Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4998/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: *Iron Ore (Mount Newman) Agreement Act 1964*, Mineral Lease 244SA (AML 70/244)
Local Government Authority: Shire of East Pilbara
Colloquial name: Orebody 29 Overburden Storage Area

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
80		Mechanical Removal	Mineral production and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 2 July 2012

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database). **82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*. A survey conducted by ENV Australia (2011) identified seven vegetation associations within the application area: **1a** Hummock Grassland of *Triodia wiseana* and *T. basedowii* with High Open Shrubland of *Acacia bivenosa* with Low Open Woodland of *Eucalyptus leucophloia* subsp*. Leucophloia;* **1b** Open Hummock Grassland of *Triodia basedowii* and *T. epactia* with High Open Shrub of *Hakea chordophylla, Acacia inaequilatera* and *A. pruinocarpa* with Scattered Low Trees of *Eucalyptus leucophloia* subsp*. leucophloia* and *Corymbia ferriticola;* **1c** Hummock Grassland of *Triodia brizoides* and *T. basedowii* with Open Shrubland of *Acacia bivenosa, A. trudgeniana* and *A. victoriae* with Low Open Woodland of *Eucalyptus leucophloia* subsp*. leucophloia* and *Acacia pruinocarpa;* **1d** Hummock Grassland of *Triodia wiseana* and *T. brizoides* with Low Open Woodland of *Eucalyptus leucophloia* subsp*. leucophloia* with High Open Shrubland of *Acacia aneura* var*. microcarpa* and *Acacia pruinocarpa;* **1e** Open Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with	BHP Billiton Iron Ore Pty Ltd has applied to clear up to 80 hectares, within a total application area of approximately 224 hectares. Clearing will be undertaken for the purpose of expanding overburden storage areas, topsoil stockpile areas and the Whaleback warehouse (BHP Billiton, 2012).	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994); To Pristine: No obvious signs of disturbance (Keighery, 1994).	The vegetation condition was assessed by botanists from ENV Australia (2011).

High Open Shrubland of *Acacia rhodophloia* and *Hakea chordophylla* with Open Shrubland of *Acacia acradenia;*

1g Very Open Hummock Grassland of *Triodia basedowii* and *T. brizoides* with Low Open Shrubland of *Eremophila fraseri* subsp*. fraseri* and *Senna artemisioides* subsp*. helmsii* with Scattered Shrubs of *Acacia trudgeniana;* and

2a Low Open Forest of *Acacia aneura, A. pruinocarpa* and *Eucalyptus xerothermica* with Open Hummock Grassland of *Triodia epactia* with Open Shrubland of *Acacia acradenia, A. Bivenosa* and *Rhagodia eremaea.*

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 application area occurs within the Hamersley (PIL3) subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by Mulga low woodlands over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). The vegetation within the application area consists of Beard vegetation association 82, which is common and widespread throughout the Pilbara bioregion with approximately 100% of the pre-European vegetation extent remaining (Government of Western Australia, 2011; GIS Database).

A flora and vegetation survey undertaken by ENV Australia (2011) identified a total of 127 taxa from 64 genera and 31 families within the survey area. This included seven introduced species, all of which are environmental weeds as defined by the Environmental Weed Strategy for Western Australia (CALM, 1999; BHP Billiton Iron Ore Pty Ltd, 2012). The vegetation ranges from completely degraded to pristine condition (Keighery, 1994; ENV Australia, 2011). The implementation of a weed management condition will minimise the risk of the spread of weeds into uninfested areas.

A search of the Department of Environment and Conservation databases was conducted in January (2011) by ENV Australia, for a 40 kilometre radius around the application area. The search identified 18 Priority Flora and one Threatened Flora species with potential to occur in the application area. A survey undertaken by ENV Australia (2011) did not record any Threatened or Priority Flora species within the application area (BHP Billiton Iron Ore Pty Ltd, 2012).

ENV Australia (2011) identified 5 broad fauna habitat types within the application area which are considered to be well represented in the Pilbara bioregion (BHP Billiton Iron Ore Pty Ltd, 2012). Eight conservation significant fauna species have potential to utilise the application area however the survey conducted between 17 January and 21 January 2011 did not record any species of conservation significance within the application area (ENV Australia, 2011).

The application area is located 1 kilometre south west of the Newman town site and is adjacent to existing mining operations. The application area is not likely to represent an area of high biological diversity.

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

Methodology

BHP Billiton Iron Ore Pty Ltd (2012)
CALM (2002)
CALM (1999)
ENV Australia (2011)
Government of Western Australia (2011)
Keighery (1994)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation
- Threatened Ecological Sites Buffered

(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

The vegetation within the application area consists of Beard vegetation association 82, which is common and widespread throughout the Pilbara bioregion with approximately 100% of the pre-European vegetation extent remaining (Government of Western Australia, 2011; GIS Database). The native vegetation to be cleared is in completely degraded to pristine condition (Keighery, 1994).

A fauna survey undertaken by ENV Australia (2011) identified 5 broad fauna habitat types:

1. Alluvial Plain;
2. Breakaway;
3. Low Hill;
4. Hill Slope; and
5. Hill Crest.

A desk top review of previous fauna surveys and the Department of Environment and Conservations and Department of the Sustainability, Environment, Water, Population and Communities databases identified a total of 12 species of conservation significant fauna which may potentially utilise the application area (BHP Billiton Iron Ore Pty Ltd, 2012). An assessment conducted by ENV Australia (2011) found that the proposed clearing would present a low risk to these species and no species of conservation significance were recorded during a survey of the application area (ENV Australia, 2011).

The application area is located 1 kilometre south west of the Newman town site and is adjacent to existing mining operations. The habitat types of the application area are common and widespread and are unlikely to represent a significant habitat for fauna.

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

Methodology BHP Billiton Iron Ore Pty Ltd (2012)
ENV Australia (2011)
Government of Western Australia (2011)
Keighery (1994)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation

(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 databases, there is no recorded Threatened Flora within the application area (GIS Database). ENV Australia (2011) undertook a desktop survey and a flora and vegetation survey of the application area and no Threatened Flora species were recorded.

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

Methodology ENV Australia (2011)
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**
According to available databases, there are no recorded threatened ecological communities within the application area (GIS Database). ENV Australia (2011) undertook a desktop survey and a flora and vegetation survey of the application area and no threatened ecological communities were recorded.

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

Methodology ENV Australia (2011)
GIS Database:
- Threatened Ecological Sites Buffered

(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 application area falls within the Pilbara IBRA bioregion (GIS Database) in which approximately 99.6% of the pre-European vegetation still exists (Government of Western Australia, 2011).

One Beard vegetation association is located within the application area (GIS Database; Government of Western Australia 2011):

82: Hummock grasslands, low tree steppe: Snappy Gum over *Triodia wiseana*.

This vegetation association retains approximately 99.5**%** of its pre-European extent.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,193	17,785,000	~99.6	Least Concern	~6.32
Beard vegetation associations - State					
82	2,565,901	2,565,901	~99.5	Least Concern	~10.24
Beard vegetation associations - Bioregion					
82	2,563,583	2,563,583	~99.5	Least Concern	~10.25

* Government of Australia (2011)
** Department of Natural Resources and Environment (2002)

Given that the vegetation is well represented locally and regionally the vegetation within the proposed area is not likely to be significant as a remnant in a highly cleared landscape.

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2011)
GIS Database
- IBRA WA (Regions - Sub Regions)
- 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**
There are no permanent watercourses mapped within the application area however there are several ephemeral drainage lines (GIS Database, BHP Billiton Iron Ore Pty Ltd, 2012). Flora and vegetation surveys of the application area, conducted by ENV Australia (2011) did not identify any vegetation growing in association with a watercourse or wetland.

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

Methodology BHP Billiton Iron Ore Pty Ltd (2012)
ENV Australia (2011)
GIS Database:
- Hydrography, Linear

(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**
The application area comprises of the Newman and Rocklea land systems (GIS Database).

The Newman land system is comprised of rugged jaspilite, ridges and mountains supporting hard spinifex grasslands. It is generally not susceptible to soil erosion (Van Vreeswyk et al., 2004). The Rocklea land system is comprised of Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands. This system has a very low erosion hazard (Van Vreeswyk et al., 2004).

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

Methodology 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 likely to be at variance to this Principle**
The proposed application area is not located within any conservation areas (GIS Database). The nearest conservation areas are the Collier Range National Park and Karijini National Park, located more than 100

kilometres from the application area (GIS Database).

Given the distance to these conservation areas, the proposed clearing is not likely to have any negative impacts on the environmental values of these areas.

Based on the above, the proposed clearing is not likely to be 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 located within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) gazetted under the *Country Areas Water Supply Act 1947* on 21 August 1983. This PDWSA is defined a 'Priority 1 (P1)' under the Water Source Protection Classification System (GIS Database).

However, clearing activities associated with mineral production are a compatible land use in a P1 PDWSA and advice from the Department of Water (2012) has identified that the proposed clearing is unlikely to have any significant impact on surface or underground water, provided activities are carried out in accordance with DOW guidelines and BHP Billiton Iron Ore Pty Ltd's environmental management plans.

There are no permanent watercourses mapped within the area under application (GIS Database, BHP Billiton Iron Ore Pty Ltd, 2011). In addition any surface water within the application area is only likely to remain for short periods following significant rainfall events as the annual evaporation rate greatly exceeds rainfall (GIS Database). It is therefore unlikely that the proposed clearing will cause deterioration in the quality of surface or underground water.

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

Methodology BHP Billiton Iron Ore Pty Ltd (2012)
Department of Water (2012)
GIS Database:
- Evoporation Isopleths
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSAs)
- Rainfall Mean Annual

(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 application area experiences an arid (semi-desert) tropical climate with summer cyclonic rains or thunderstorm events, with an annual evaporation rate which greatly exceeds rainfall (GIS Database). Any surface water resulting from rainfall events is likely to be relatively short lived.

Given the size of the area to be cleared (80 hectares) compared to the size of the Fortescue River catchment area (2,975,192 hectares) (GIS Database) it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

Methodology GIS Database:
- Evoporation Isopleths
- Hydrographic Catchments - Catchments
- Hydrography, Linear
- Rainfall Mean Annual

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There is one Native Title Claim (WC05/6) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure 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*.

There are several Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of 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.

The clearing permit application was advertised on 26 December 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

BHP Billiton Iron Ore Pty Ltd (2012) Orebody 29 Overburden Stockpile Storage Area - Application for a Native Vegetation Clearing Permit under the *Environmental Protection Act 1986* - March 2012

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley subregion) Department of Conservation and Land Management, Western Australia.

CALM (1999). Environmental Weed Strategy for Western Australia. Department of Conservation and Land Management, Perth, Western Australia.

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.

Department of Water (2012) Clearing Permit CPS 4998/1 advice for BHP Billiton Iron Ore Pty Ltd Orebody 29 Proposal received 31 July 2012.

ENV Australia (2011) Mt Whaleback East Flora, Vegetation and Fauna Assessment. Prepared for BHP Billiton Iron Ore Pty Ltd.

Government of Western Australia (2011) Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

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

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A & Hennig, P. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia, Department of Agriculture, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System

ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

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} :-

P1 **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.

P2 **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.

X **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.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

Schedule 1 **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 **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 **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 **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} :-

P1 **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.

P3 **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.