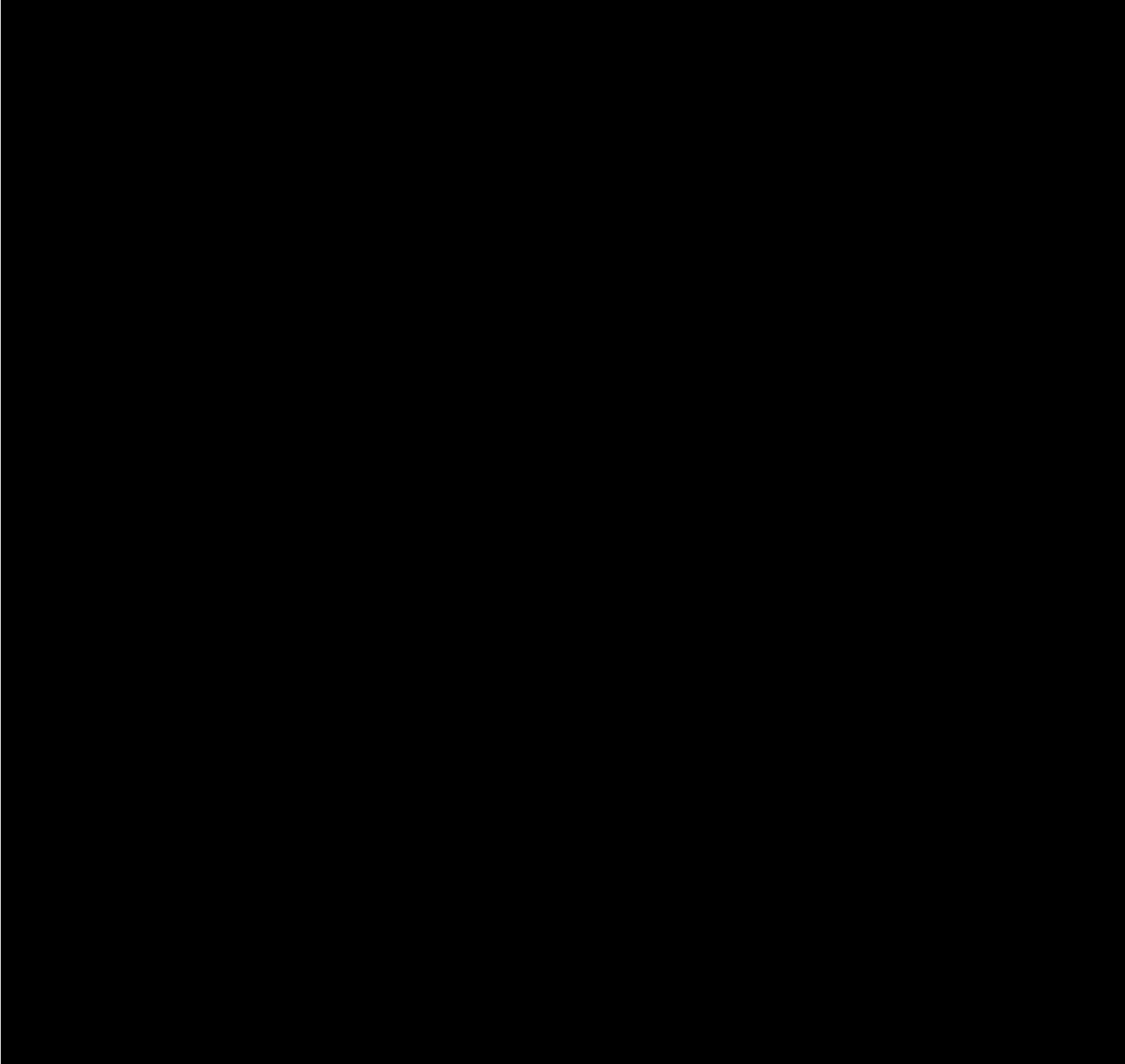


ATTACHMENT 8 - LICENCE AMENDMENT SUPPORTING INFORMATION

DWER licence L7975/2004/4, Tabba Tabba hardrock
quarry

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01 May 2024



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1 INTRODUCTION

Boral Resources (WA) Ltd (Boral) operates the Tabba Tabba Hardrock Quarry under Department of Water and Environmental Regulation (DWER) Licence L7975/2004/4. Licence L7975/2004/4 is due to expire on 19 October 2024. As such, Boral is seeking to renew and amend the licence in accordance with the amendments outlined in this report and the DWER Application form: *Works Approval / Licence / Renewal / Amendment / Registration*.

Table 1 outlines the proposed changes requested as part of this licence amendment. Information relating to the environmental management and impacts of the proposed renewal and amendment is provided in Section 4.

1.1 Project background

1.1.1 Location

Boral quarries, Tabba Tabba is located along the Great Northern Highway, 40 kilometres (km) east of Port Hedland (Figure 1). The quarry operations occur within live mining tenements G45/344, L45/197 and M45/1284. The proposed prescribed premises boundary is aligned with these mining tenements boundaries, as shown in Figure 2.

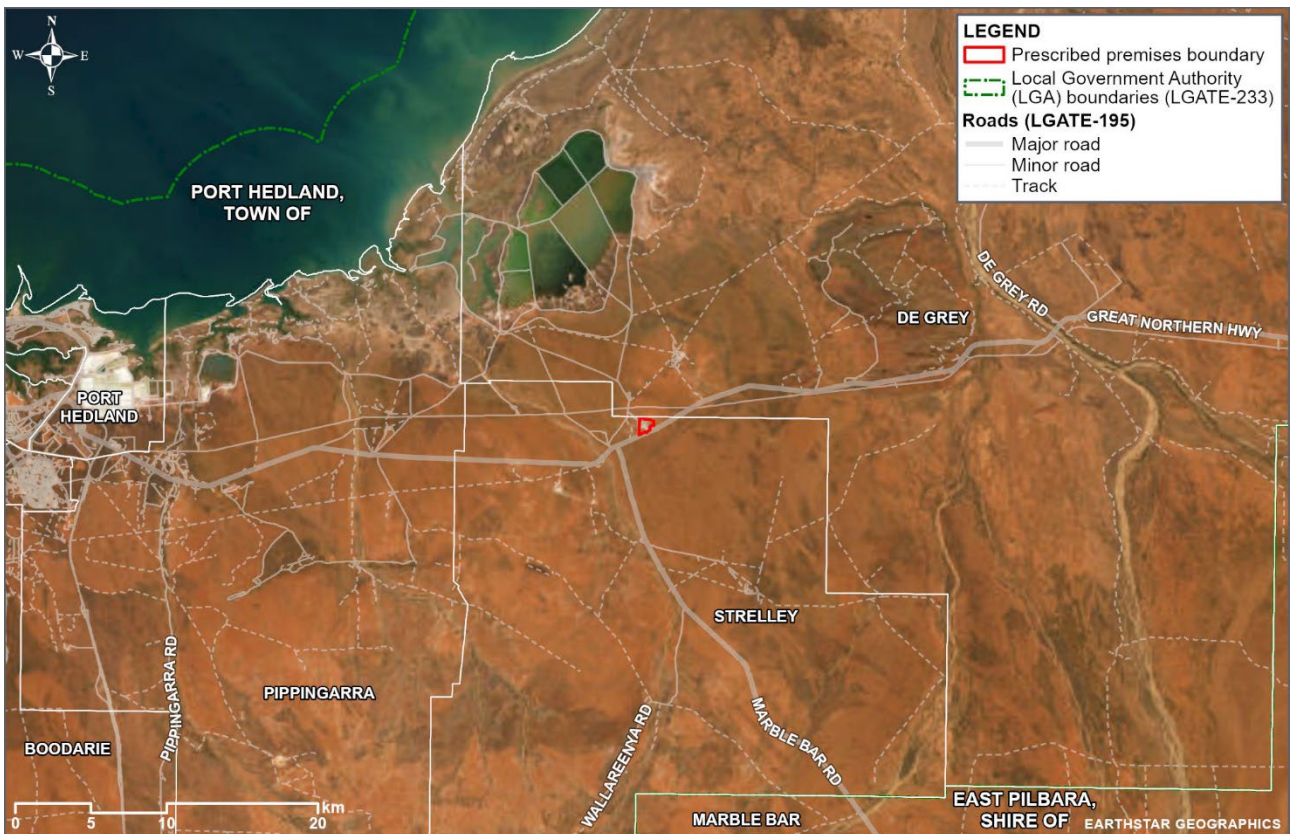


Figure 1: Prescribed premises location

1.1.2 Existing approvals

Boral currently operates the site under the following existing approvals and documents:

- Mining Proposal and Mine Closure Plan (Reg ID: 85255), which was approved by the Department of Energy, Mines, Industry Regulation and Safety in 2022. The approved Mining Proposal (Reg ID: 85255) amalgamated the existing tenements into tenement M 45/1284, resulting in a slight increase in the tenement boundary. The proposed prescribed premises boundary in this report reflects this change

- DWER licence L7975/2004/4 (as outlined in this application to renew and amend L7975/2004/4)
- Section 18 Consent to disturb an Aboriginal Cultural Heritage site under the *Aboriginal Heritage Act 1972*.

A clearing permit under Part V of the *Environmental Protection Act 1986* is not required for the site as the site is not located within an Environmentally Sensitive Area and the following clearing exemption is applicable:

- Regulation 5, Item 20 Clearing resulting from low impact or other mineral or petroleum activities. An exemption for other mineral or petroleum activities is defined in clause 2(2) of Schedule 1 and allows clearing of up to ten hectares per financial year for clearing authorised under the *Mining Act 1978* and the various petroleum Acts in an authority area.

1.1.3 Summary of site operations

Mining and processing operations at the Boral quarries, Tabba Tabba are typical to that of hardrock quarries with products including aggregate, road construction materials and armour rock processed in accordance with DWER licence no. 7975/2004/4. The hardrock resource is to be used to provide a long-term supply of material to the Port Hedland area for construction, road and rail facilities.

The quarry operates on a campaign basis and was in a period of maintenance between 1993 to 2007 and 2009 to 2012. Excavation activities have occurred intermittently at the site since 2007. Operations are shown in Figure 2 and summarised below:

- Up to 1.2 millions of tonnes per annum (mtpa) of hardrock is excavated from the open pit per annum, in accordance with the approved Mining Proposal.
- Excavated hardrock is then crushed and processed through a mobile plant that is located on M45/1284.
- Stockpiles are located to the south of the pit, within mining tenements M45/1284.

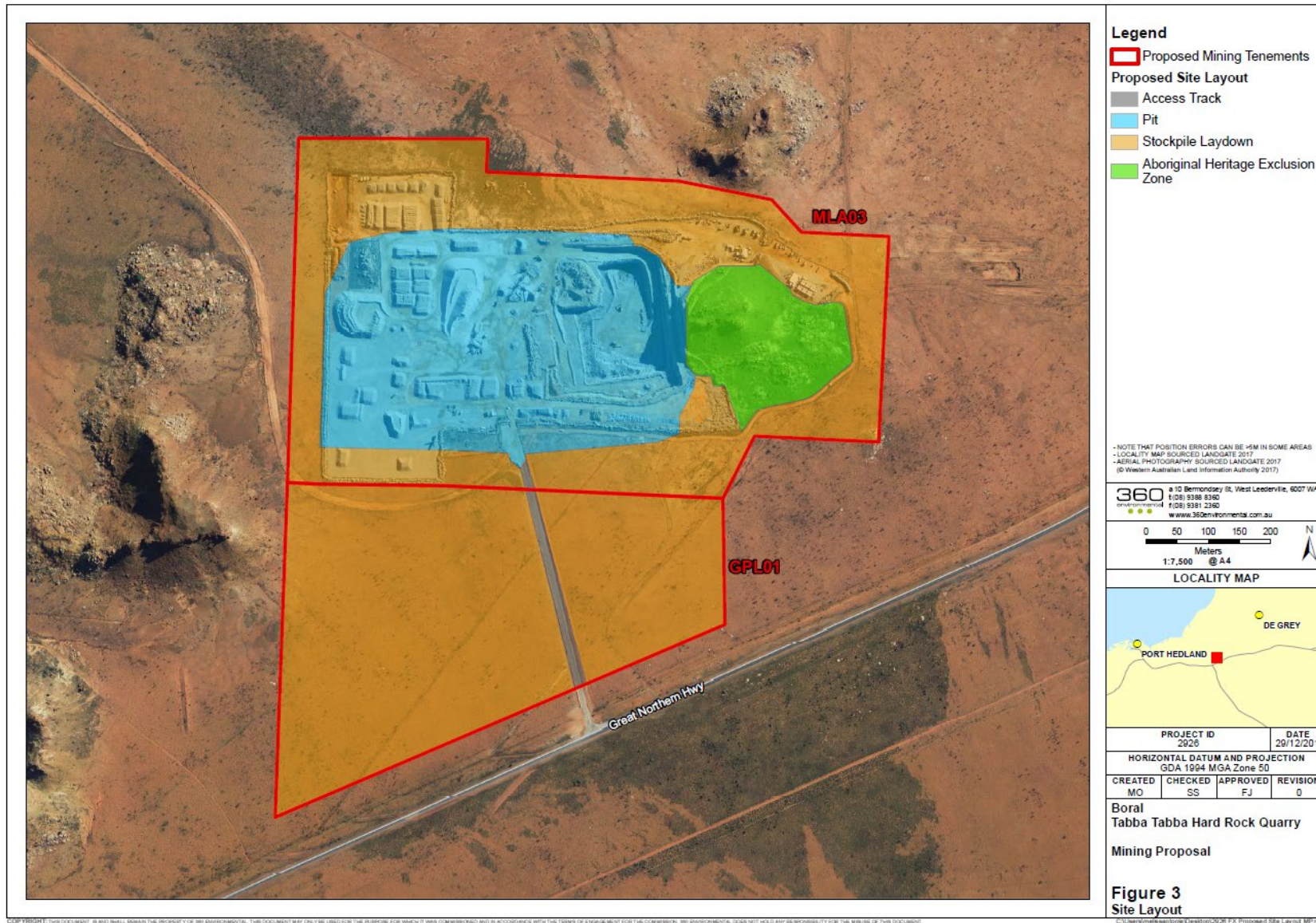


Figure 2: Site layout

2 LICENCE AMENDMENT DETAILS

2.1 Existing licence

Licence L7975/2004/4 currently includes the prescribed premises categories 12 (screening etc. of material), 35 (asphalt manufacturing) and 61A (solid waste facility) as per Schedule 1 of the Environmental Protection Regulations 1987.

The prescribed premises boundary as per the current licence is shown in Figure 3.

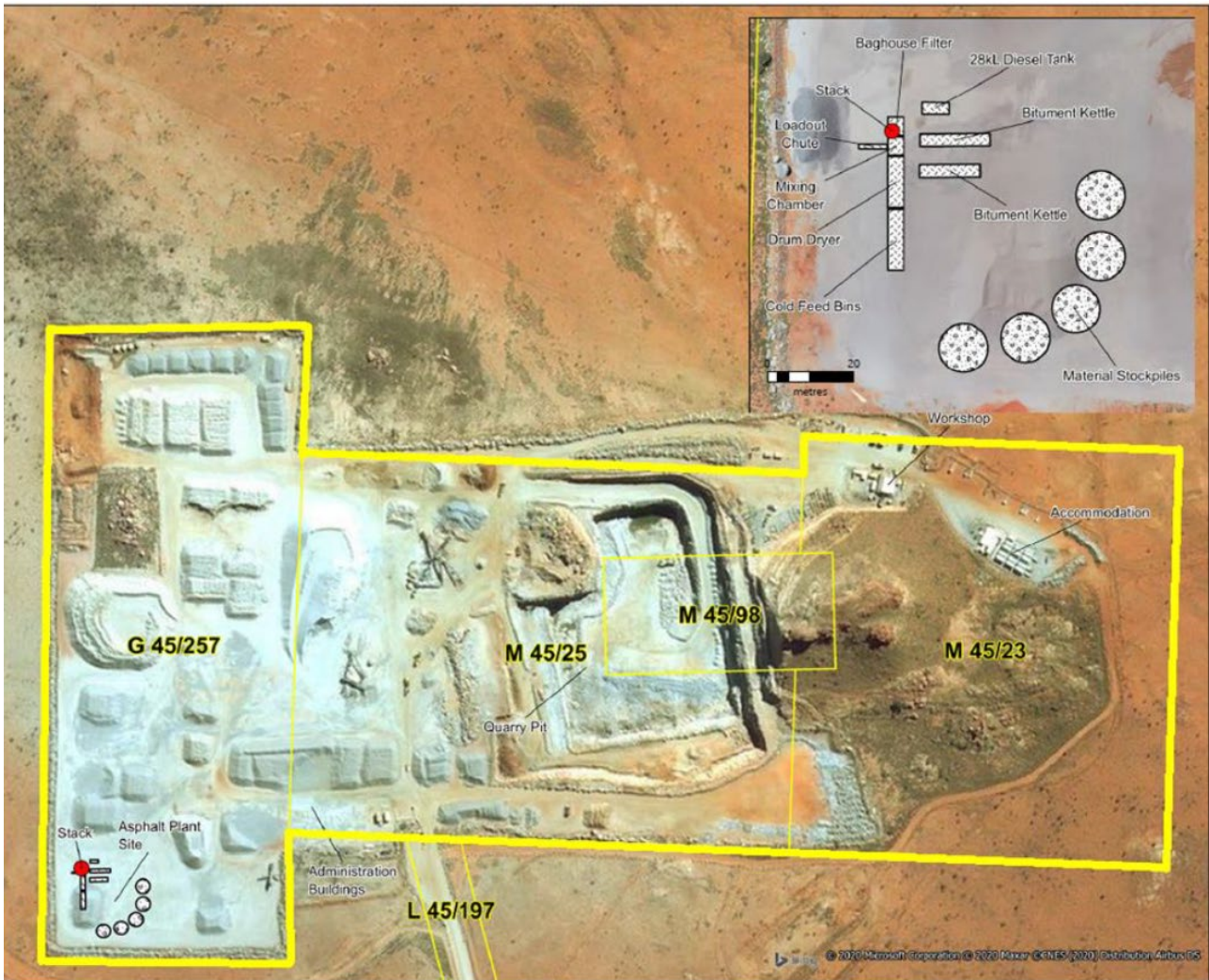


Figure 3: Previous prescribed premises boundary

2.2 Proposed amendments

Boral is requesting the following changes to the existing licence (L7975/2004/4) as detailed in Sections 2.2.1 to 2.2.3:

- Removal of prescribed premises categories 35 and 61A
- An update to the prescribed premises boundary to reflect the amalgamated mining tenements in the approved Mining Proposal (Reg ID: 85255).

2.2.1 Removal of categories

Current and proposed future operations at the site relating to L7975/2004/4 are for screening and crushing of material only. There are no amendments proposed in regard to the activities associated with premises category 12 (screening etc. of material).

The modular asphalt plant for the manufacture of asphalt (category 35) has never been located at the prescribed premises. As Boral does not propose to mobilise the asphalt plant to the site in the future and does not propose to undertake asphalt manufacture at the site, it is requesting that category 35 and associated conditions be removed from licence L7975/2004/4. The proposed amendments to licence L7975/2004/4 conditions are summarised in Table 1.

Reclaimed Asphalt Pavement (RAP) has not been and is not proposed to be received or processed at the site. Therefore, Boral is requesting that category 61A and associated conditions be removed from licence L7975/2004/4. The proposed amendments to licence L7975/2004/4 conditions are summarised in Table 1.

Liaison with DWER advised that the removal of categories from the licence (as outlined above) does not warrant the requirement for a licence amendment.

2.2.2 Change to prescribed premises boundary

The prescribed premises boundary requires amendment to align with the current mining tenement boundaries and site activities, as per the approved Mining Proposal (Reg ID: 85255). The proposed prescribed premises boundary includes mining tenements G45/344, L45/197 and M45/1284 and is shown in Figure 4.

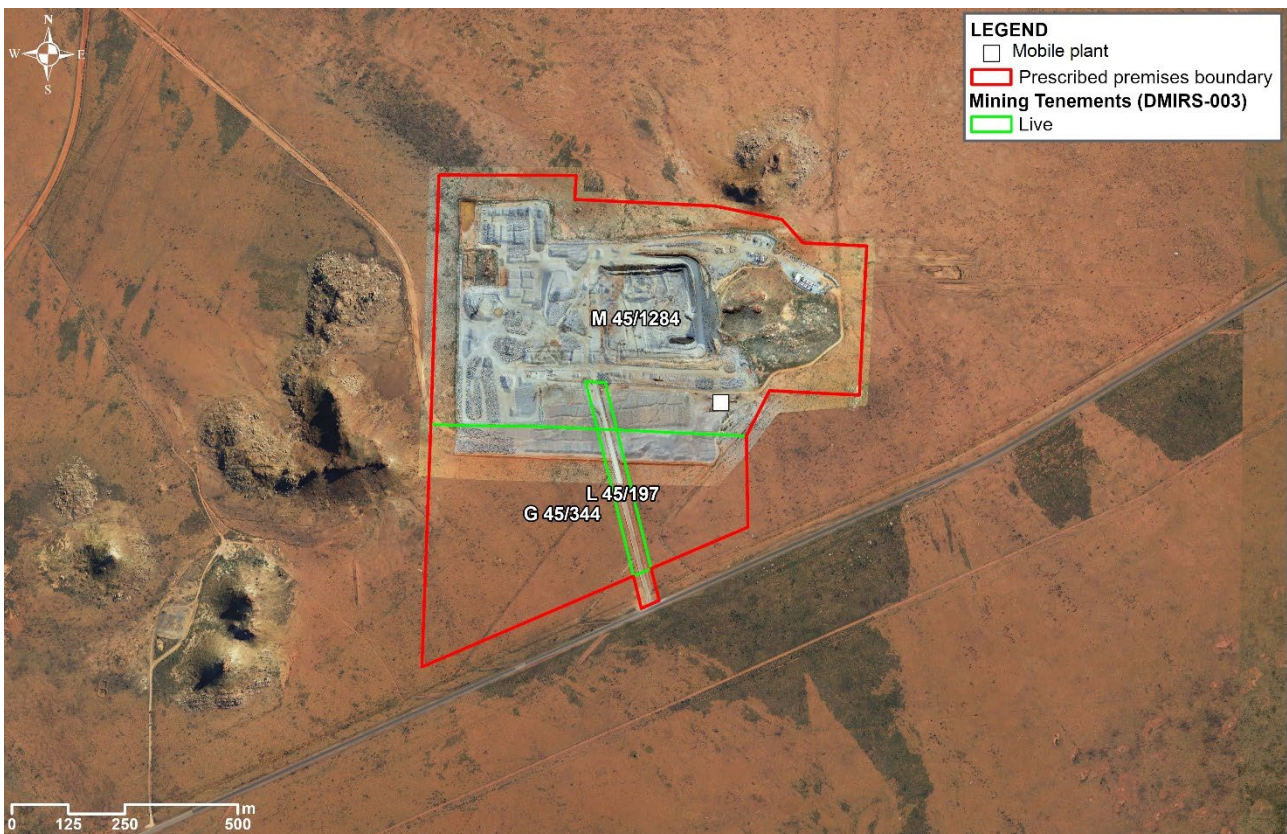


Figure 4: Proposed prescribed premises boundary

2.2.3 Proposed removal of conditions

To reflect the removal of Categories 35 and 61A, Boral is proposing the amendments to licence L7975/2004/4 as summarised in Table 1.

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Table 1: Proposed amendments to Licence L7975/2004/4

Licence section	Current licence condition and justification for amendment	Proposed amendment
Infrastructure and equipment	<p>Condition 1: The licence holder must ensure that the site infrastructure and equipment listed in Table 1 (of licence) and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 1 (of licence).</p> <p>Infrastructure and equipment associated with asphalt manufacturing should be removed as the mobile asphalt plant for the manufacture of asphalt (category 35) has never been located at the prescribed premises and Boral does not propose to mobilise the asphalt plant in the future</p>	Remove asphalt manufacturing infrastructure and equipment (i.e. TEREX E100P and Ciber iNova 2000) listed in Table 1 of Condition 1
Waste acceptance	<p>Condition 3: The licence holder must only accept onto the premises waste of a waste type, which does not exceed the corresponding rate at which waste is received, and which meets the corresponding acceptance specification set out in Table 2 (of licence).</p> <p>No waste is proposed to be accepted onto the site, including RAP or Processed RAP).</p>	Remove Condition 3
	<p>Condition 4: The licence holder must ensure that the waste types specified in Table 3 (of the licence) are only subjected to the corresponding process(es), subject to the corresponding process limits and/or specifications.</p> <p>As no asphalt manufacturing is proposed on the site, any reference to asphalt manufacturing from the processing of waste (RAP or Processed RAP) should be removed from Table 3.</p>	Remove condition 4 (and Table 3)
Emissions and discharges	<p>Condition 5: The licence holder must ensure that the emissions specified in Table 4 (of licence), are discharged only from the corresponding discharge point and only at the corresponding discharge point location.</p> <p>There are no emissions and discharges associated with asphalt manufacturing as the mobile plants will not be mobilised to the site.</p>	Remove condition 5
	<p>Condition 6: The licence holder must ensure that emissions from the discharge point listed in Table 5 (of licence) for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 8.</p> <p>There are no discharge points or emissions associated with asphalt manufacturing as the mobile plants will not be mobilised to the site.</p>	Remove condition 6
Monitoring	<p>Condition 8: The licence holder must monitor emissions (as set out in Table 6 of licence).</p> <p>As no asphalt manufacturing plants are located on the site, there are no emissions and discharges to monitor.</p>	Remove condition 8
	<p>Condition 9: The licence holder must ensure that the sampling required by condition 8 is undertaken at sampling locations in compliant with AS 4323.1.</p> <p>As no asphalt manufacturing plants are located on the site, there are no emissions and discharges to monitor or sample.</p>	Remove condition 9
	<p>Condition 10: The licence holder must ensure that all non-continuous sampling and analysis undertaken pursuant condition 8 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.</p> <p>Not applicable as no asphalt manufacturing plants are located on the site and therefore no sampling and analysis is required.</p>	Remove condition 10
Records and reporting	<p>Condition 13: The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:</p> <p>(d) monitoring programme undertaken in accordance with condition 8 of this licence.</p> <p>Condition 13 (d) does not apply to this licence as there are no emissions and discharges to monitor.</p>	Remove Condition 13 (d)

3 EXISTING ENVIRONMENT

3.1 Topography

The site is situated in predominantly on a low plain with occasional rocky outcrops and some low hills. The site is flat with a small mesa located to the east of the existing quarry (Figure 5).

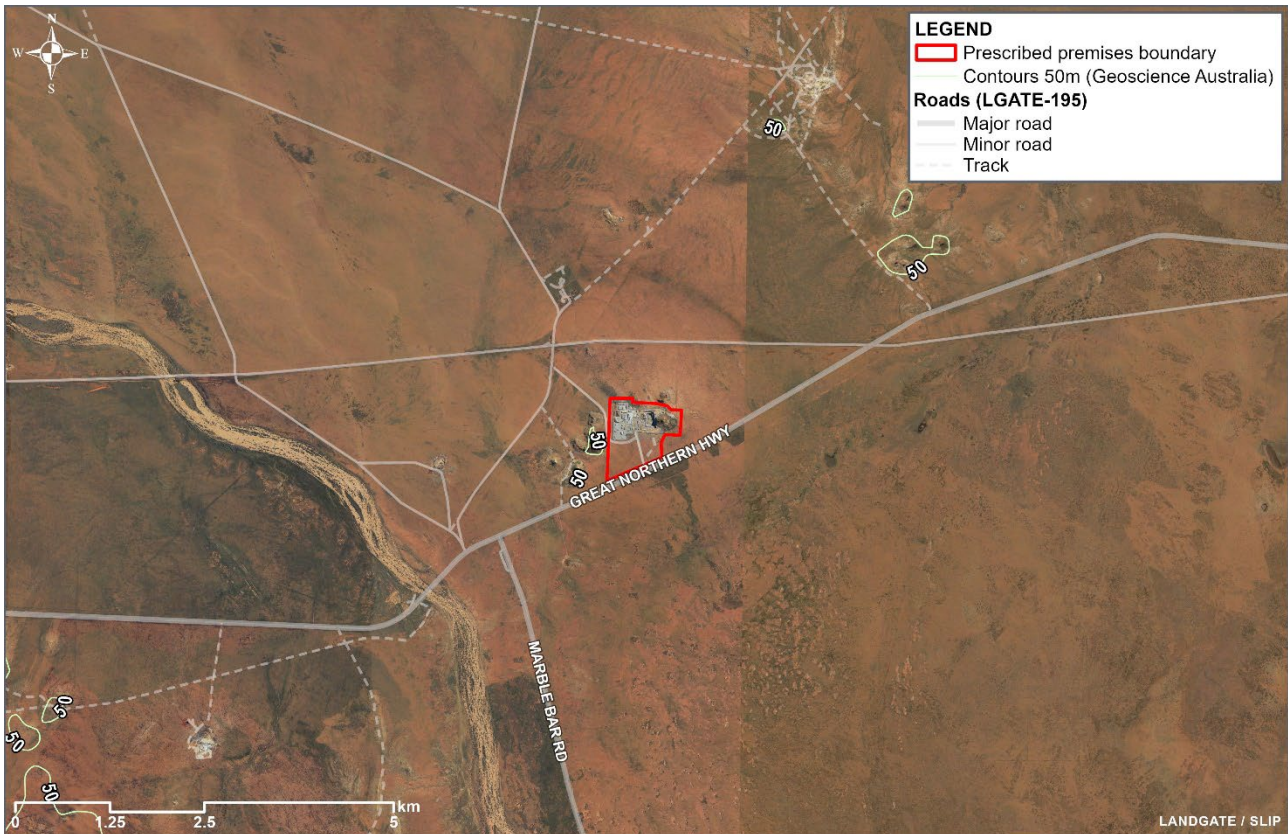


Figure 5: Topography

3.2 Geology

Surface geology at the site is described as biotite-muscovite monzogranite; locally with quartz and K-feldspar phenocrysts; massive to weakly foliated; metamorphosed (Ag) (Figure 6). Soils in the local area have been mapped on a broad scale by van Vreeswyk et al. (2004) and consist predominantly of red siliceous sands and sandy earths. The site is underlain by a granite basement of phophyritic biotite adamellite of Archaean Age, which forms the granite resource.

3.3 Acid sulfate soils

Acid sulfate soils (ASS), when naturally occurring, are harmless when left in a waterlogged, undisturbed environment. However, when exposed to air through activities such as excavation or dewatering, iron compounds and sulphuric acid are produced. There is potential for this acid to release other substances, including heavy metals, into the surrounding environment and waterways.

DWER ASS risk mapping data does not indicate an ASS risk within the prescribed premises boundary (Figure 10).

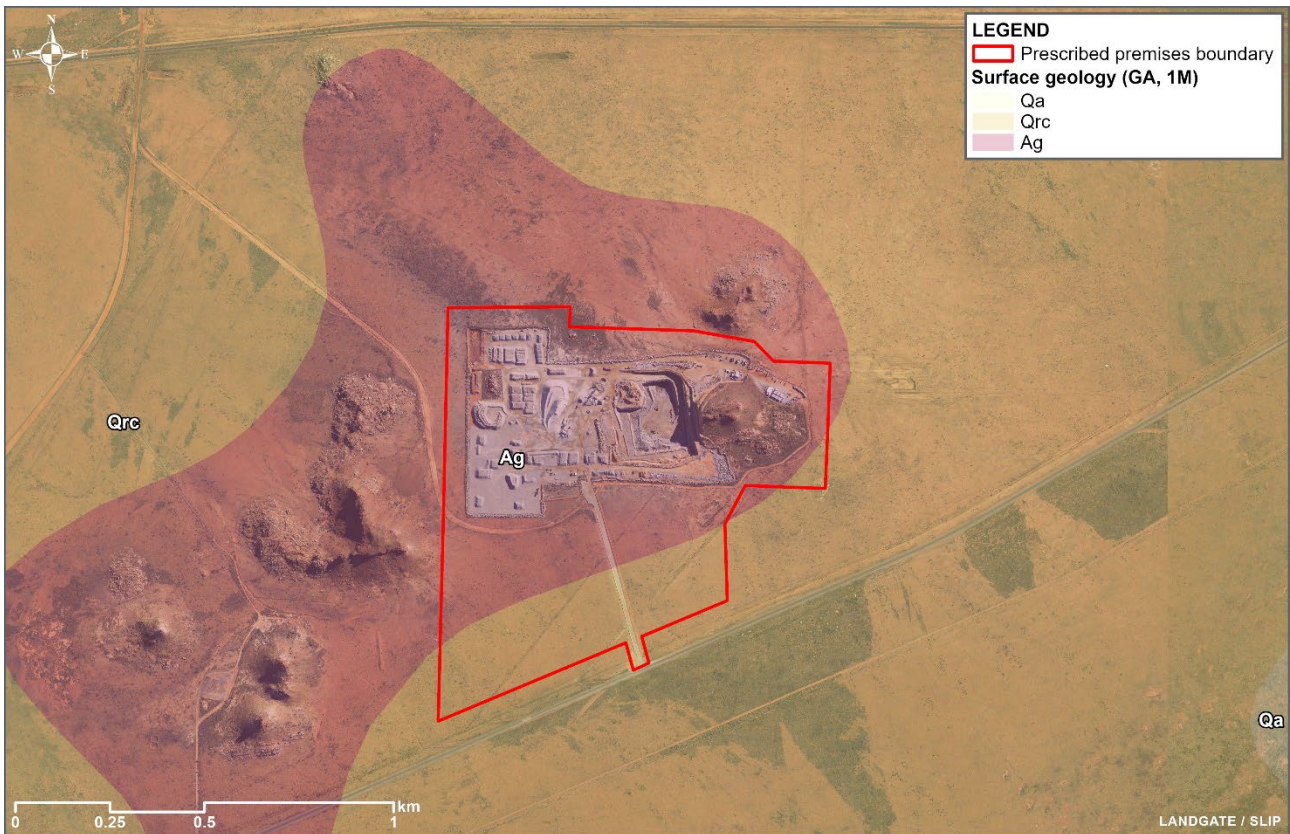


Figure 6 Surface geology

3.4 Groundwater

Groundwater has been intersected at a depth of 8 m to 24 m below ground level. The groundwater is slightly brackish at 3600 mg/L.

3.5 Surface water

Surface drainage lines are located 66 m north of the site, draining in a northerly direction. Tabba Tabba Creek lies approximately 4 km south-west of the site. Tabba Tabba Creek is normally dry and only flows after cyclonic or storm events. Surface water features are provided in Figure 7.

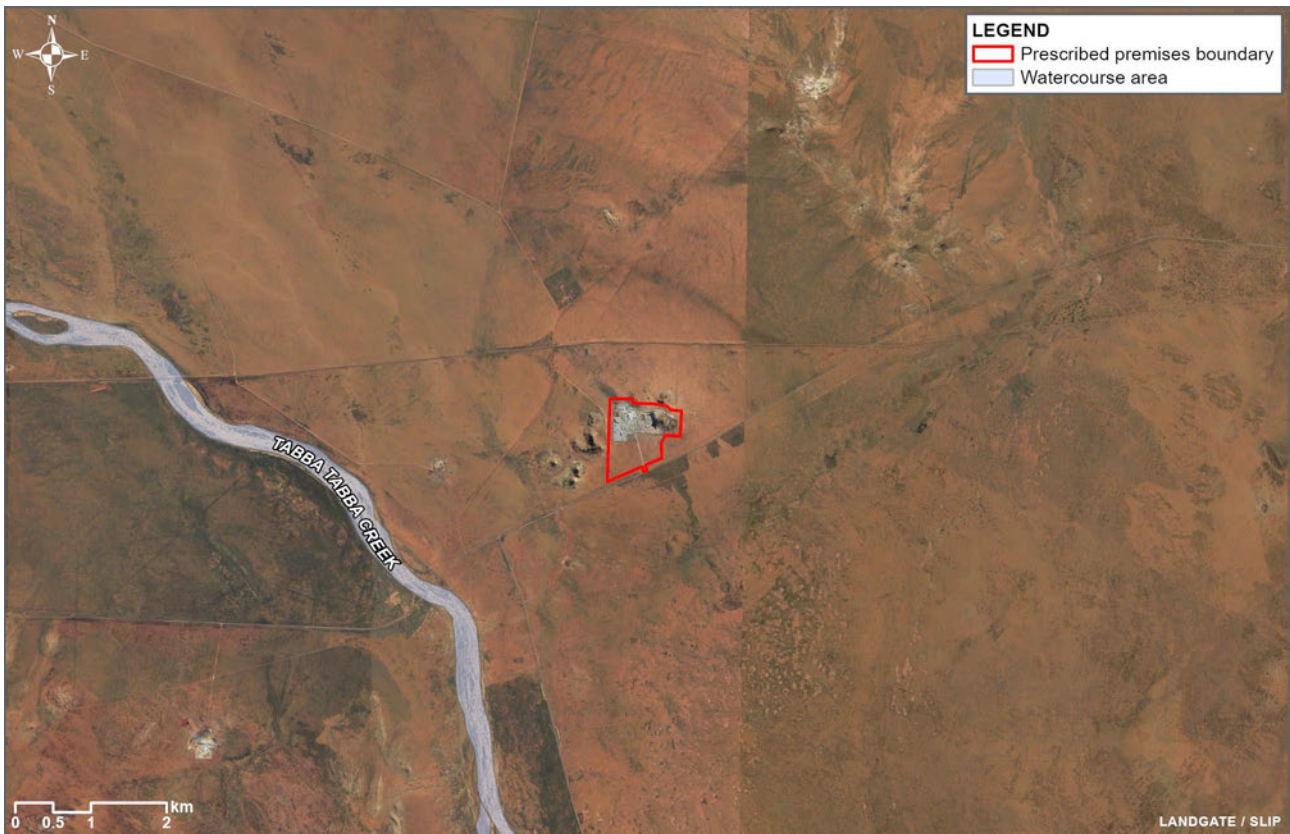


Figure 7: Surface water

3.6 Flora and vegetation

Pre-European vegetation mapping indicates that vegetation on the site comprises the Abydos Plain; Hummock grassland with scattered shrubs or mallee *Triodia* species, *Acacia* species, *Grevillea* species and *Eucalypt* species (Figure 8).

According to mapping by Beard (1975), the site falls on the boundary of two vegetation types described as:

- A18Zr.t1Hi: Dwarfshrub steppe: dwarf shrubs and *Spinifex*; *Acacia translucens* and *Triodia pungens*
- A2Sr.t1Hi: Shrub steep: scattered shrubs and *Spinifex*; *Acacia pyrifolia* and *Triodia pungens*.

No Threatened or Priority flora species, Threatened Ecological Communities or Priority Ecological Communities have been recorded within the prescribed premises boundary.

There are no Environmentally Sensitive Areas mapped on or adjacent to the site.

Potential impacts to flora and vegetation from site activities was assessed by DEMIRS in the Mining Proposal.

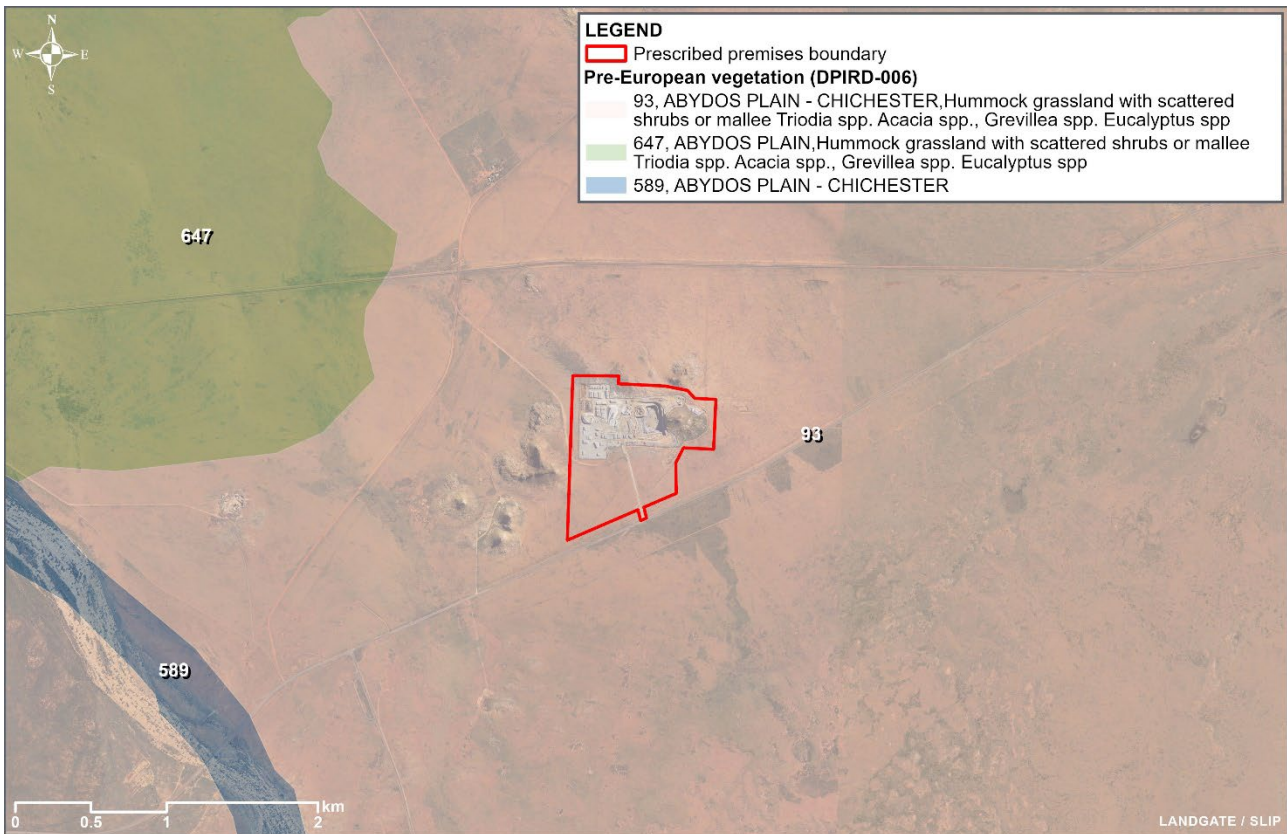


Figure 8: Vegetation mapping

3.7 Fauna

A fauna survey was undertaken by GHD in December 2007 including the previous prescribed premises site. No conservation significant fauna were recorded (GHD 2008). Limited fauna habitat was present within the site, with large areas of the site having been previously cleared. Most remnant vegetated areas were hummock grasslands of which the surrounding areas were noted to be in better condition (GHD 2008).

There have not been any significant fauna incidents on site to date and light emissions are directed away from the sky to prevent impacts to nocturnal fauna. As such, impacts to terrestrial fauna as a result of current and future site activities is unlikely to be significant.

3.8 Contaminated sites

The DWER contaminated sites database did not indicate any contaminated sites within the prescribed premises boundary or within a 5 km radius of the site.

The site does not have a workshop and there is not a significant amount of dangerous goods stored on site. All hydrocarbons are stored on site within a bunded sea container. All equipment and vehicles are regularly serviced reducing the likelihood of hydrocarbon leaks.

The hard rock quarry is not classified as an ore body and therefore the stockpile is not classed as contaminated material, as it comprises natural rock that is crushed and screened to achieve particular sizing.

Based on the above, contamination as a result of the site activities is unlikely.

3.9 Aboriginal heritage

A search of the Department of Planning, Lands and Heritage Aboriginal Cultural Heritage Inquiry System identified Aboriginal Cultural Heritage (ACH) Registered Place 9904 (Mikurrunya Hills) within the prescribed premises boundary (Figure 9).

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As part of previous approvals, it has been agreed that disturbance impacts to the ACH from site operations will be minimised through the implementation of exclusion zones (Figure 2) to protect the hills and granite outcrops associated with the heritage site. As outlined in Section 1.1.2 of this report, Boral have a Section 18 Consent to disturb an ACH site under the *Aboriginal Heritage Act 1972*.

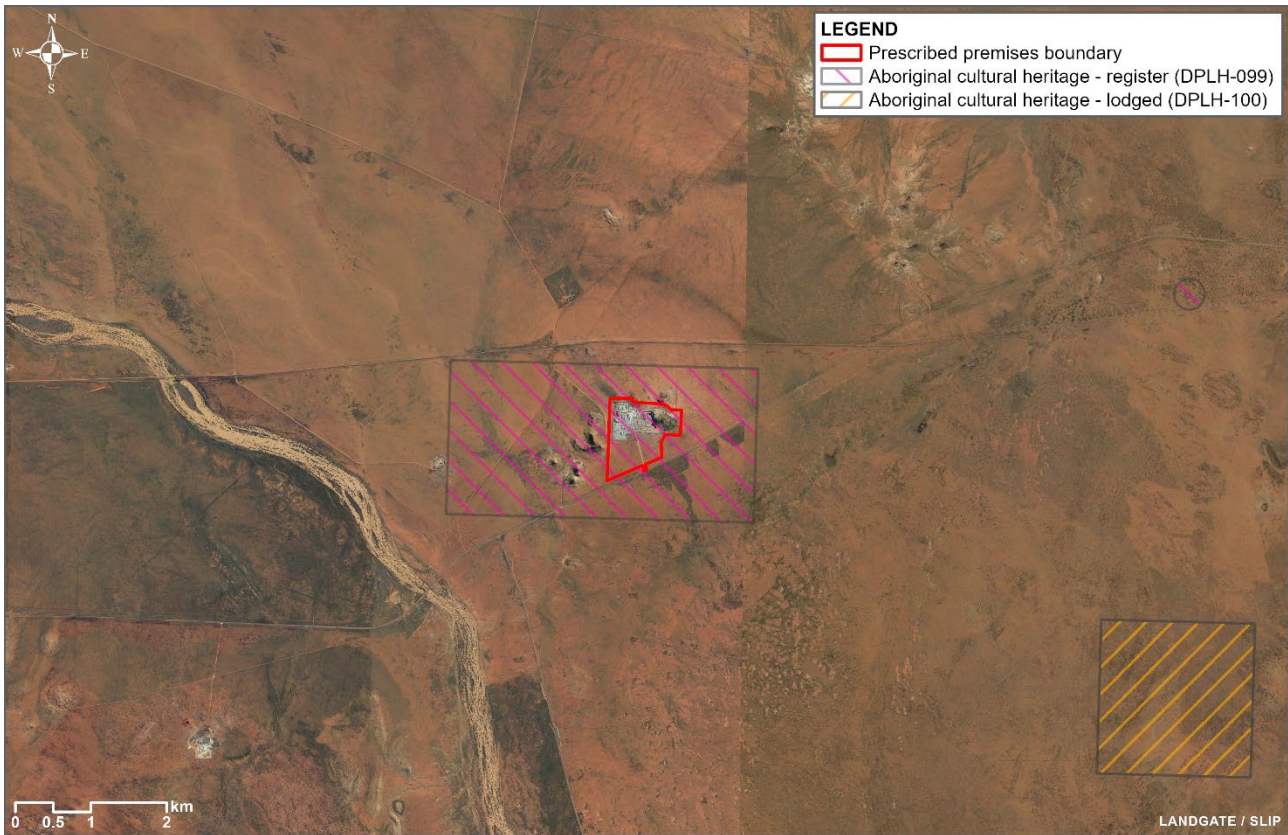


Figure 9: Aboriginal heritage

3.10 Sensitive receptors

Potential sensitive receptors within vicinity of the site include (Figure 10):

- The Marta Marta Aboriginal community is located 1.6 km north-west of the premises.
- Groundwater is approximately 8 m-24 m below ground level. The existing pit has not intersected the water table (360 Environmental 2015) and impacts to groundwater as a result of the prescribed activities are considered unlikely.
- Tabba Tabba Creek lies approximately 4 km south-west of the site.

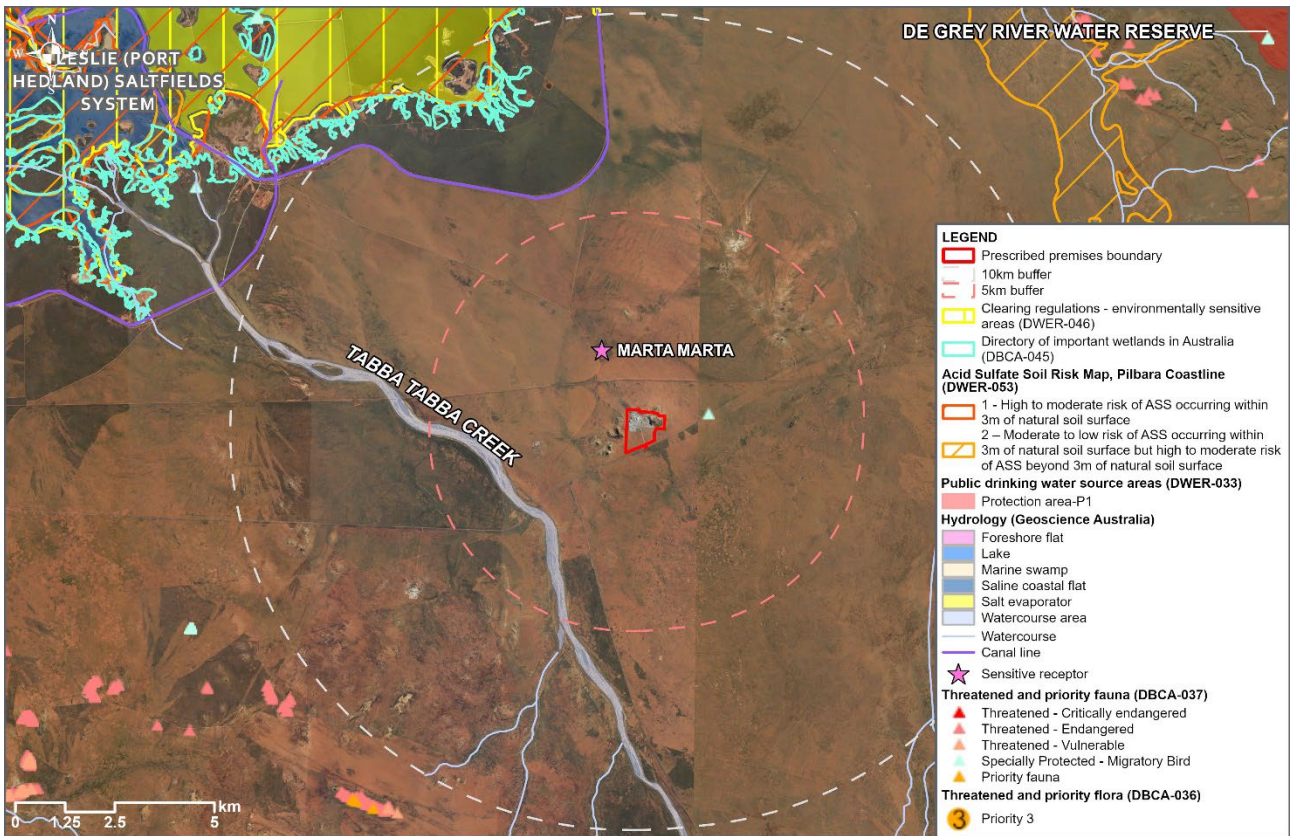


Figure 10: Sensitive receptors and environmental features with 5 km buffer

4 ENVIRONMENTAL MANAGEMENT AND IMPACTS

4.1 Emissions

4.1.1 Categories 35 and 61A

The emissions associated with asphalt plants are emissions to air via a stack, fugitive dust, odour and noise. However, as no asphalt manufacturing has been undertaken at the site and Boral is requesting that Categories 35 and 61A are removed from the licence, these emissions are not relevant to the site.

4.1.2 Category 12

Emissions associated with category 12 are fugitive dust and noise from the crushing and screening activities. There are no contaminated stormwater emissions from the site as:

- All water is retained on site for dust suppression.
- Stormwater around the site is captured via open drains and directed to an existing holding pit in the northwest of the site and used for dust suppression.

The emissions point from the crushing and screening activities is not a fixed point, given that the crushing and screening plant is a mobile plant which is moved within the stockpile laydown area shown in Figure 2 as required. The current location of the mobile plant is shown in Figure 11.

Generally, impacts on the environment or social receptors decrease with increasing distance from the source of the emission (EPA, 2005). The EPA Guidance; Separation Distances between Industrial and Sensitive Land Uses (EPA, 2005) provides recommendations on the separation distances between industries and associated activities and sensitive receptors. The EPA recommends that hard rock extractive industries (quarrying (including blasting), crushing and screening) are located at least 1 km from surrounding sensitive receptors.

The surrounding social and environmental sensitive receptors are discussed in Section 3.10, and as shown in Figure 10 are located over 1.5 km from the prescribed premises boundary. As such, dust and noise emissions from the screening and crushing plant are unlikely to have a significant impact on surrounding receptors.

4.2 Proposed management

There are no changes to the current screening and crushing activities at the site, or the related management and controls. Existing management actions currently implemented at the site to minimise emissions are discussed in Table 2.

There have been no formal complaints of dust and noise associated with the site to date, indicating that the current measures and separation distances are successful in minimising potential impacts.

Table 2: Emissions and controls relevant to Category 12

Emission	Source	Potential pathways	Controls
Dust	Crushing and screening plant, truck movement, front-end loader operation	Air / windborne Nearest sensitive receptor over 1.5 km away	<ul style="list-style-type: none"> Raw materials are stored in open stockpiles within the prescribed premises. Water carts are used to condition the stockpiles and keep the roads wet. Access tracks and roads are continuously dampened by using the onsite water cart. Water is generally sourced from the nearby Port Hedland town which is carted on site on an as need basis. Collected stormwater is also used on site for dust suppression activities. When a crushing campaign is underway the contractor uses water at the transfer points between each piece of equipment and directly into the crusher/s. Coarser materials are located around finer materials to assist with wind protection of finer products that are more likely to contain dust. Speed limits are implemented on site to limit dust emissions due to site activities. Visual monitoring of dust is a constant and ongoing procedure. In the event dust management is not able to be achieved, such as bore breakdown or weather conditions, the dust generating activities will be stopped until conditions improve. Dust is not a concern at this site due to the distance from surrounding environmental and social receptors. No formal dust complaints have been received by Boral to date from the existing operations. As the site will be using the existing crushing and screening plant that was initially approved (under licence L7975/2004/4), no changes are expected.
Noise	Crushing and screening plant, truck movement, front-end loader operation	Air / windborne Nearest sensitive receptor over 1 km away	<ul style="list-style-type: none"> Hours of operation are 5.00 am to 7.00 pm Crushing and screening equipment is serviced as required, which reduced noise emissions from the machinery. Processing operates <i>under Environmental Protection (Noise) Regulations 1997</i> and crushing and screening equipment is designed in accordance with Australian Standards. The use of the equipment was initially approved in the original DWER licence and no changes to the equipment are proposed. The closest sensitive receptor is over 1.5 km from the site and noise emissions from crushing and screening activities are unlikely to impact this receptor. As such, no further management is required.

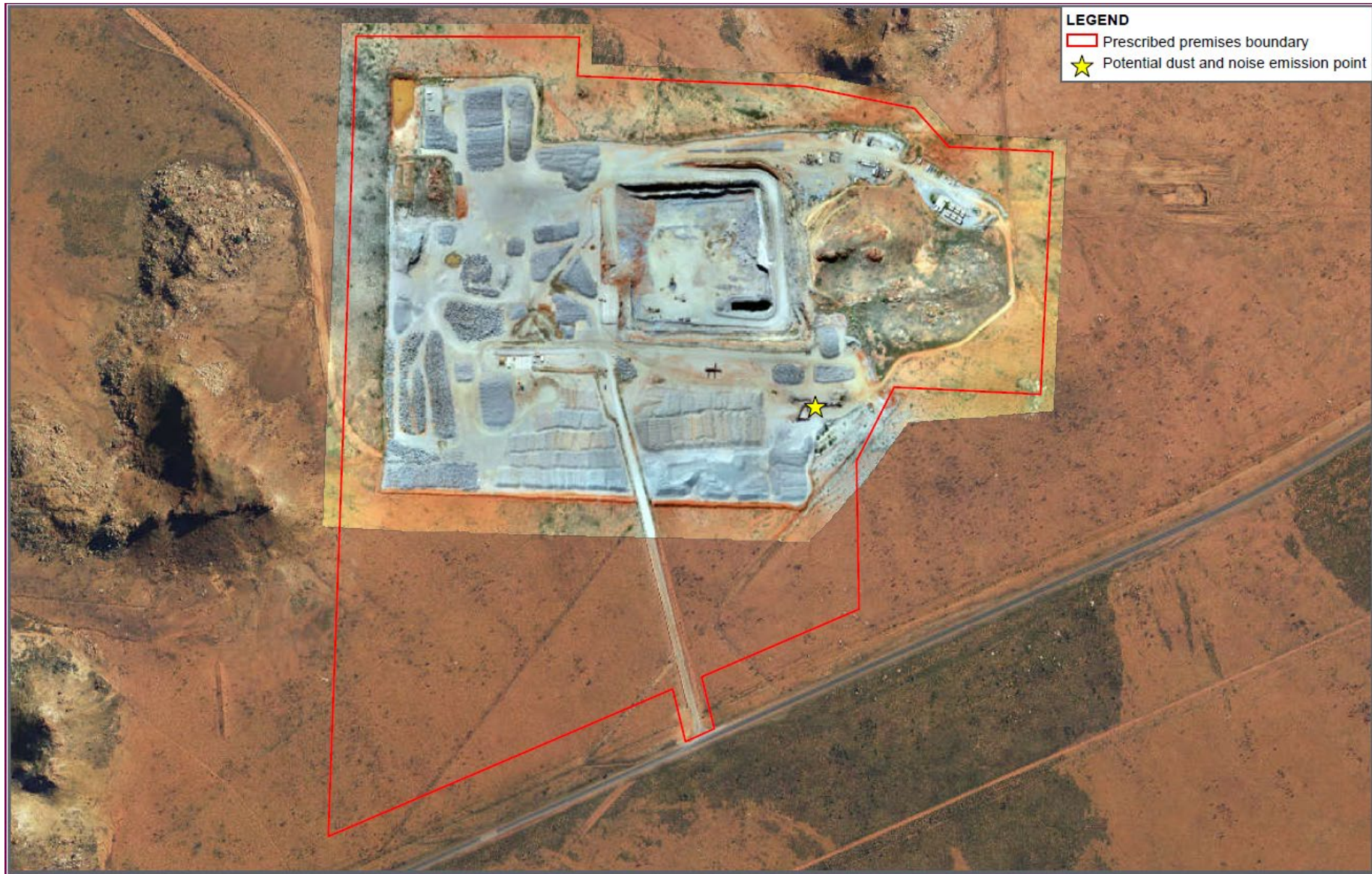


Figure 11 Current location of the mobile screening and crushing plant

