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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2835/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Fortescue Metals Group Limited**

1.3. Property details

Property:
Local Government Area: Shire of East Pilbara
Colloquial name: Mining Lease 45/1177

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
16.38		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	Clearing Description	Vegetation Condition	Comment
The vegetation of the application area is broadly mapped as Beard Vegetation Association 173: Hummock grasslands, low tree steppe; kanji over soft spinifex & *Triodia brizoides* (GIS Database). Biota (2004) describe the vegetation of the application area as: *Acacia aneura, A. adsurgens, Grevillea wickhamii, Senna glutinosa subsp. glutinosa, S. glutinosa subsp. x luerssenii* scattered shrubs over *Triodia aff. basedowii* mid-dense hummock grassland.	Fortescue Metals Group Limited (FMG) have applied for an area permit to clear up to 16.38 hectares. The proposed clearing is for the purposes of constructing a quarry to source ballast for the duplication of the FMG rail line between Cloudbreak mine to Chainage 90 (FMG, 2008).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The vegetation condition was derived from descriptions by Biota (2004) and FMG (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 application area is located within the Chichester subregion of the Pilbara Interim Biogeographic Regionalisation of 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, 2001).

Locations of high biodiversity in the local area have been noted as Mulga woodland on clayey plains or creeklines (Biota, 2004). This type of biological and physical habitat does not occur within the application area (Biota, 2004). The vegetation of the application area has been recorded as growing on stony plains and low hills and was mapped as *Acacia aneura, A. adsurgens, Grevillea wickhamii, Senna glutinosa subsp. glutinosa, S. glutinosa subsp. x luerssenii* scattered shrubs over *Triodia aff. basedowii* mid-dense hummock grassland. Biota (2004) considered this vegetation type to be of moderate conservation significance due to factors ranging from the abundance of the vegetation type to levels of floristic richness.

The Biota (2004) vegetation report; the Coffey Environments Pty Ltd (2008a; 2008b) flora and fauna risk assessments; and the FMG (2008) mining proposal and supporting ducumentation all indicate that the application area contains flora and fauna diversity that is typical of the local area.

Factors which may reduce the biodiversity of the application area are its location on the Hillside Pastoral Lease and the close proximity to the existing rail line (FMG, 2008). In the opinion of the assessing officer, noise and dust build up from trains and vehicles using the rail and associated roads could potentially impact on biodiversity, as could grazing pressures from pastoral activities.

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

Methodology Biota (2004)
Coffey Environments Pty Ltd (2008a)
Coffey Environments Pty Ltd (2008b)
FMG (2008)
Kendrick and McKenzie (2001)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- Interim Biogeographic Regionalisation of Australia - subregions

(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

A grid search for fauna and fauna assemblages was undertaken over the application area as part of the broader rail survey in 2006 (Coffey Environments Pty Ltd, 2008a). Coffey Environments Pty Ltd (2008a) conducted a risk assessment for the potential occurrence of conservation significant fauna within the application area based on this survey and multiple surveys undertaken in the region in the past two years (Coffey Environments Pty Ltd, 2008a).

Based on the risk assessment and knowledge of other areas searched in the vicinity, Coffey Environments Pty Ltd (2008a) is confident that the risk to conservation significant terrestrial fauna or fauna assemblages is acceptable and therefore determine that clearing vegetation in this area (the application area) is unlikely to result in a significant impact on conservation significant fauna in the area.

The Biota (2004) flora survey indicated that the vegetation of the application area is well represented in the local and regional area. The abundance of similar vegetation both within and outside of the application area would indicate that it is unlikely the vegetation of the application area would represent significant habitat for fauna indigenous to Western Australia. No caves, permanent water sources, cliffs, rocky outcrops or any other habitat that may be perceived as important for fauna has been identified within the application area.

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

Methodology Biota (2004)
Coffey Environments Pty Ltd (2008a)

(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

Biota (2004) conducted a flora survey over the stage B rail corridor (160 kilometres long) which included the application area. As this flora report is on a broad scale, Coffey Environments Pty Ltd (2008b) conducted a risk assessment for significant flora (Declared Rare and Proirity Flora) over the application area.

Coffey Environments Pty Ltd (2008b) identified one species of Priority Flora (*Abutilon trugenii* – Priority 3) with the potential to occur in or utilise the vegetation of the application area. However, after the Coffey Environments Pty Ltd risk assessment was conducted this species has been removed from the Priority Flora list (Western Australian Herbarium, 1998-).

The vegetation associations within the application area are common and widespread within the Pilbara bioregion (Biota, 2004; FMG, 2008). Given the large expanses of similar vegetation in the surrounding area it is unlikely the vegetation of the application area would be specifically necessary for the continued existence of any species of Rare Flora.

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

Methodology Biota (2004)
Coffey Environments Pty Ltd (2008b)
FMG (2008)
Western Australian Herbarium (1998-)

(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) within the application area (GIS Database). The nearest known TEC is located approximately 100 kilometres south-west of the application area (GIS Database).

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

Methodology

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 application area is located within the Pilbara bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd et al. (2007) reports that approximately 99.9% of the pre-European vegetation still exists in the Pilbara bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 173: Hummock grasslands, low tree steppe; kanji over soft spinifex & *Triodia brizoides* (GIS Database). According to Shepherd et al. (2007) there is approximately 100% of this vegetation type remaining.

On a broader scale the Pilbara region has not been extensively cleared. Hence the application area is not considered to represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA bioregion - Pilbara	17,804,188	17,794,647	~99.9	Least Concern	6.3
Beard Vegetation Associations - WA					
173	1,420,793	1,420,793	~100	Least Concern	4.4
Beard Vegetation Associations - Pilbara bioregion					
173	1,421,376	1,421,376	~100	Least Concern	4.8

* Shepherd et al. (2007)
** Department of Natural Resources and Environment (2002)

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

Methodology

Department of Natural Resources and Environment (2002)
Shepherd et al. (2007)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- 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 at variance to this Principle

There are two ephemeral drainage lines which occur within the application area (GIS Database).

Based on the above, the proposed clearing is at variance to this Principle.

Although there are ephemeral drainage lines in the application area, no vegetation of riparian nature has been identified in the application area. The assemblage of vegetation within ephemeral drainage lines is similar to that of the vegetation in the surrounding areas (Biota, 2004).

Methodology

Biota (2004)
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 occurs in the Rocklea Land System (GIS Database). The Department of Agriculture and Food 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). This land system has a very low erosion hazard (Van Vreeswyk et al., 2004).

The proposed vegetation clearing is for the purpose of establishing a quarry to source ballast material used in railway construction (FMG, 2008). Therefore once vegetation has been removed the intention is to excavate a quarry resulting in some forms of controlled degradation to the land.

The clearing of native vegetation itself is unlikely to cause appreciable land degradation due to the secondary mining uses and the low susceptibility to erosion (Van Vreeswyk et al., 2004). Once mining of the land has ceased, rehabilitation will ensure that no long term degradation to the land will occur. Should a clearing permit be granted it is recommended that conditions be placed on the permit for the purpose of rehabilitation.

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

Methodology

FMG (2008)
Van Vreeswyk et al. (2004)
GIS Database
- Rangelands Landsystem 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

There are no conservation areas in the vicinity of the application area. The nearest DEC managed land is the Mungaroona Range National Park, approximately 57 kilometres north-west of the application area (GIS Database).

The Fortescue Marshes Environmentaly Sensitive Area (ESA) is located approximately 17 kilometres south of the application area (GIS Database). Given the distance between the proposed clearing and the Fortescue Marshes, it is unlikely the proposed clearing will impact on the environmental values of this ESA.

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

Methodology

GIS Database:
- CALM Managed Lands and Waters

(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 application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

There are no permanent water bodies or water courses within, or in proximity to the application area (GIS Database). Therefore, it is unlikely surface water quality would be impacted by this proposal.

In addition, it is unlikely the temporary removal of 16.38 hectares of native vegetation will result in the deterioration in the quality of groundwater, given the vast size of the Shaw River catchment area (790,203 hectares) (GIS Database) and the high percentage (approximately 100%) of existing pre-European vegetation cover remaining in the bioregion (Shepherd et al., 2007).

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

Methodology

Shepherd et al. (2007)
GIS Database:
- Hydrographic Catchments, Catchents
- 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

Due to the relatively small size of the application area (16.38 hectares) it is unlikely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding. Given that approximately 100% of the pre-European vegetation cover still exists in the local area (Shepherd et al. 2007) and the large size of the Shaw River catchment area (790,203) (GIS Database) in comparision to the proposed clearing size it is unlikely that the potential for flooding associated with this proposal will be increased.

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

Methodology

Shepherd et al. (2007)
GIS Database:
- Hydrographic Catchments - Catchents

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

Comments

The clearing permit application was advertised on 17 November 2008 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the application area (GIS Database). This claim (WC99-016) has been registered with the National Native Title Tribunal on behalf of the claimant group. 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 (ie. 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 no known 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 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.

Methodology

GIS Databases:
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

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

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

5. References

Biota Environmental Science (2004) Vegetation and Flora Survey of the Proposed FMG Stage B Rail Corridor and Mine Areas. Unpublished report for Fortescue Metals Group Limited, December 2004.

Coffey Environments Pty Ltd (2008a) Risk Assessment for Significant Fauna of GDP 2034, Perth, Western Australia.

Coffey Environments Pty Ltd (2008b) Risk Assessment for Significant Flora (Declared Rare and Priority Flora) of GDP 2034, 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.

Fortescue Metals Group Limited (2008) Ballast Quarry Mining Proposal, supporting documentation for a clearing permit application, September 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. (2001) 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.

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 and 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.
Western Australian Herbarium (1998-) FloraBase – The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/

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.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	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} :-

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.