



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4912/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Whitfield Minerals Pty Ltd

1.3. Property details

Property: Mining Lease 63/528
Mining Lease 63/170
Mining Lease 63/148
Local Government Area: Shire of Dundas
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
8		Mechanical Removal	Gypsum Mining

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 July 2012

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard vegetation associations have been mapped for the whole of Western Australia. Three Beard vegetation associations have been mapped within the application area (GIS Database):</p> <p>9: Medium woodland; coral gum (<i>Eucalyptus torquate</i>) & goldfields blackbutt (<i>E. le soufii</i>);</p> <p>125: Bare areas; salt lakes; and</p> <p>3106: Medium woodland; salmon gum & Dundas blackbutt.</p> <p>A level 1 desktop and reconnaissance flora survey of the application area was undertaken by Native Vegetation Solutions (2012) which identified the following five vegetation types within the application area:</p> <ul style="list-style-type: none"> - <i>Eucalyptus salicola</i> woodland on gypsum dunes; - <i>Casuarina pauper</i> and <i>Callitris columellaris</i> over <i>Melaleuca quadrifaria</i> and <i>Darwinia</i> sp. Karonie Shrubland; - <i>Tecticornia</i> Shrubland; - <i>Eucalyptus salicola</i> open woodland over <i>Casuarina pauper</i>, <i>Callitris columellaris</i> and <i>Melaleuca quadrifaria</i> shrubland; and - <i>Casuarina pauper</i> and <i>Callitris columellaris</i> over <i>Melaleuca quadrifaria</i> shrubland. 	<p>Whitfield Minerals Pty Ltd has applied to clear up to 8 hectares of native vegetation for the purpose of gypsum mining.</p> <p>The proposed clearing is located at Lake Cowan approximately 5.6 kilometres south-west of Norseman.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).</p> <p>To:</p> <p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).</p>	<p>The vegetation condition was assessed during a flora survey of the application area conducted by Native Vegetation Solutions (2012).</p>

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 Eastern Goldfield subregion of the Coolgardie Interim biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by Mallees, Acacia thickets and shrubheaths on sandplains. Diverse eucalyptus woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire (CALM, 2002).

The vegetation within the application area consists of Beard vegetation associations 9, 125 and 3106 which are well represented regionally and remain largely uncleared throughout the Coolgardie region (GIS Database; Government of Western Australia, 2011).

Native Vegetation Solutions (2012) undertook a desktop and reconnaissance flora survey of the application area in April 2012. A total of 19 Families, 34 Genera and 52 Species were recorded within the survey area. Five vegetation types were recorded in the survey area in degraded to very good condition (Keighery, 1994; Native Vegetation Solutions, 2012). Disturbance was from historic mineral exploration and extraction (Native Vegetation Solutions, 2012). No weed species were identified, however the implementation of a weed management condition will minimise the risk of the introduction of weeds to the application area.

None of the vegetation types identified are listed as Threatened Ecological Communities or Priority Ecological communities (GIS Database; Native Vegetation Solutions, 2012). No Threatened Flora species pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act 1950* or Priority Flora were recorded within the survey area. No plant species listed under the *Environment Protection Biodiversity Conservation Act 1999* were found within the survey area (Native Vegetation Solutions, 2012).

A previous flora survey undertaken by Western Botanical in November 2004 identified low numbers of the Priority 2 species *Asteridea archeri* along the western slope of Mining Lease 63/528 however this species was not identified in the 2012 survey conducted by Native Vegetation Solutions. Given that the vegetation types found within the application area are well represented within the region (GIS Database; Government of Western Australia, 2011) the proposed clearing would be unlikely to represent significant habitat for this species.

The vegetation within the application area consists of three Beard vegetation associations 9, 125 and 3106 which are well represented regionally and remain largely uncleared throughout the Coolgardie region (GIS Database; Government of Western Australia, 2011). A survey conducted by Native Vegetation Solutions (2012) identified five vegetation types but did not identify any significant fauna habitat features associated with the Lake Cowan salt lake and the application area is unlikely to represent a significant habitat for fauna.

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

Methodology CALM (2002)
Government of Western Australia (2011)
Native Vegetation Solutions (2012)
Western Botanical (2004)
GIS Database
- IBRA WA (Regions - Sub Regions)
- 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 within the application area consists of Beard vegetation associations 9, 125 and 3106 which are well represented regionally and remain largely uncleared throughout the Coolgardie region (GIS Database; Government of Western Australia, 2011).

A survey conducted by Native Vegetation Solutions (2012) identified five plant communities within the application area which are considered to be well represented outside of the application area (Native Vegetation Solutions, 2012). The condition of the vegetation ranged from degraded to very good (Keighery, 1994) as a result of historic mineral exploration and extraction (Native Vegetation Solutions, 2012).

A search of Department of Environment and Conservation (DEC) databases identified two records of conservation significant fauna within the local area (10 kilometre radius): the Carpet Python (*Morelia spilota imbricata* - DEC Schedule 4) and the Rainbow bee-eater (*Merops ornatus* - DEC Schedule 3; EPBC - Migratory) (DEC, 2012). However, the application area is disturbed due to previous mining activities and surrounded by vegetation which is in excellent condition and likely to provide extensive habitat for these species. The application area is located within the Lake Cowan salt Lake and considering the lack of habitat features within the application area (GIS Database; Native Vegetation Solutions, 2012) it is unlikely that the application area represents a significant habitat for fauna or a significant ecological linkage.

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

Methodology DEC (2012)
Native Vegetation Solutions (2012)
Government of Western Australia (2011)
GIS Database
- IBRA WA (Regions - Sub Regions)
- Norseman 1.4m Orthomosaic - Landgate 2003
- Pre-European Vegetation

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

Comments Proposal is not likely to be at variance to this Principle

According to available databases, there is no recorded Threatened Flora within the application area (GIS Database). Native Vegetation Solutions (2012) undertook a desktop and reconnaissance flora survey of the application area in April 2012. No Threatened Flora species were recorded.

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

Methodology Native Vegetation Solutions (2012)
GIS Database
- Declared Rare and Priority Flora List

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

According to available databases, there are no recorded Threatened Ecological Communities (TECs) within the application area (GIS Database). Native Vegetation Solutions (2012) undertook a desktop and reconnaissance flora survey of the application area in April 2012, during which no TECs were recorded.

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

Methodology Native Vegetation Solutions (2012)
GIS Database
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The application area is located within the Eastern Goldfield subregion of the Coolgardie Interim biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database) in which approximately 99.89% of the pre-European vegetation remains (Government of Western Australia, 2011).

The vegetation of the application area has been mapped as Beard vegetation associations 9, 125 and 3106 (GIS Database) which have over 93% remaining of their Pre-European vegetation extent at the state and bioregional level (see table) (GIS Database; Government of Western Australia, 2011). These vegetation types are well represented regionally and remain largely uncleared throughout the Coolgardie region (GIS Database; Government of Western Australia, 2011). Therefore, the area proposed to be cleared does not represent 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 – Coolgardie	12,912,204	12,677,931	~98.19	Least Concern	10.86
Beard veg assoc. – State					
9	240,509	235,161	~97.78	Least Concern	1.26
125	3,492,381	3,269,266	~93.61	Least Concern	5.00
3106	52,660	51,574	~97.94	Least Concern	5.93
Beard veg assoc. – Bioregion					
9	240,441	235,100	~99.78	Least Concern	1.26
125	545,717	539,091	~98.79	Least Concern	4.44
3106	52,659	51,573	~97.94	Least Concern	5.93

*Government of Western Australia (2011)

**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 (2011)
GIS Database
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is at variance to this Principle

The application area is located within Lake Cowan which is mapped as a non-perennial lake (GIS Database). A survey conducted by Native Vegetation Solutions (2012) identified riparian vegetation within the survey area. The riparian vegetation identified within the survey area occurs upon a series of dunes on the Lake Cowan surface. The vegetation is typical of gypsiferous dunes around salt lakes. Native Vegetation Solutions (2012) have identified that the clearing of this vegetation is unlikely to significantly affect the ecological communities associated with the lake as it represents only a relatively small proportion of the local vegetation association.

Given that the vegetation types within the application area are well represented both locally and regionally it is unlikely that the proposed clearing will have any significant environmental impact.

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

Methodology Native Vegetation Solutions (2012)
GIS Database
- Norseman 1.4m Orthomosaic - Landgate 2003
- Hydrography, lakes
- Hydrography, linear
- Rivers

(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

There is one mapped soil type within the application area SV2: Saline valleys with some dunes including barchan forms - salt lake channels, mostly devoid of true soils, and their fringing areas (Northcote et al., 1960-68).

The application area is located within Lake Cowan which is a non-perennial salt lake (GIS Database) and the vegetation to be cleared consists of predominantly salt tolerant species. The application area is flat with only small changes in topography and is also located in an area where the average annual evaporation rate (2200 millimetres) greatly exceeds the local annual rainfall (300 millimetres) (GIS Database). Given the above there is unlikely to be any significant surface water movement and the application area has a low risk of water erosion.

The application area is located within a salt lake and salinity levels are already high (greater than 35,000 milligrams per litre Total Dissolved Solids). Given the sandy nature of the soils associated with dunes within the lake there may be some risk of wind erosion following the removal vegetation, however, the removal of 8 hectares of native vegetation in this area is unlikely to cause appreciable land degradation.

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

Methodology Northcote et al. (1960-68)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity
- Rainfall, Mean Annual
- Soils, Statewide
- Topographic contours

(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 is not situated within a conservation area (GIS Database). The nearest conservation area is an unnamed timber reserve vested to the Conservation Commission located approximately 6 kilometres south-east 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
- 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 located within a Public Drinking Water Source Area (PDWSA) (GIS Database). Groundwater within the application area is 'hyper-saline' with average salinity above 35,000 milligrams per Litre Total Dissolved Solids (GIS Database). Average annual rainfall is low at 300 millimetres (GIS Database), therefore surface water flow is likely to be low during normal seasonal rains. Furthermore, as the application area experiences an average annual evaporation rate of 2200 millimetres (GIS Database), during normal rainfall events, surface water within the application area is likely to evaporate quickly and removal of vegetation is unlikely to contribute to a rising saline watertable or deterioration in the quality of surface water.

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

Methodology GIS Database
- Evaporation Isopleths
- Groundwater Salinity
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSA's)
- Rainfall

(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

Average annual rainfall in the application area is low at 300 millimetres (GIS Database), therefore surface water flow is likely to be low during normal seasonal rains. Furthermore, as the application area experiences an average annual evaporation rate of 2200 millimetres (GIS Database), during normal rainfall events, surface water within the application area is likely to evaporate quickly

The application area is within the Balladonia catchment area which covers approximately 3,483,410 hectares (GIS Database). Given the size of the area to be cleared (8 hectares) in relation to the size of the catchment area, the proposed clearing is not likely to increase the incidence or intensity of flooding.

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

Methodology GIS Database
- Evaporation Isopleths
- Hydrographic Catchments - catchments
- Hydrography, linear
- Rainfall

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

Comments

There is one native title claim (WC99/2) over the application area (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 (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 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 proponents' responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 29 February 2012 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 NNTT

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Ord Victoria Plains 1 (OVP1 – Ord subregion) Department of Conservation and Land Management, Western Australia.
- DEC (2012) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, <<http://naturemap.dec.wa.gov.au>>.
- 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 (2011) 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Native Vegetation Solutions (2012) Level 1 Flora and Vegetation Survey of Lake Cowan Gypsum Operations. Prepared for Whitfield Minerals Pty Ltd. June 2012.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Western Botanical (2004) Botanical Survey of Mining Leases M63/528 & M63/529, Lake Cowan, Norseman, WA. Prepared for Whitfield Minerals Pty Ltd, 16 November 2004.

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.