



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 2404/4
Permit Holder:	HBJ Minerals Pty Ltd
Duration of Permit:	29 June 2008 – 29 June 2030

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of mineral exploration, mineral production and mining infrastructure.

2. Land on which clearing is to be done

Lot 50 on Deposited Plan 226299, Feysville
Lot 62 on Deposited Plan 101674, Feysville
Lot 15 on Deposited Plan 58833, Feysville
Crown Reserve 2954, Feysville

3. Area of Clearing

The Permit Holder must not clear more than 215 hectares of native vegetation within the area cross-hatched yellow on attached Plan 2404/4.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 29 June 2025.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared for the purposes of mineral exploration the Permit holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

7. Fauna Management

- (a) Prior to clearing, the site shall be walked, inspected and surveyed by a *fauna specialist* to identify the presence of Malleefowl (*Leipoa ocellata*) mounds.
- (b) The Permit holder shall not clear within 50 metres of Malleefowl (*Leipoa ocellata*) mounds identified in condition 7(a) above.

8. Flora management

- (a) Prior to undertaking any clearing, the Permit Holder shall engage a *botanist* to undertake a Level 1 survey of the area(s) to be cleared in accordance with *Guidance Statement No. 51* to identify possible occurrences of, and habitat suitable for, rare and *priority flora*.
- (b) Prior to undertaking any clearing, where an area has been identified in accordance with condition 8(a) as containing possible occurrences of, and habitat suitable for, rare or *priority flora*, the Permit Holder shall engage a *botanist* to inspect that area for the presence of rare and *priority flora*.
- (c) Where rare flora or *priority flora* are identified in relation to condition 8(b) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing occurs within 50 metres of identified rare or priority 1 flora, unless approved by the CEO in writing;
 - (ii) no clearing of identified rare flora occurs unless approved under section 23F(4)(a) of the *Wildlife Conservation Act 1950*;
 - (iii) no clearing occurs within 20 metres of identified priority 2, 3 and 4 flora, unless approved by the CEO in writing; and
 - (iv) no clearing of identified *priority flora* occurs unless approved by the CEO in writing

9. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) prior to 29 June 2025 *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
 - (ii) ripping the ground on the contour to remove soil compaction; and
 - (iii) ripping the pit floor and contour batters within the extraction site; and
 - (iv) laying the vegetative material and topsoil retained under condition 9(a) on the cleared area(s).
- (c) within 18 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 9(b) of this Permit:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 9(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 9(c)(ii) of this permit, the Permit Holder shall repeat condition 9(c)(i) and 9(c)(ii) within 18 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
- (e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 9(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 9(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 9(c)(ii).

10. Weed control

When undertaking any clearing or other activity pursuant to this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (a) Clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) Ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) Restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

PART III - RECORD KEEPING AND REPORTING

11. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to flora management pursuant to condition 8 of this Permit:
 - (i) the location of each rare and/or *priority flora* species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the species name of each rare or *priority flora* species identified; and
 - (iii) a copy of the *botanist's* flora survey report.
- (c) In relation to fauna management pursuant to condition 7:
 - (i) The location of each Malleefowl mound in accordance with condition 7(a) recorded using Geocentric Datum Australia 1994.
- (d) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 9 of this Permit:
 - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

12. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 11 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 31 December of each year.
- (c) Prior to 28 February 2030, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

botanist: means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience in identification and surveys of flora native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

fill means material used to increase the ground level, or fill a hollow;

Guidance Statement No. 51 means the Environmental Protection Authority Guidance Statement No 51, Guidance for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (2004);

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Parks and Wildlife's Threatened and Priority Flora List for Western Australia* (as amended);

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area.

revegetate/ed/ion, means the re-establishment of a cover of native vegetation in an area such that the species composition, structure, density and *condition* is similar to pre-clearing vegetation types in that area, and can involve regeneration, direct seeding and/or planting.

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

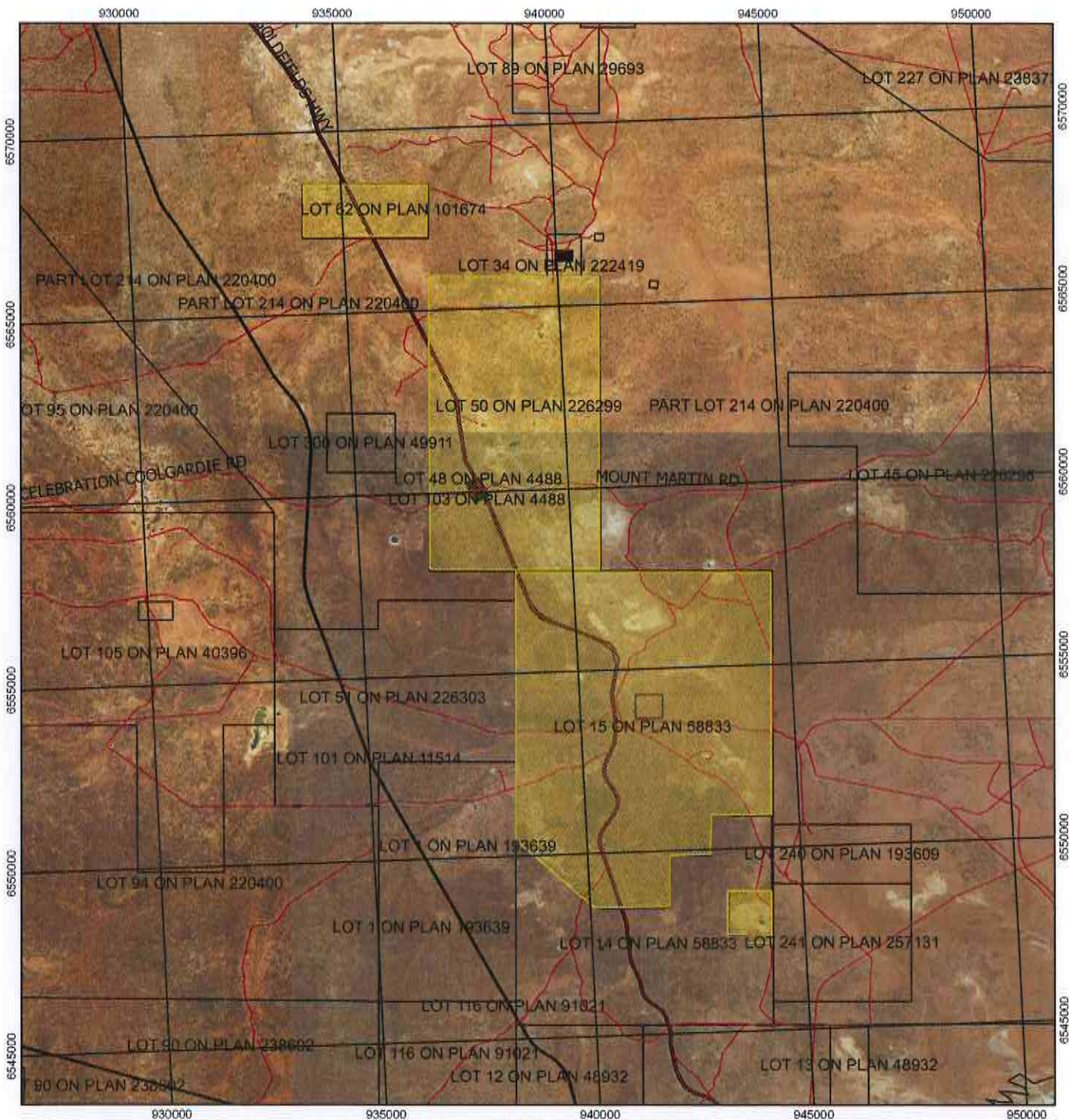


M Warnock
SENIOR MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

19 March 2015

Plan 2404/4



Legend

- Areas approved to clear
- Roads
- Cadastre
- Virtual Mosaic
-



1:100,000

MGA 94
Geocentric Datum of Australia 1994

Matt Warnock 19/3/15
Date.....

Matt Warnock

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 2404/4
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: HBJ Minerals Pty Ltd

1.3. Property details

Property: LOT 62 ON PLAN 101674 (FEYSVILLE 6431)
LOT 50 ON PLAN 226299 (FEYSVILLE 6431)
LOT 15 ON PLAN 58833 (FEYSVILLE 6431)
CROWN RESERVE 2954 (FEYSVILLE 6431)
Local Government Authority: City of Kalgoorlie-Boulder

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 19 March 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
Mapped Beard vegetation association: 9: Medium woodland; coral gum (Eucalyptus torquata) & goldfields blackbutt (E. le souffii), (also some e10,11)	The areas under application are for the clearing of 215 hectares for the purposes of mineral exploration, mineral production and mining infrastructure. The proposed clearing includes 125 hectares within an approximate 5,000 hectare project area in Lot 15; 80 hectares within an approximate 3,200 hectare project area in Lot 50 and 10 hectares within an approximate 400 hectare project area in Lot 62. The areas are located approximately 30 to 40 kilometres south-east of the Kalgoorlie-Boulder town site.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The proposal is to amend CPS 2404/3 to include the additional purpose of mineral production and mining infrastructure. The areas under application have been subject to a history of extensive timber cutting for firewood and livestock grazing (HBJ Minerals, 2008). Further, aerial photography shows the existing mining infrastructure, public roads and a railway line within the areas under application (project areas).
468: Medium woodland; salmon gum & goldfields blackbutt		To	The vegetation within the areas in which clearing is to occur consists of 19 different vegetation habitat types (HBJ Minerals, 2008). The areas comprise predominantly Eucalypt woodlands on a variety of soils, Casuarina pauper on calcareous hardpan soils and an understorey that includes Acacia, Senna, Atriplex, Olearia and Eremophila species (HBJ Minerals, 2008).
221: Succulent steppe; saltbush			

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 at variance to this Principle**
The application is to amend CPS 2404/3 to include the additional purpose of mineral production and mining infrastructure. The clearing comprises 215 hectares of native vegetation within Lot 50 on Plan 226299 and Lot 62 on Plan 101674, Lot 15 on Plan 58833 and Crown Reserve 2954, Feysville.

The vegetation under application is predominantly common semi-arid and arid species typical of the Goldfields woodland vegetation (HBJ Minerals, 2008). The areas under application have been subjected to a history of grazing and exploration activities (Native Vegetation Solutions, 2012).

A Level 2 Flora and Vegetation Survey undertaken by Native Vegetation Solutions (2012) of the areas under application identified that the vegetation surveyed is in a good to very good (Keighery, 1994) condition.

Three priority flora taxa were recorded during a vegetation and flora survey undertaken by Western Botanical in 2003/2004, namely two Priority 3 (P3a and P3b) species and one Priority 1 species. An additional survey was undertaken by Native Vegetation Solutions in 2012 which identified the P3a species and two new priority species, one Priority 3 and one Priority 1 species.

The applicant is required to undertake pre-clearing targeted surveys of the application and surrounding area to determine the population extent and impact to the conservation status of these species. Where conservation significant taxa are recorded within the clearing footprint area, an assessment of the proportional local impact to the taxon should be provided (Department of Parks and Wildlife, 2015).

The results from a Level 1 Fauna Assessment undertaken by Bamford Consulting Ecologists (2012) confirm that the areas under application provide suitable habitat for the Malleefowl (*Leipoa ocellata*), given three old mounds and a feather attributable to this species was recorded within dense Acacia shrubland on a greenstone ridge within the application area.

No rare flora or priority or threatened ecological communities were observed during Level 2 Flora and Vegetation Surveys conducted in 2003/2004 by Western Botanical and in 2012 by Native Vegetation Solutions.

Given the vegetation under application includes, and may impact on the conservation status of priority flora, and may provide significant habitat for Malleefowl, it is considered that the areas under application comprise of a high level of biological diversity and the proposed clearing is at variance to this Principle. In order to reduce the impacts of the proposal on conservation significant flora and fauna, the applicant is required to revegetate the application area post clearing, conduct targeted flora surveys and engage a fauna specialist to walk, inspect and survey the site for Malleefowl prior to clearing.

Methodology

References:

- HBJ Minerals (2008)
- Native Vegetation Solutions (2012)
- Keighery (1994)
- Western Botanical (2003/2004)
- Parks and Wildlife (2015)
- Bamford Consulting Ecologists (2012)

GIS Databases:

- SAC Bio Datasets (Accessed February 2015)
- DPaW Tenure

(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

There are numerous fauna species of conservation significance recorded within the local area (50 kilometre radius). The areas under application are likely to provide suitable habitat for the South-west Carpet Python (*Morelia spilota imbricata*), Malleefowl (*Leipoa ocellata*), Western Slender-billed Thornbill (*Acanthiza iredalei iredalei*), Chuditch (*Dasyurus geoffroii*), Peregrine Falcon (*Falco peregrinus*), Major Mitchell's Cockatoo (*Lophochroa leadbeateri*), Western Rosella (*Platycercus icterotis xanthogenys*), Scarlet-chested Parrot (*Neophema splendida*), Greater Long-eared Bat (Central Form, *Nyctophilus timoriensis*) and Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) (DEC 2007-; Bamford Consulting Ecologists, 2012).

The South-west Carpet Python (*Morelia spilota imbricata*) has a preference for semi-arid coastal and inland habitats consisting of Banksia woodland, eucalypt woodlands and grasslands (DEC, 2012).

This species has declined due to large scale development, changed fire regimes and direct predation by exotic predators (foxes and feral cats) (DEC, 2012). This species may be a resident in the application areas, particularly in the 'Greenstone hills and rocky ridges supporting dense Acacia shrublands', mapped Vegetation and Substrate Associations (VSA), and in large, mature eucalypt trees (Bamford Consulting Ecologists, 2012). The proposed clearing may result in the potential loss of habitat and disturbance to this species. However, the applicant has developed management strategies to reduce the impact of the proposal on this species, which involves retaining large mature trees that may provide habitat for this species.

The Malleefowl (*Leipoa ocellata*) mainly occurs in shrublands and low woodlands that are dominated by mallee vegetation (Department of Environment, 2015). There has been such a significant decline in Malleefowl numbers, that the species is now listed as rare or likely to become extinct under the WA Wildlife Conservation Act 1950 (WC Act) and vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

This decline has resulted from a number of threats to this species including loss of mallee vegetation due to clearing for agricultural purposes, fox predation and the degradation of habitat by fire and fox predation (Department of the Environment, 2015).

Malleefowl require a sandy substrate and abundance of leaf litter to build mounds for roosting purposes (Department of Environment, 2015). The Level 1 Fauna Assessment undertaken by Bamford Consulting

Ecologists (2012) identified two major Vegetation and Substrate Associations (VSA) during the assessment that are likely to support suitable habitat for Malleefowl species. These include the 'Greenstone hills and rocky ridges supporting dense Acacia shrublands' and the 'Lower stony slopes and stony plains supporting Eucalypt Woodlands'. A targeted search for the Malleefowl was undertaken within the areas under application, namely within Lots 50 and 15 (Bamford Consulting Ecologists, 2012). Three old, inactive Malleefowl mounds were recorded within dense Acacia shrublands, one recorded within Lot 50 and two recorded within Lot 15. Additionally, a feather attributable to this species was recorded within dense Acacia shrubland on a greenstone ridge (Bamford Consulting Ecologists, 2012). These findings indicate that this species may be a breeding resident in small numbers within the areas under application. The applicant is required to engage a fauna specialist to walk, inspect and survey the site prior to clearing and ensure there is a 50 metre buffer from any mounds identified.

The Western Slender-billed Thornbill (*Acanthiza iredalei iredalei*) inhabits chenopod shrublands that are dominated by samphire or Maireana and Atriplex associations (Department of Environment, 2015a). The chenopod shrublands located around salt lakes within the application areas are likely to provide suitable habitat for this species (Bamford Consulting Ecologists, 2012). However, only a small portion of the application area provides suitable habitat, therefore, it's not likely to comprise significant habitat for this species.

The Chuditch (*Dasyurus geoffroii*) has a preference for jarrah (*Eucalyptus marginata*) forests, woodlands, mallee shrublands and heaths. They require adequate den resources and large natural areas and home sizes that are not fragmented in order for survival (DEC, 2012a). Suitable habitat is likely to occur within the areas under application, however, given the proposal lies outside the known range of this species, it is not likely the site will provide significant habitat for this species.

The areas under application that support Eucalypt woodlands may provide suitable breeding habitat for bird species that are reliant on mature hollow-bearing trees, including the Peregrine Falcon (*Falco peregrinus*), Major Mitchell's Cockatoo (*Lophochroa leadbeateri*), Western Rosella (*Platycercus icterotis xanthogenys*), Scarlet-chested Parrot (*Neophema splendida*) and Greater Long-eared Bat (Central Form, *Nyctophilus timoriensis*) (Bamford Consulting Ecologists, 2012). However, it is unlikely these species would roost exclusively in the application areas, given the mobile nature of these species and that the surrounding area is highly vegetated.

The Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*), listed as critically endangered under the Wildlife Conservation Act 1950, has been recorded from undulating stony rises supporting Eucalyptus concinna and was formally known only from a small area north east of Lake Douglas. This species is at risk from mining activities but as individuals have not recorded in this area since 1993, it is considered to be extinct in the Goldfields area (Williams, M.R. and Williams, A.A., 2008). In addition, the Level 1 Fauna Assessment undertaken by Bamford Consulting Ecologists (2012) conducted targeted searching in areas of suitable habitat and did not locate any *Camponotus* sp. Nests which is where the species lay their eggs.

Given the above, the proposed clearing may impact upon conservation significant fauna and therefore may be at variance to this principle. The applicant has advised that management strategies will be adopted in order to minimise the impacts to conservation significant fauna habitat (HBJ Minerals, 2008). These strategies include utilising existing tracks, firebreaks and fence lines for access where possible, locating tracks so as to avoid large trees, retain hollow-bearing trees for bird and reptile habitat where possible and stockpiling vegetation to be respread to provide for fauna habitat (HBJ Minerals, 2008).

Methodology

References:

- DEC (2007-)
- Bamford Consulting Ecologists (2012)
- DEC (2012)
- DEC (2012a)
- Department of the Environment (2015)
- Department of the Environment (2015a)
- Williams, M.R. and Williams, A.A. (2008)
- HBJ Minerals (2008)

GIS Databases:

- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets (Accessed February 2015)

(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 three known records of a rare flora species that have been recorded within the local area (50 kilometre radius) with the closest known record being approximately 40 kilometres west of the application area. This species preferred habitat is along margins of rock outcrops and drainage lines on sand, sandy loam or granite soils (Western Australian Herbarium 1998-). Suitable habitat occurs within the areas under application. However, flora surveys conducted in 2003/2004 by Western Botanical (2004) and in 2012 by Native Vegetation Solutions (2012) did not identify any rare flora within the application area. Therefore, it is not likely this rare flora species would occur within the area under application.

Therefore the proposed clearing is not likely to be at variance to this Principle.

Methodology

- References:
 - Western Botanical (2004)
 - Western Australian Herbarium (1998-)
 - Native Vegetation Solutions (2012)
 GIS Databases:
 - SAC Bio Datasets (Accessed February 2015)

(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 Threatened Ecological Communities (TEC) recorded within the local area (50 kilometre radius). This has also been confirmed during flora surveys conducted by Western Botanical and Native Vegetation Solutions in 2004 and 2012 respectively.

Given this the proposed clearing is not likely to be at variance to this principle.

Methodology

- References:
 -Western Botanical (2004)
 -Native Vegetation Solutions (2012)
 GIS Databases
 -SAC Bio Datasets (Accessed February 2015)

(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 vegetation under application has been identified as Beard vegetation complexes 9, 468 and 221 of which there is 97, 98 and 99 per cent of their pre-European extent remaining respectively within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion (Government of Western Australia, 2013).

The area under application is located within the City of Kalgoorlie-Boulder, within which there is approximately 98 per cent pre-European vegetation remaining (Government of Western Australia, 2013).

The local area has approximately 95 per cent native vegetation remaining within the local area (50 kilometre radius).

Given the well represented vegetation types under application the area is not considered to be a significant remnant in an extensively cleared area.

Therefore, the proposed clearing is not at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DPaW Managed Lands (%)
IBRA Bioregion				
Coolgardie	12,912,204	12,648,491	98	16
Shire				
City of Kalgoorlie-Boulder	9,543,262	9,526,651	99	4
Beard Vegetation Association in				

Bioregion

9	240,442	235,101	97	8
468	583,358	575,360	98	23
221	19,498	19,304	99	10

Methodology References:
 - Government of Western Australia, 2013
 GIS Databases:
 - NLWRA, Current Extent of Native Vegetation
 - Pre-European Vegetation

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

Comments **Proposal is at variance to this Principle**

There are several minor non-perennial watercourses in the form of ephemeral creeks that cross the areas under application. Therefore, it is considered likely that a portion of the vegetation proposed for clearing such as the identified vegetation habitat type 3.5: Broad drainage tract with Eucalyptus salmonophloia, Eucalyptus salubris woodlands with Eremophila ionantha, is growing in association with these watercourses (HBJ Minerals, 2008).

It is unlikely the proposed clearing will significantly impact on riparian vegetation given the minor non-perennial nature of the watercourses.

Given the above, the proposed clearing is at variance with this principle. It is unlikely that the proposed clearing will significantly impact on riparian vegetation given the minor non perennial nature of the watercourses.

Methodology References:
 - HBJ Minerals (2008)
 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 may be at variance to this Principle**

Eight land systems have been identified within the areas under application. These include the Gumland, Moriarty, Graves, Red Hill, Lefroy, Sedgman, Gundockerta and Bunyip land land systems (Commissioner of Soil and Land Conservation, 2007a, Commissioner of Soil and Land Conservation, 2007b).

The Gumland land system is described as extensive pedeplains supporting eucalypt woodlands with halophytic and non-halophytic shrub understoreys. The minor stony plain land unit has red deep duplex soils and is prone to erode if cleared and the protective stony mantle disturbed. Any concentration of run off is also likely to cause soil erosion and affect lower vegetation dependent upon the natural sheet flows (Commissioner of Soil and Land Conservation, 2007a).

The Moriarty land system is described as low greenstone rises supporting eucalypt woodland over chenopod understorey. The red loamy earths and shallow loams that occur on the low rises and stony/gravelly plains land units are reasonably resistant to soil erosion (Commissioner of Soil and Land Conservation, 2007a). Clearing and soil disturbance in the narrow drainage tract land units is likely to cause water erosion (Commissioner of Soil and Land Conservation, 2007b).

The Graves land system is described as low basalt and greenstone hills and rises that support eucalypt woodland over salt bush and blue bush understorey. The alluvial plains/drainage tract land units are susceptible to erosion if disturbed. The shallow loams of the hills, and slopes land units are resistant to soil erosion if the protective stony mantles are not disturbed (Commissioner of Soil and Land Conservation, 2007a).

The Red Hill land system is described as basalt hills and ridges supporting acacia shrublands and patchy eucalypt woodland with mainly non halophytic understorey. A large tract of the land system occurs in the middle of the applied area. This land system is not generally prone to soil erosion. There is some risk associated with clearing and disturbance of the red loamy earths or red duplex soils in the valley floors (Commissioner of Soil and Land Conservation, 2007a).

The Lefroy land system is likely to be areas of saline plain and alluvial plain land units. These level plains are likely to have red brown non calcareous clays and red deep duplex soils and are subject to sheet flow and are not particularly prone to soil erosion. Several areas of this land system occur within the applied area (Commissioner of Soil and Land Conservation, 2007a).

The Sedgman, Gundockerta and Bunyip land systems occur within the applied area, but are minor areas. These systems are not likely to be problematic from a land degradation perspective provided caution is increased in the vicinity of the drainage lines that traverse these areas (Commissioner of Soil and Land

Conservation, 2007b).

The Commissioner of Soil and Land Conservation (2007a) has advised that the proposed clearing for exploration purposes is not likely to cause serious soil erosion provided care is taken to minimise disturbance of natural flow regimes and the bed and banks of drainage lines.

Therefore the proposed clearing may be at variance to this Principle.

The applicant has advised that management actions will be undertaken to assist in the avoidance of long-term land degradation. These actions include utilising existing tracks and creek crossings and the rehabilitation of disturbed areas once mining activities cease (HBJ Minerals, 2008).

A requirement to revegetate once mining activities have ceased will help to mitigate any impacts of land degradation in the form of erosion from the proposed clearing.

Methodology References:
- Commissioner of Soil and Land Conservation (2007a)
- Commissioner of Soil and Land Conservation (2007b)
- HBJ Minerals (2008)

(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 closest conservation reserve, Kambalda C Class Nature Reserve, is located four kilometres south west of the application area.

The areas under application have been subject to a history of extensive grazing activities and timber cutting for firewood with the vegetation being predominantly regrowth. The area has also been previously disturbed as it contains existing tracks, open pits, public roads, railway and a gas pipeline (HBJ Minerals, 2008).

The areas under application may provide an environmental corridor for fauna between reserves. However, due to the high level of disturbance from historical and existing activities and the distance to the closest reserve, the clearing as proposed is not likely to have significant impact on adjacent or nearby conservation areas.

Methodology References:
- HBJ Minerals (2008)
GIS Databases:
- Parks and Wildlife, 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 may be at variance to this Principle**
There are several minor non-perennial watercourses in the form of ephemeral creeks that cross the areas under application.

The Commissioner of Soil and Land Conservation (2007b) has advised that areas within Lots 15, 50 and 62 associated with the Gundockerta and Moriarty land systems with their stony plains, and land associated with valley floors and drainage lines are prone to water erosion.

The proposed clearing may result in water erosion particularly in drainage tracts and areas of stony plains.

Water erosion of these soils and drainage into nearby surface water bodies may result in sedimentation and the deterioration of water quality.

Given the above, the proposed clearing may be at variance to this principle.

A requirement to revegetate once mining activities have ceased will help to reduce the impacts of sediment transport and soil erosion into nearby watercourses impacting upon water quality.

Methodology References:
- Commissioner of Soil and Land Conservation (2007b)
GIS Databases:
- Hydrography, linear
- Soils, 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**
With an average annual rainfall of 300 millimetres and an annual evaporation rate of 2,600 millimetres, there is little surface flow during normal seasonal rains. Given the areas under application occur on a relatively flat landscape and there is little surface flow, the proposed clearing is not likely to cause or increase the incidence or intensity of flooding and is therefore not likely to be at variance to this principle.

Methodology GIS Databases:
- Evaporation Isoleths
- Isohyets
- Topographic Contours, Statewide

Planning instruments and other relevant matters.

Comments The areas under application are within the Proclaimed Groundwater Area of the Goldfields. Therefore any abstraction of groundwater would require a licence from the Department of Water.

Mineral exploration is not a prescribed premise as defined under Environmental Protection Regulations 1987 Schedule 1 - Prescribed premises.

It is the proponent's responsibility to determine whether any Works Approval, or any other licences or approvals are required for future proposed works.

There are no Aboriginal Sites of Significance mapped within the areas under application.

The Shire of Coolgardie (2008) has been advised of the proposal and do not wish to make any comments.

Lot 15, Lot 50 and Lot 62 are Freehold and are zoned rural under the Local Town Planning Scheme. There are two native title claims over the areas under application; however, since the land is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

Methodology References:
- Shire of Coolgardie (2008)
GIS Databases:
- Aboriginal Sites of Significance
- Native Title Claims
- RIWI Act, Groundwater Areas
- RIWI Act, Surface Water Areas
- Town Planning Scheme Zones

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