Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3581/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Beadell Resources Limited**

1.3. Property details

Property: Exploration Licences 69/2066 and 69/2067
Local Government Area:
Colloquial name: N/A

1.4. Application

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

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: 18: Low woodland; mulga (*Acacia aneura*) (GIS Database; Shepherd, 2007).	Beadell Resources Limited (Beadell Resources) have applied to clear 18 hectares of native vegetation for the purpose of mineral exploration. However, as a result of discussions with the applicant, it was agreed to reduce the proposed clearing to 4.5 hectares. The reduction was based on a revised drilling program and because of limited flora and fauna work conducted in the area. Clearing is proposed to be undertaken with either a raised blade or driving over vegetation. Some areas around drill pads may need to be cleared with a lowered blade (Beadell Resources Ltd, 2010).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The assessing officer has derived the vegetation condition from viewing photographs of the application area provided by Beadell Resources.

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 Mann-Musgrave Block (CR1) subregion of the Central Ranges Interim Biogeographic Regionalisation of Australia bioregion (GIS Database). The Mann-Musgrave Block subregion is rich and diverse in both flora and fauna, however, most species are wide ranging and usually occur in at least one, and often several adjoining subregions (CALM, 2002).

The vegetation of the application area is broadly mapped as Beard vegetation association: 18: low woodland; mulga (*Acacia aneura*) (Shepherd, 2007). The vegetation type is wide ranging, with a current extent totalling approximately 1,075,161 hectares within the bioregion (Shepherd, 2007).

The application area occurs within an Environmentally Sensitive Areas (Registar of National Estate), Ranges of the Western Desert (GIS Database). According to the Australian Heritage Database (2009) the Ranges of the Western Desert are a system of ranges with many gorges and valleys. The ranges are dominated by spinifex steppe, mulga and mallee scrub (Australian Heritage Database, 2009). Beadell Resources (2010) have provided several photographs of the different vegetation communities within the application area. The vegetation appeared typical of the bioregion.

The biodiversity of the application area is difficult to quantify with the limited information provided by the applicant. No flora or fauna studies were conducted over the application area. Due to the limited information provided and a reduced drilling program it was agreed with the applicant to reduce the number of hectares applied to clear from 18 to 4.5. Given this reduction, impacts to biodiversity could be managed via the use of appropriate conditions relating to flora and fauna management.

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

Methodology Australian Heritage Database (2009)
Beadell Resources (2010)
CALM (2002)
Shepherd (2007)
GIS Database:
- IBRA WA (Regions Sub-regions)

(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 may be at variance to this Principle

A search of the Department of Environment and Conservation's Threatened and Priority Fauna Database was undertaken on 18 November 2008 (Department of Environment and Conservation, 2008a). The search was undertaken over a 100 kilometre radius from the application area within the following coordinates: -25.1539° S and 126.119° E / -27.1114° S and 128.3638° E (Department of Environment and Conservation, 2008a).

The search revealed the following records of conservation significant fauna that are listed in the *Wildlife Conservation* (Specially Protect Fauna) *Notice 2010*:

Schedule 1 – Fauna that is rare or likely to become extinct

- *Dasycerus cristicauda* – Crest-tailed Mulgara
- *Isoodon auratus auratus* – Golden Bandicoot
- *Macrotis lagotis* - Bilby
- *Myrmecobius fasciatus* - Numbat
- *Notoryctes sp.* – Marsupial Mole
- *Petrogale lateralis ssp.* - Black-footed Rock-wallaby
- *Leporillus conditor* - Greater Stick-nest Rat
- *Leipoa ocellata* - Malleefowl
- *Egernia kintorei* - Giant Desert Skink

Priority Three: Taxa with several, poorly known populations, some on conservation lands

- *Sminthopsis longicaudatus* – Long-tailed Dunnart

Although the nature of the proposed clearing is considered a low impact clearing activity (i.e. thin interspaced access tracks and drill pads) no reconnaissance fauna survey work has been conducted within the application area, therefore impacts of the proposed clearing on fauna and their habitats is hard to quantify. Given the lack of survey information, adherence to the precautionary principle in relation to the potential impacts to fauna would be advisable.

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

The assessing officer recommends that in order to adhere to the precautionary principle a flora management condition be imposed on the permit for the purposes of fauna management.

Methodology Department of Environment and Conservation (2008a)

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

Comments

Proposal may be at variance to this Principle

A search of the Department of Environment and Conservation's Rare and Priority Flora Database was undertaken, revealing the following conservation significant flora taxa in the vicinity of the proposed clearing area (Department of Environment and Conservation, 2008b):

- *Goodenia gibbosa* **-** Priority 1;
- *Calotis latiuscula* **-** Priority 3; and
- *Acacia calcicola* **-** Priority 4.

Although the nature of the proposed clearing is considered a low impact clearing activity (i.e. thin interspaced access tracks and drill pads) no reconnaissance flora survey work has been conducted within the application area, therefore the impacts of the proposed clearing on rare flora is difficult to quantify. Given the lack of survey information, adherence to the precautionary principle in relation to the potential impacts to rare flora would be advisable.

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

The assessing officer recommends that in order to adhere to the precautionary principle a flora management condition be imposed on the permit for the purposes of flora management.

Methodology Department of Environment and Conservation (2008b)

(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 Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest Threatened Ecological Community is located approximately 730 kilometres west-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 Sites

(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 Central Ranges Interim Biogeographic Regionalisation of Australia Bioregion (GIS Database). Shepherd (2007) report that approximately 100% of the pre-European vegetation still exists in this Bioregion (see table below). The vegetation in the application area is recorded as Beard Vegetation Association:

18: Low woodland; mulga (*Acacia aneura*) (GIS Database; Shepherd, 2007).

According to Shepherd (2007) approximately 100% of Beard vegetation association 18 remains within the Central Ranges Bioregion.

Therefore the vegetation within the application area is not a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Central Ranges	4,701,518	4,700,202	~100	Least Concern	~0.0
Beard veg assoc. – State					
18	19,892,437	19,890,348	~100	Least Concern	~2.1
Beard veg assoc. – Bioregion					
18	1,075,927	1,075,161	~99.9	Least Concern	~0.0

* Shepherd (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 (2007)
GIS Database:
- Pre-European Vegetation
- IBRA WA (Regions Sub-regions)

(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 may be at variance to this Principle**

There are several minor non-perennial drainage lines running through the application area (GIS Database). Based on the small size of the drainage lines in the application area, it is unlikely the vegetation associated with these would be classed as riparian.

The application area experiences a rainfall of approximately 249 millimetres/year according to the nearest recording station at Warburton Airfield (BoM, 2009). The application area also experiences a pan evaporation rate of approximately 3,200 millimetres/year (GIS Database). This suggests that any suface water flow would be utilised by vegetation quickly.

Based on the above, the proposed clearing is may be at variance to this Principle. However, as there are no examples riparian vegetation within the application area and the minor watercourses within the application area are only likely to flow following significant rainfall, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland.

Methodology BoM (2009)
GIS Database:
- Evaporation Isopleths
- 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 nature of the proposed clearing i.e. thin interspaced access tracks and drill pads, is considered a low impact clearing activity. Clearing is proposed to be undertaken with either a raised blade or driving over vegetation. Some areas around drill pads may need to be cleared with a lowered blade (Beadell Resources, 2010).

It is unlikely low impact clearing of such a nature will result in appreciable land degradation.

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

Methodology Beadell Resources (2010)

(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 application area occurs within the Ranges of the Western Desert Environmentaly Sensitive Area (Register of National Estate) (GIS Database).

According to the Australian Heritage Database (2009) the Ranges of the Western Desert are a system of ranges with many gorges and valleys. The ranges are dominated by spinifex steppe, mulga and mallee scrub (Australian Heritage Database, 2009).

Despite the area being on the Register of the National Estate for natural values, it is considered that the proposed clearing is low impact and of a small scale and will not significantly impact on the environmental values of the area.

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

Methodology Australian Heritage Database (2009)
GIS Database:
- Environmentally Sensitive Areas
- 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**

According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database).

There are no permanent water bodies or watercourses within the application area (GIS Database). The application area experiences a rainfall of approximately 249 millimetres/year according to the nearest recording station at Warburton Airfield (BoM, 2009). The application area also experiences a pan evaporation rate of approximately 3,200 millimetres/year (GIS Database). Therefore, there would be little surface water flows during normal seasonal rains. The proposed clearing is not likely to cause the quality of surface water to deteriorate.

The application area is located within the Musgrave Groundwater Province (GIS Database). The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the size of the area to be cleared (4.5 hectares) compared to the size of the Musgrave Groundwater Province (3,240,458 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

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

Methodology BoM (2009)
GIS Database
- Evaporation Isopleths
- Geodata, Lakes
- Public Drinking Water Source Areas
- Groundwater - Provinces
- Groundwater Salinity

(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

Given the small size (4.5 hectares) and the linear nature of the proposed clearing it is unlikely to cause an incremental rise in the frequency or duration of flooding. In addition, the application area has a slight relief with no bodies of water, or watercourses in close proximity (GIS Database).

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

Methodology GIS Database:
- Hydrography, linear
- Topographic Contours, Statewide

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 8 February 2010 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. This claim (WC04-003) has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenements have 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*.

According to available databases there is one registered Aboriginal Site 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 other Government bodies to determine whether any other licences or approvals are required for the proposed works.

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 may be at variance to Principles (b), (c), and (f) is not likely to be at variance to Principles (a), (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 fauna management, flora management, weed management, record keeping and permit reporting.

5. References

Australian Heritage Database (2009) http://www.environment.gov.au/cgi-bin/ahdb/search.pl (Accessed 5 March 2010).

Beadell Resources (2010) Supporting documentation for clearing permit application CPS 3581/1.

BoM (2009) Bureau of Meteorology Website - Climate Averages by Number, Averages for WARBURTON AIRFIELD. www.bom.gov.au/climate/averages/tables/cw_013011.shtml (Accessed 19 January 2009).

CALM (2002) A biodiversity audit of Western Australia's 53 biogeographical subregions in 2002. Department of Conservation and Land Management, Western Australia.

Department of Environment and Conservation (2008a) Threatened and Priority Fauna Database, Ngaanyatjarra-Giles area, 25.1539 S 126.119 E / 27.1114 S 128.3638 E.

Department of Environment and Conservation (2008b) Rare and Priority Flora Database Ngaanyatjarra-Giles area, 25.1539 S 126.119 E / 27.1114 S 128.3638 E.
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.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, 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.

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.