

## **Clearing Permit Decision Report**

## 1. Application details

1.1. Permit application details

Permit application No.: 2709/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Boral Resources (WA) Ltd

1.3. Property details

Property: General Purpose Lease 45/257

Local Government Area: Town of Port Hedland
Colloquial name: Tabba Tabba Quarry Project

1.4. Application

Clearing Area (ha) No. Trees Method of Clearing For the purpose of:
4.5 Mechanical Removal Mineral Production

## 2. Site Information

## 2.1. Existing environment and information

### 2.1.1. Description of the native vegetation under application

#### **Vegetation Description**

Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. One Beard Vegetation Association is located within the proposed clearing area (GIS Database):

Beard Vegetation Association 93 -Hummock grasslands, shrub steppe; kanji over soft spinifex.

GHD (2008) undertook a flora and vegetation survey of the Tabba Tabba Quarry leases (including the proposed clearing area) on 6 December 2007. Two vegetation types were described from the proposed clearing area:

1. Hummock grassland with scattered

Acacia - Acacia inaequilatera and Soft Spinifex (*Triodia pungens*) are dominant, other species include: A. colei over Rhyncosia minima, Sida spp., Corchorus walcottii, Solanum phlomoides, Tephrosia spp., Aristida inaequiglumis, Cenchrus ciliaris (dominant in small patches). This vegetation type comprises a majority of the proposed clearing area; and

2. Rocky outcrops: Hummock grasses and shrub species - Ficus aculeata, F. brachypoda over Capparis spinosa var. nummularia, Pterocaulon serrulatum, P. sphaeranthoides, Streptoglossa sp., Triumfetta maconochieana, Ptilotus incanus, Cajanus pubescens, Cymbopogon sp. and Triodia pungens. This vegetation type occurs in a small area in the north-east corner of the proposed clearing area (GHD, 2008).

#### **Clearing Description**

Boral Resources have applied to clear up to 4.5 hectares of native vegetation on General Purpose Lease 45/257 at the Tabba Tabba Quarry operation, located 45 kilometres east of Port Hedland. The proposed clearing area will be used as an additional product stockpile area.

## Vegetation Condition

Pristine: No obvious signs of disturbance (Keighery, 1994);

to

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

## Comment

The vegetation condition rating is derived from information provided by GHD (2008).

## 3. Assessment of application against clearing principles

## (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

## Comments Proposal is not likely to be at variance to this Principle

The proposed clearing area is located approximately 45 kilometres east of Port Hedland in the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Chichester subregion is characterised by undulating granite and basalt plains with significant areas of basalt ranges. Plains support shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, whilst *Eucalyptus leucophloia* tree steppes occur on ranges (Kendrick and McKenzie, 2002).

GHD (2008) conducted a flora and vegetation survey of the Tabba Tabba Quarry leases (including the area subject to this clearing permit application) on 6 December 2007. A total of 52 taxa from 20 families were recorded during the survey. GHD (2008) noted this to be a low level of biological diversity; however it was noted that poor weather conditions would have resulted in an under-representation of species, particularly annual species such as grasses. GHD (2008) concluded that the Tabba Tabba Quarry leases contain uniform vegetation assemblages and biological diversity that is well represented in the general area.

From a faunal perspective, the Pilbara bioregion is known to support a rich and diverse reptile fauna and it is expected that numerous reptile species would utilise habitats within the proposed clearing area. Rocky outcrops are important from a biodiversity perspective in that they provide shelter for reptile and small mammal species. Outcrops often act as important refuges from wildfire. One small rocky outcrop is present in the north-eastern corner of the proposed clearing area and its associated vegetation has been rated as 'Pristine' to 'Excellent' condition (GHD, 2008). Such outcrops are not restricted to the proposed clearing area, and analysis of aerial photography reveals numerous such outcrops and mesas in the local area (GIS Database). The assessing officer considers that the loss of the rocky outcrop from the proposed clearing area is not likely to have a significant impact on local or regional biodiversity.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

#### Methodology

GHD (2008).

Kendrick and McKenzie (2002).

GIS Database:

- Port Hedland 50cm Orthomosaic.

# (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

## Comments Proposal is not likely to be at variance to this Principle

GHD (2008) conducted a Level 1 fauna survey of the Tabba Tabba Quarry leases (including the proposed clearing area). Desktop survey work was conducted prior to field reconnaissance on 6 December 2007. Field reconnaissance did not include any fauna trapping and was limited to systematic searching for fauna or evidence of fauna. Consequently, only those fauna species that are easily seen, heard or have distinctive signs were sampled (GHD, 2008).

A majority of the proposed clearing area consists of one main fauna habitat type: Hummock grasslands with scattered Acacia. This fauna habitat type is common and widespread in the Pilbara bioregion, including the rangelands surrounding the proposed clearing area. GHD (2008) note that the surrounding area is generally in better condition than the proposed clearing area, therefore hummock grasslands within the proposed clearing area cannot be considered significant fauna habitat.

One area of pristine fauna habitat is present within the proposed clearing area. This includes a small rocky outcrop in the north-east corner of the proposed clearing area which is visible from aerial photography (GIS Database; GHD, 2008). This area has the highest habitat value of all areas in the application area as it provides shelter for a number of vertebrate fauna species, particularly reptiles and small mammals (GHD, 2008). It is noted however that this habitat type is not unique to the study area and can be found in rangelands both locally and regionally (GHD, 2008). For example, a large mesa and scattered rock outcrops exist on Mining Lease 45/23, located approximately 500 metres east of the proposed clearing area. Importantly, the proponent's Mining Proposal stipulates that these landforms will be retained (Landform Research, 2008). Further outcrops and mesas are located within 300 metres to the west of the proposed clearing area which do not appear to be under any immediate threat from mining (GIS Database). Additionally, rock bunding around the perimeter of the Tabba Tabba quarry is adjacent to native vegetation and provides man-made habitat that is likely to be utilised as shelter by vertebrate fauna (Landform Research, 2008).

GHD (2008) note that the proposed clearing is not expected to cause any significant breaks to habitat linkages as the proposed clearing area is mostly surrounded by uncleared rangeland.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

## Methodology

GHD (2008).

Landform Research (2008).

GIS Database:

- Port Hedland 50cm Orthomosaic.

## (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

## Comments Proposal is not likely to be at variance to this Principle

According to available GIS Databases, there are no known records of Declared Rare Flora (DRF) or Priority Flora within the proposed clearing area (GIS Database). GHD (2008) undertook a flora assessment of the proposed clearing area on 6 December 2007 and did not record any DRF or Priority Flora species.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

### Methodology GHD (2008)

GIS Database:

- Declared Rare and Priority Flora list.

## (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

## Comments Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TEC's) in the proposed clearing area or in the general vicinity (GIS Database).

GHD (2008) did not locate any TEC's or Priority Ecological Communities during a Level 1 flora and vegetation assessment of the proposed clearing area on 6 December 2007.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

## Methodology GHD (2008)

GIS Database:

- Threatened Ecological Communities.

## (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

## Comments Proposal is not at variance to this Principle

The area applied to clear is within the Interim Biogeographic Regionalisation of Australia (IBRA) Pilbara bioregion (GIS Database). According to Shepherd (2007) there is approximately 99.9% of the pre-European vegetation remaining in the Pilbara bioregion (see table below). The vegetation of the proposed clearing area is classified as Beard Vegetation Association 93: Hummock grasslands, shrub steppe; kanji over soft spinifex (GIS Database). There is approximately 100% of the pre-European vegetation remaining of Beard Vegetation Association 93 in the Pilbara bioregion (Shepherd, 2007).

The area proposed to clear does not represent a significant remnant of native vegetation in the wider regional area. The proposed clearing will not reduce the extent of Beard Vegetation Association 93 below the current recognised threshold level of 30% of the pre-clearing extent of the vegetation type (below which species loss accelerates exponentially at an ecosystem level) (EPA, 2000).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,187	17,794,646	~99.9	Least concern	6.3
Beard veg assoc.  – State					
93	3,044,308	3,044,249	~100	Least concern	0.4
Beard veg assoc. Pilbara Bioregion					
93	3,042,113	3,042,064	~100	Least concern	0.4

<sup>\*</sup> Shepherd (2007)

Based on the above, the proposed clearing is not at variance to this Principle.

## Methodology Department of Natural Resources and Environment (2002).

EPA (2000). Shepherd (2007).

GIS Databases:

- Interim Biogeographic Regionalisation of Australia.

<sup>\*\*</sup> Department of Natural Resources and Environment (2002)

- Pre-European Vegetation.

## (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

## Comments Proposal is not at variance to this Principle

According to available GIS Databases, there are no watercourses or wetlands in the proposed clearing area (GIS Database). Analysis of aerial photography also suggests this to be the case (GIS Database). Furthermore, GHD (2008) undertook a flora and vegetation assessment and fauna assessment of Tabba Tabba Quarry on 6 December 2007 and did not locate any watercourses in the proposed clearing area.

Based on the above, the proposed clearing is not at variance to this Principle.

#### Methodology

GHD (2008).

- GIS Database:
- Hydrography, linear.
- Port Hedland 50cm Orthomosaic.

## (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

## Comments Proposal is not likely to be at variance to this Principle

Land system mapping by the Department of Agriculture Western Australia has mapped a variety of land systems for the Pilbara bioregion. Land systems are mapped based on biophysical features such as soil and landform type, geology, geomorphology and vegetation type (Van Vreeswyk et al, 2004). The proposed clearing area includes one land system (GIS Database). A broad description is given below:

Boolaloo Land System - This land system is characterised by granite hills, domes and tor fields and sandy plains with shrubby spinifex grasslands. The susceptibility of this land system to erosion has not been reported by Van Vreeswyk et al (2004).

Landform Research (2008) notes that surface soils are flat with minimal erosive runoff. Nevertheless, native vegetation clearing will be undertaken progressively to minimise erosion. Wind erosion will be managed by rehabilitating all disturbed areas as soon as practicable. Rehabilitation will be undertaken as per the proponent's Mining Proposal (Landform Research, 2008).

The assessing officer considers that the small scale of the clearing proposed is unlikely to result in appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

## Methodology

Landform Research (2008).

Van Vreeswyk et al (2004).

GIS Database:

- Rangeland land system mapping.

# (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

## Comments Proposal is not at variance to this Principle

The proposed clearing area is not located in a conservation reserve, nor are there any conservation reserves within the general vicinity of the proposed clearing area (GIS Database). The nearest known conservation reserve is the Mungaroona Range Nature Reserve, located approximately 135 kilometres south-west (GIS Database).

Based on the above, the proposed clearing is not at variance to this Principle.

## Methodology

GIS Database:

- DEC Tenure.

# (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

## Comments Proposal is not likely to be at variance to this Principle

The proposed clearing area is not located within a Public Drinking Water Source Area (GIS Database). There are no watercourses or wetlands in the proposed clearing area (GIS Database). Surface water runoff would only be expected as overland sheet flow during significant storm events as water readily infiltrates the soil under normal climatic conditions (Landform Research, 2008). On this basis, it is unlikely that the proposed clearing will cause significant impacts to the quality of surface water.

Groundwater occurs at depth at Tabba Tabba Quarry, with drill data showing depths of between 7.5 and 21

metres below ground level (Landform Research, 2008). The proposed clearing is not expected to have significant impacts upon groundwater levels or quality.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

#### Methodology

Landform Research (2008).

GIS Database:

- Hydrography, linear.
- Public Drinking Water Source Areas.

## (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

#### Comments

## Proposal is not likely to be at variance to this Principle

The proposed clearing area is located on flat terrain in a semi-tropical environment (Landform Research, 2008). The average annual rainfall is approximately 310 millimetres whilst average annual evaporation is approximately 2,800 millimetres (Landform Research, 2008). No wetlands or watercourses are present in the proposed clearing area and the nearest watercourse, Tabba Tabba Creek, is located approximately 4 kilometres south-west (GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

#### Methodology

Landform Research (2008).

GIS Database:

- Hydrography, linear.

## Planning instrument, Native Title, Previous EPA decision or other matter.

#### Comments

There are two native title claims over the area under application (GIS Database). These claims (WC95/061 & WC99/026) have been registered with the National Native Title Tribunal on behalf of the claimant group (GIS Database). However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

According to available GIS databases, there are no known registered Site of Aboriginal Significance within the proposed clearing area or in the general vicinity (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

No submissions were received from direct interest parties or members of the public when the clearing permit application was advertised for comment.

#### Methodology

GIS Database:

- Aboriginal Sites of Significance.
- Native Title Claims.

### 4. Assessor's comments

### Comment

The proposal has been assessed against the Clearing Principles, and the proposed clearing is not likely to be at variance to Principles (a), (b), (c), (d), (g), (i) or (j) and is not at variance to Principles (e), (f) or (h).

Should a clearing permit be granted, it is recommended that conditions be imposed on the permit for the purposes of weed management, record keeping and permit reporting.

## 5. References

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

GHD (2008) Boral Resources. Report for Tabba Tabba Quarry Flora and Fauna Assessment. February 2008.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of

- WA (Inc). Nedlands, Western Australia.
- Kendrick, P., and McKenzie, N. (2002) Pilbara 1 (PIL1 Chichester subregion) in 'A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002'. Department of Conservation and Land Management, Western Australia.
- Landform Research (2008) Boral Resources (WA) Limited Mining Proposal: Granite Hardrock Excavation (M45/23, M45/25, M45/98, G45/257 and L45/142, Tabba Tabba, Port Hedland). April 2008.
- Shepherd, D.P. (2007). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Van Vreeswyk, A.M, Payne, A.L, Leighton, K.A & Hennig, P (2004) Technical Bulletin No. 92: An inventory and condition survey of the Pilbara region, Western Australia. Department of Agriculture, South Perth, Western Australia.

## 6. Glossary

## Acronyms:

**BoM** Bureau of Meteorology, Australian Government.

**CALM** Department of Conservation and Land Management, Western Australia.

**DAFWA** Department of Agriculture and Food, Western Australia.

DA Department of Agriculture, Western Australia.DEC Department of Environment and Conservation

**DEH** Department of Environment and Heritage (federal based in Canberra) previously Environment Australia

**DEP** Department of Environment Protection (now DoE), Western Australia.

**DIA** Department of Indigenous Affairs

DLI Department of Land Information, Western Australia.DMP Department of Mines and Petroleum, Western Australia.

**DoE** Department of Environment, Western Australia.

**DOLA** Department of Industry and Resources, Western Australia.

Department of Land Administration, Western Australia.

**DoW** Department of Water

**EP Act** Environment Protection Act 1986, Western Australia.

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

**GIS** Geographical Information System.

**IBRA** Interim Biogeographic Regionalisation for Australia.

IUCN International Union for the Conservation of Nature and Natural Resources – commonly known as the World

Conservation Union

RIWI Rights in Water and Irrigation Act 1914, Western Australia.

**s.17** Section 17 of the Environment Protection Act 1986, Western Australia.

**TECs** Threatened Ecological Communities.

## **Definitions:**

{Atkins, K (2005). Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia}:-

- Priority One Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- **Priority Two Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3 Priority Three Poorly Known taxa: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4 Priority Four Rare taxa: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R Declared Rare Flora Extant taxa (= Threatened Flora = Endangered + Vulnerable): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- **Declared Rare Flora Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

- Schedule 1 Fauna that is rare or likely to become extinct: being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Fauna that is presumed to be extinct: being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Birds protected under an international agreement: being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Other specially protected fauna: being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia}:-

- Priority One: Taxa with few, poorly known populations on threatened lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- Priority Three: Taxa with several, poorly known populations, some on conservation lands: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5 Priority Five: Taxa in need of monitoring: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

## Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)

- **EX Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died
- **EX(W) Extinct in the wild:** A native species which:
  - (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
  - (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- **CR Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- **EN Endangered:** A native species which:
  - (a) is not critically endangered; and
  - (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- **VU Vulnerable:** A native species which:
  - (a) is not critically endangered or endangered; and
  - (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- **CD Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.