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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5880/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: Mining Leases 04/235, 04/448
General Purpose Leases 04/33, 04/34, 04/35, 04/36, 04/37
Miscellaneous Licence 04/49

Local Government Area: Shire of Derby-West Kimberley
Colloquial name: Cockatoo Island Minesite

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 25 June 2015

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 Cockatoo Island has been broadly mapped as Beard vegetation association 8001: Grasslands, curly spinifex, low tree savanna; bloodwood (*Eucalyptus dichromophloia*) and woolybutt over curley spinifex, on islands (GIS Database). Flora and vegetation surveys conducted on Cockatoo Island have identified the following four vegetation associations within the application area (GHD, 2014): ***Eucalyptus* open woodland (EmW)** - *Eucalyptus miniata, Corymbia cadophora, Brachychiton diversifolius* open low woodland over *Calytrix exstipulata, Grevillea agrifolia* subsp. *agrifolia*, *Buchanania obovata* tall sparse shrubland over *Calytrix exstipulata, Bridelia tomentosa, Acacia stigmatophylla* sparse shrubland over *Dodonaea hispidula, Hibbertia lepidota, Acacia hippuroides* low shrubland over *Triodia bynoei* hummock grassland over *Sorghum plumosum, Heteropogon contortus, Eriachne avenacea*, *Cymbopogon* sp. Sparse tussock grassland over *Trachymene didiscoides* isolated herbs over *Cassytha candida, Gossypium costulatum* and often *Passiflora foetida* open vineland. This vegetation association is the most common vegetation association on the island and represents approximately 132 hectares of the application area; **Mosaic *Eucalyptus* open woodland (EmW) and *Dioscorea* vineland (DtV)** – This vegetation association will be minimally impacted, as the majority of this vegetation association occurs outside of the application area. Approximately 0.7 hectares occurs within the application area;	Cockatoo Island minesite. Pluton Resources Limited (Pluton) proposes to clear up to 15 hectares of native vegetation within a total boundary of approximately 257 hectares, for the purpose of mining related infrastructure associated with the existing minesite. The project is located on Cockatoo Island, approximately 130 kilometres north of Derby, in the Shire of Derby-West Kimberley.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994). To Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition was derived from vegetation surveys conducted by GHD Pty Ltd (GHD, 2013; 2014). Mining related infrastructure will include: overburden storage, seawall construction and maintenance, quarrying, tailings storage, road maintenance, laydown areas and rehabilitation activities (Pluton, 2013). The southern boundary of the clearing permit application area extends into the sea. The proponent has advised that this part of the application area is required to allow for potential clearing of terrestrial vegetation growing on the seawall. No clearing of marine vegetation is required for the project (GHD, 2014; Pluton, 2014). Clearing of marine vegetation is not authorised under this permit.

Mixed *Acacia* shrubland (AS) -
Acacia colei var. colei, Acacia tumida var. *tumida* tall shrubland. This vegetation association is not naturally occurring on the island, and is only found in a localised area (approximately 14 hectares) on the site of an old tailings dam; and

Highly disturbed - areas of existing disturbance. Approximately 127 ha of the application area has been previously disturbed and is either devoid of native vegetation or contains sparse regrowth vegetation.

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 may be at variance to this Principle

Cockatoo Island is one of the hundreds of islands which make up the Buccaneer Archipelago, and is located approximately six kilometres from the Kimberley coastline and approximately 130 kilometres north of the town of Derby. The island is approximately 520 hectares in size, approximately six kilometres long and approximately one kilometre wide (GIS Database; GHD, 2014). The clearing permit application area is approximately 257 hectares, covering existing minesite operations and some areas of undisturbed native vegetation. Approximately 15 hectares of native vegetation is proposed to be cleared within the application area, for the purposes of construction and maintenance of mining related infrastructure.

GHD Pty Ltd (GHD) conducted a Level 2 vegetation, flora and fauna survey of the application area, which included a desktop survey and two field surveys, in August 2013 (the dry season) and February 2014 (the wet season) (GHD, 2014). A follow up survey targeting conservation significant flora and fauna was conducted in August 2014 (GHD, 2014).

Large sections of the application area have been previously disturbed and are either cleared or contain regrowth vegetation that is not considered a naturally occurring vegetation type on the Island. Approximately 133 hectares of the application area contains native vegetation ('*Eucalyptus* open woodland' and 'mosaic *Eucalyptus* open woodland and *Dioscorea* Vineland'); however, these vegetation types are well represented outside of the application area (GHD, 2014).

The baseline vegetation and flora assessments of the island identified two vegetation communities that are considered as 'other significant vegetation' (Pluton, 2013) (*Dioscorea* Vineland; DtV and *Aegiceras* open shrubland; AcS). These vegetation types do not occur within the application area and therefore will not be impacted by the proposed clearing.

One Priority Flora species has been recorded on Cockatoo Island: *Minuria macrorhiza* (Priority 2). This species has been recorded over a relatively wide range in three Bioregions (Central Kimberley, Northern Kimberley, and Victoria Bonaparte) (Western Australian Herbarium, 2015). GHD (2014) undertook a targeted flora survey for this species in August 2014, and it was not found within the application area.

During flora surveys, an undescribed *Triodia* species was collected (GHD, 2014; Pluton, 2013). The Western Australian Herbarium has advised that this species is likely to be listed as Priority flora (GHD, 2014). A flora management condition may reduce the potential impacts to this species.

A desktop review of available databases conducted by GHD identified a total of 45 species of conservation significant fauna with the potential to occur within the application area, based on known distributions (Pluton, 2013). Of these, 13 species have been recorded on the island, including one reptile, the saltwater crocodile (Schedule 4), three Priority listed species, *Macroderma gigas* (Ghost Bat) - Priority 4; *Hipposideros stenotus* (Northern Leaf-nosed Bat) - Priority 2, *Hydromys chrysogaster* (Water Rat) - Priority 4, and nine species of marine or migratory birds (Pluton, 2013).

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

Methodology

GHD (2014)
Pluton (2013)
GIS Database:
- Yampi 50cm Orthomosaic – Landgate 2004

(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

Pluton (2013) identified the following fauna habitats within the application area:

- Disturbed, cleared, modified;
- Rocky coastline;

- Woodland;
- Regrowth shrubland; and
- Rocky hummock grassland.

The "Woodland" and "Disturbed, cleared, modified" habitat types represent approximately 53 percent and 44 percent, respectively, of the 257 hectare application area (Pluton, 2013). However, it should be noted that only 15 hectares of clearing is proposed within the total application area. GHD (2014) reported that all habitats are well represented outside the application area.

The Masked Owl (northern) *Tyto novaehollandiae kimberli* (Priority 1) is considered to be the fauna species most at risk from habitat clearing, as it requires large tree hollows for nesting and suitable hollows are only found within the woodland habitat (GHD, 2014). A fauna management condition may minimise the potential impacts to this species.

The application area is immediately adjacent to existing mining related disturbance and is unlikely to represent significant fauna habitat in comparison to other undisturbed parts of the island.

The proposed clearing of up to 15 hectares of native vegetation within a total area of approximately 257 hectares, within or immediately adjacent to the existing minesite, is unlikely to have any significant impact on available fauna habitats at either a local or regional scale.

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

Methodology GHD (2014)
Pluton (2013)
GIS Database:
- Pre-European Vegetation
- 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**
There are no known species of Declared Rare Flora (DRF) on Cockatoo Island (GIS Database; Pluton, 2013).

The vegetation associations within the application area are well represented on the island (GIS Database; Pluton, 2013), 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 Pluton (2013)
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 (TEC's) located on Cockatoo Island (GIS Database). Surveys of the application area and nearby areas did not identify any Threatened Ecological Communities (Pluton, 2013).

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

Methodology Pluton (2013)
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 Northern Kimberley IBRA bioregion (GIS Database). There is approximately 98% 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 association: 8001: Grasslands, curly spinifex, low tree savanna; bloodwood (*Eucalyptus dichromophloia*) & woolybutt over curley

spinifex, on islands (GIS Database). Approximately 86% and 91% of the pre-European extent of this vegetation association remains uncleared at the state and bioregion level, respectively (Government of Western Australia, 2013).

The proposed clearing is located on Cockatoo Island, within and immediately adjacent to the existing minesite. The island is approximately 520 hectares in size, and approximately 50% of the island remains uncleared (GIS Database). 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 IUCN Class I-IV Reserves
IBRA Bioregion – Northern Kimberley	8,332,025	8,197,303	~ 98	Least Concern	14.57
Beard vegetation associations - State					
8001	237,440	203,757	~ 86	Least Concern	<0.01
Beard vegetation associations - Bioregion					
8001	219,928	200,504	~ 91	Least Concern	0

* Government of Western Australia (2013)
** 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)
Government of Western Australia (2013)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation
- Yampi 50cm Orthomosaic – Landgate 2004

(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 no permanent watercourses, wetlands or riparian vegetation within the application area (GIS Database; Pluton, 2013). Several minor non-perennial watercourses pass through the application area (GIS Database). These drainage lines are dry for most of the year, only flowing briefly following significant rainfall events (Pluton, 2013). The vegetation associated with these drainage lines is the same as that of adjacent areas, and is not considered to be riparian (GIS Database; Pluton, 2013).

Based on the above, the proposed clearing is at variance to this Principle. However, the proposed clearing of 15 hectares of native vegetation within a total application area of approximately 257 hectares is unlikely to result in any significant impact on these ephemeral watercourses.

Methodology Pluton (2013)
GIS Database:
- Geodata, Lakes
- Hydrography, linear
- Pre-European Vegetation
- Reedy 50cm Orthomosaic - Landgate 2005
- Wynyangoo 50cm Orthomosaic - Landgate 2005

(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 is broadly mapped as the Precipice land system (GIS Database).

The Precipice Land System is generally characterised by rocky mountainous sandstone country, with hills, ranges and plateaux, supporting low open eucalypt woodlands with curly spinifex (Payne and Schoknecht, 2011). The terrain of Cockatoo Island is rugged and characterised by steep cliffs and deeply incised gullies Pluton, 2013). Due to the rocky nature of the landscape, this land system is generally not susceptible to erosion

(Pluton, 2013).

Clearing will be kept to the minimum possible and erosion control measures will be utilised to minimise potential erosion (Pluton, 2013). The proposed clearing is unlikely to result in appreciable land degradation.

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

Methodology Payne and Schoknecht (2011)
Pluton (2013)
GIS Database:
- Geodata, Lakes
- Hydrography, linear
- 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 nearest conservation area to the Cockatoo Island is the Lalang-garram/Camden Sound Marine Park, which is located approximately 14 kilometres northeast of the application area, at its nearest point (GIS Database). The proposed clearing is unlikely to have any impacts on the environmental values of this or any other conservation area.

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

Methodology GIS Database:
- DEC proposed 2015 pastoral lease exclusions
- 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 application area is not within a Public Drinking Water Source Area (GIS Database).

There are no permanent watercourses or wetlands within the application area (GIS Database). Several minor, non-perennial watercourses pass through the application area (GIS Database). These seasonal drainage lines are dry for most of the year, only flowing briefly following significant rainfall events (Pluton, 2013). Surface drainage will be redirected around cleared areas, maintaining surface water flows to downstream vegetation (Pluton, 2013).

The proposed clearing of 15 hectares of native vegetation is unlikely to have any significant impact on groundwater levels or quality.

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

Methodology Pluton (2013)
GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSAs)

(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 climate of the West Kimberley region is semi-arid and monsoonal, with defined wet and dry seasons and an average rainfall of approximately 970 millimetres per year, occurring mostly between December and April (Payne and Schoknecht, 2011; Pluton, 2013). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (Payne and Schoknecht, 2011).

There are no permanent water courses or waterbodies within the application area (GIS Database). Temporary localised flooding may result from occasional heavy rainfall events (Payne and Schoknecht, 2011). However, the proposed clearing 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 Pluton (2013)
Payne and Schoknecht (2011)
GIS Database:

- Hydrography, linear

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

Comments

The clearing permit application was advertised on 18 November 2013 by the Department of Mines and Petroleum inviting submissions from the public. Three submissions were received in relation to this application. One submission raised no objections to the proposal. Two submissions raised concerns in relation to native title and Aboriginal heritage issues. Written responses were provided on the matters raised.

There is one native title claim (WC1999/007) 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 no 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 Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation 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 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

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.

GHD (2013) Cockatoo Island Flora and Vegetation survey. Report prepared for Pluton Resources. GHD Pty Ltd, Perth, Western Australia.

GHD (2014) Cockatoo Island Mine Expansion. Clearing Permit Application Data. Report prepared for Pluton Resources. GHD Pty Ltd, Perth, 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.

Payne, A., and Schoknecht, N. (2011) Land Systems of the Kimberley Region, Western Australia. Technical Bulletin No.98. Department of Agriculture and Food, Western Australia.

Pluton (2013) Purpose Permit Clearing Permit Application. Pluton Resources Limited. October, 2013.

Western Australian Herbarium (2015) FloraBase - the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
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
PEC	Priority Ecological Community, Western Australia
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:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened Fauna and Flora are further recognised by DPaW according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.

X **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).

IA **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.

S **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P1 **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

P2 **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

P3 **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

P5 **Priority Five - Conservation Dependent species:**
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.