



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6183/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: Mining Lease 69/72
Mining Lease 69/73
Mining Lease 69/74
Mining Lease 69/75
Exploration Licence 69/2201
Local Government Area: Shire of Ngaanyatjarraku
Colloquial name: West Musgrave Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 7 August 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The application area has been broadly mapped as the following two Beard vegetation associations (GIS Database):

18: Low woodland; mulga between sand ridges; and
19: Low woodland; mulga (*Acacia aneura*).

Several flora surveys have been conducted over the application area since 2001 (Cassini Resources, 2014). Western Botanical (2014) has undertaken a review of these surveys and has identified the following vegetation associations within the application area:

- Mulga woodlands and groves on hardpan plains;
- Mulga and grasses on Calcrete rises;
- Mulga over Wanderrrie Grasses on shallow sand sheet;
- Sandplains with Spinifex;
- Sandplains with Mallee, Mulga and Spinifex; and
- Sand dunes with Grevillea and Acacia.

Clearing Description

West Musgrave Project.
Cassini Resources Limited proposes to clear up to 29.5 hectares of native vegetation within a total boundary of approximately 3,900 hectares, for the purpose of mineral exploration. The project is located approximately 580 kilometres northwest of Laverton, in the Shire of Ngaanyatjarraku.

Vegetation Condition

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

Comment

The vegetation condition is derived from Western Botanical (2014).

The clearing permit application area falls wholly within the footprint of clearing permit CPS 2028/2, which was granted to BHP Billiton Nickel West Pty Ltd (BHP) on 22 September 2011.

BHP surrendered clearing permit CPS 2028/2 in 2014, following the sale of the tenements to Cassini Resources Limited (Cassini Resources). Cassini Resources intend to continue the exploration drilling programme previously commenced by BHP. The proposed clearing is for drill pads and access tracks. Existing drill lines and tracks will be used wherever possible (Cassini Resources, 2014). The initial drilling programme will include approximately 309 drill holes at the Nebo and Babel deposits within tenements M69/72, M69/73 and M69/74.

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 is located within the Central Ranges Interim Biogeographic Regionalisation of Australia

(IBRA) bioregion, and the Central Ranges - Mann-Musgrave Block IBRA subregion (GIS Database).

Graham and Cowan (2001) assessed the biodiversity of the Mann-Musgrave Block IBRA subregion, finding that the subregion is rich and diverse in both its flora and fauna. However, most species are wide ranging and usually occur in at least one, and often several adjoining subregions (Graham and Cowan, 2014).

Western Botanical has conducted several flora and vegetation surveys in the application area and surrounding areas since 2001, and has reviewed these surveys in relation to the current application area (Western Botanical, 2014). A total of 172 native flora species have been recorded within the the various surveys. Western Botanical (2014) report that the majority of the identified species are widespread in Western Australia and more generally in Central Australia.

No Threatened or Priority Ecological Communities, or Threatened or Priority flora have been recorded within the application area (Western Botanical, 2014).

The vegetation and habitat types occurring within the application area are well represented in the region (GIS Database), and the application area is unlikely to be of higher biodiversity value than the surrounding areas.

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

Methodology Graham and Cowan (2001)
Western Botanical (2014)
GIS Database:
- IBRA WA (Regions – Subregions)
- Pre-European Vegetation

(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 types, landforms and habitat types within the application area are common and widespread in the region (Western Botanical, 2014).

There are no records of fauna of conservation significance occurring within the area applied to clear (GIS Database; Cassini Resources, 2014).

The vegetation proposed to be cleared is unlikely to represent significant habitat for fauna indigenous to Western Australia.

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

Methodology Cassini Resources (2014)
Western Botanical (2014)
GIS Database:
- Threatened Fauna

(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**
Flora surveys conducted over the application area and surrounding areas did not record any species of rare flora (Western Botanical, 2014).

The vegetation associations within the application area are common and widespread within the region (GIS Database), and the vegetation proposed to be cleared is unlikely to be 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 Western Botanical (2014)
GIS Database:
- Declared Rare and Priority Flora List
- Pre-European Vegetation

(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 (TECs) located within the application area (GIS Database). Surveys of the application area and nearby areas did not identify any Threatened Ecological

Communities (Western Botanical, 2014).

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

Methodology Western Botanical (2014)
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 area applied to be cleared is located within the Central Ranges IBRA bioregion (GIS Database). There is approximately 99.9% of pre-European vegetation remaining within the bioregion (Government of Western Australia, 2013).

The vegetation of the application area is broadly mapped as Beard vegetation associations: 18: Low woodland; mulga (*Acacia aneura*); and 19: Low woodland; mulga (*Acacia aneura*) (GIS Database). Approximately 99 - 100% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregion level (Government of Western Australia, 2013). Hence, the area proposed to be cleared does not represent a significant remnant of vegetation in an area that has been extensively cleared, at either the local or regional scale.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in DPaW managed lands
IBRA Bioregion – Central Ranges	4,701,520	4,700,180	~99.9	Least concern	0.0
Beard veg assoc. – State					
18	19,892,305	19,890,195	~100	Least concern	2.1
19	4,385,295	4,384,243	~100	Least concern	0.1
Beard veg assoc. – Bioregion					
18	1,075,927	1,075,151	~99.9	Least concern	0.0
19	902,251	902,166	~100	Least concern	0.0

* Government of Western Australia (2013)

** Department of Natural Resources and Environment (2002)

Although Beard Vegetation Associations 18 and 19 are not represented in conservation estate within the Bioregion, they remain largely undisturbed and are not considered to be at threat.

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 (2013)
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 likely to be at variance to this Principle

There are no permanent watercourses or waterbodies within the application area (Cassini Resources, 2014; GIS Database).

It is not anticipated that clearing access tracks and drill pads will have a significant impact on the regional hydrology of the area.

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

Methodology Cassini Resources (2014)
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 relatively small area and temporary nature of the proposed clearing for mineral exploration, is unlikely to result in appreciable land degradation (Cassini Resources, 2014).

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

Methodology Cassini Resources (2014)

(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 clearing is within the 'Ranges of the Western Desert', an area which is listed on the Register of National Estate (GIS Database) for its unique natural values (GIS Database). The ranges of the Western Desert covers an area of approximately 8 million hectares. The small area of the proposed clearing (29.5 hectares) is unlikely to have any significant impact on the natural values of this area.

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

Methodology GIS Database:
- Register of National Estate

(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 within a Public Drinking Water Source Area (GIS Database).

Groundwater within the application area is fresh to brackish, at between 1,000 - 3,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). The proposed clearing, is unlikely to have any significant impact on groundwater levels or quality.

The proposed clearing area is relatively flat, and is not associated with any permanent watercourses or waterbodies (GIS Database). The proposed clearing of approximately 29.5 hectares of native vegetation for mineral exploitation, is unlikely to cause any deterioration in surface water quality.

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

Methodology GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- Topographic Contours, Statewide

(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 falls within the Warburton Basin catchment area, which covers a total area of approximately 17,195,989 hectares (GIS Database).

The mean annual rainfall for the area is approximately 300 millimetres per year, while the evaporation of the area is at around 3,400 millimetres per year (GIS Database). Localised flooding may occur following heavy rainfall events. However, the proposed clearing of approximately 29.5 hectares within a total application area of approximately 3,900 hectares, is unlikely to increase the incidence or intensity of natural flooding events.

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

Methodology GIS Database:
- Evaporation Isopleths
- Hydrographic Catchments - Catchments
- Rainfall, Mean Annual

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

Comments

There is one native title claim over the area under application (GIS Database). This claim (WC04/3) was

determined by the Federal Court on 29 June 2005 (GIS Database). 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*.

According to available databases, there are no registered 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 Regulation, the Department of Parks and Wildlife, 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 21 July 2014 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

Methodology GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court
- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Registered with the NNTT

4. References

- Cassini Resources (2014) Clearing permit application. Cassini Resources, 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.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- Graham, D. and Cowan, M. (2001) *Central Ranges 1 (CR1 - Mann-Musgrave Block subregion)*, in A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Western Botanical (2014) Desktop Assessment of Flora and Vegetation, Babel and Nebo Tenements, West Musgraves Region. June 2014.

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.