

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6760/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: HBJ Minerals Pty Ltd

1.3. Property details

Property: Mining Lease 25/357

Local Government Area: City of Kalgoorlie-Boulder

Colloquial name: Cannon Gold Project

1.4. Application

Clearing Area (ha) No. Trees Method of Clearing For the purpose of:

40 Mechanical Removal Mineral Exploration, Mineral Production and Associated

Activities

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 12 November 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database):

Beard vegetation association 468: Medium woodland, salmon gum and goldfields blackbutt.

A level one flora and vegetation study incorporating a desktop assessment and a field component was undertaken in August 2015 by Botanica Consulting (2015). This survey identified ten broad vegetation types within the study area:

Eucalypt Woodland

CLP-EW1: Low woodland of Eucalyptus salmonophloia over heath of Eremophila scoparia and dwarf scrub of Atriplex vesicarial Sclerolaena diacantha;

CLP-EW2: Forest of *Eucalyptus lesouefii* over low scrub of *Eremophila scoparia* and dwarf scrub of *Cratystylis conocephala*;

CLP-EW3: Low woodland of *Eucalyptus lesouefiil E. salubris* over scrub of *Eremophila scoparia* and *Melaleuca sheathiana* and dwarf scrub of *Tecticornia disarticulata*;

CLP-EW4: Low woodland of *Eucalyptus transcontinentalis* over scrub of *Melaleuca sheathiana* and dwarf scrub of *Olearia muelleri/Westringia rigida*;

Mallee woodlands and shrublands

CLP-MWS1: Open tree mallee of *Eucalyptus griffithsiil Eucalyptus yilgarnensis* over low scrub of *Eremophila scoparial Acacia acuminata* and dwarf scrub of *Westringia rigida*;

CLP-MWS2: Very open shrub mallee of *Eucalyptus griffithsii* over heath of *Acacia acuminata* and dwarf scrub of *Ptilotus obovatus*;

Acacia Forest and Woodlands

QRP-AFW: Low forest of Acacia caesaneura over scrub of Acacia acuminata and dwarf scrub of Eremophila

Mallee woodlands and Shrublands

QRP-MWS: Open tree mallee of *Eucalyptus trichopoda* and open low woodland of *Casuarina pauper* over scrub of *Acacia acuminatalAcacia pteraneura* and dwarf scrub of *Prostanthera althoferilPtilotus obovatus*;

Casuarina Forest and Woodland

RH-CFW: Low woodland of *Casuarina pauper* over *Eremophila oldfieldii* subsp. *angustifolia* and dwarf scrub of *Scaevola spinescens* with occasional open low grass of *Triodia scariosa*;

Eucalypt Woodland

RH-EW: Low woodland of Eucalyptus lesouefii over low scrub of Acacia hemiteles/Acacia acuminata/ Scaevola

spinescens and dwarf scrub of Westringia rigida.

Clearing Description Cannon Gold Project

> HBJ Minerals Pty Ltd proposes to clear up to 40 hectares of native vegetation within a total boundary area of approximately 115.64 hectares for the purpose of mineral exploration, mineral production and associated activities. The proposal is located approximately 27 kilometres east south-east of Kalgoorlie, in the City of Kalgoorlie-Boulder.

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

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery,

1994).

Comment The vegetation condition was assessed by botanists from Botanica Consulting (2015).

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 Goldfields sub-region of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Eastern Goldfields subregion is dominated by Mallees, Acacia thickets and shrubheaths on sandplains. Diverse Eucalyptus woodlands occur around salt lakes, on ranges, and in valleys and dwarf shrublands of samphire are common in salt areas (Kendrick and Stanley, 2003).

A flora and vegetation survey of the application area was conducted in August 2015 (Botanica Consulting, 2015). The timing of the survey was undertaken just outside of the Environmental Protection Authorities' recommended timing for flora surveys (i.e. spring/ autumn) however many plants were in flower. Based on the scale of the survey and the coordinating botanists local knowledge of flora in the region, the timing of the survey was considered appropriate (Botanica Consulting, 2015). The survey recorded a total of 76 taxa from 17 families, representing 35 genera (Botanica Consulting, 2015). Botanica Consulting (2015) identified 10 vegetation communities within the application area with the condition of the vegetation communities classified as 'very good' to 'good' (Keighery, 1994).

There are no known Threatened Flora or Priority species, Threatened Ecological Communities or Priority Ecological Communities recorded within the application area (Botanica Consulting, 2015; GIS Database).

No Weeds of National Significance or Declared Pests under the Biosecurity and Agricultural Management Act 2007 were recorded during the survey, however three introduced flora taxa were recorded. The proposed vegetation clearing has the potential to introduce weed species into the local area should adequate hygiene practices not be put in place. Weeds can affect biodiversity in a number of ways, including out competing native species for resources and increasing the fire risk. The potential spread of introduced species as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A Level 1 fauna survey, including a desktop assessment and field survey was conducted by Bamford Consulting Ecologists over the application area in August 2015 (Bamford, 2015). The desktop assessment identified 292 species (including five frogs, 85 reptiles, 166 birds and 36 mammals) have the potential to occur within the application area (Bamford, 2015). The expected fauna assemblage in the application area was described as typical of the Kalgoorlie region and did not comprise a high level of biological diversity (Bamford, 2015).

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

Methodology Bamford (2015)

Botanica Consulting (2015)

Keighery (1994)

Kendrick and Stanley (2003)

GIS Database:

- IBRA WA (Regions Sub Regions)
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

(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 fauna desktop assessment identified 292 species (including five frogs, 85 reptiles, 166 birds and 36 mammals) with the potential to occur within the application area (Bamford, 2015).

A fauna survey was conducted over the application area in August 2015 by Bamford Consulting Ecologists (2015), which included a targeted search for Malleefowl. Based on this survey, four broad fauna habitats were identified within the application area, these being:

- · Stony rises;
- Loam Stony Plains;
- · Sandy Clay Plains; and
- Loam Plains.

The fauna habitats within the application area were not considered to be unique and are relatively widespread in the region and surrounding areas (GIS Database; Bamford, 2015). It is not expected that the proposed development will involve the removal of whole or part of significant habitat for fauna indigenous to Western Australia. (GIS Database; Bamford, 2015).

The application area was assessed for the presence of Malleefowl habitat both visually and using satellite imagery (Bamford, 2015). Where suitable habitat was noted, targeted searching for Malleefowl mounds was conducted. The proposed disturbance footprint was also searched intensively for the presence of mounds (Bamford, 2015). Two inactive mounds were recorded within the application area. Both were recorded within *Melaleuca pauperiflora* thickets (historically selectively logged) on low gravelly rises to the north-west of the Cannon Deposit (Bamford, 2015). No mounds were recorded within the Cannon disturbance footprint, which was comprised mostly of open Salmon Gum Woodland. It is recommended that a fauna management condition be included in the permit restricting the clearing of vegetation within 100 meters of identified Malleefowl mounds as per previous advice provided by the Department of Parks and Wildlife for clearing permit CPS 6426/2.

The proposed clearing of 40 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation significant fauna species.

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

Methodology

Bamford (2015) GIS Database:

- Pre-European Vegetation
- Topographic contours

(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 records of Threatened Flora within the application area (DPaW, 2015; GIS Database).

The flora and vegetation survey conducted by NVS over the application area did not record any species of Threatened Flora (Botanica Consulting, 2015).

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

Methodology

DPaW (2015)

Botanica Consulting (2015)

GIS Database:

- Threatened and Priority Flora

(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 within the application area (GIS Database).

The flora and vegetation survey conducted by Botanica Consulting over the application area did not record any Threatened Ecological Communities (Botanica Consulting, 2015).

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

Methodology

Botanica Consulting (2015)

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 lies within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA)

bioregion in which approximately 98% of the pre-European vegetation remains (see table) (Government of Western Australia, 2014; GIS Database).

The vegetation in the application area is broadly mapped as Beard vegetation association 468 (GIS Database):

468: Medium woodland, salmon gum and goldfields blackbutt.

These vegetation associations have not been extensively cleared as over 99% remains at a State, and 99% at a bioregional level for all vegetation associations (see table) (Government of Western Australia, 2015). There has not been extensive clearing in the local region and the vegetation within the application area is not a remnant nor does it form part of any remnants within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPAW Managed Lands
IBRA Bioregion - Pilbara	12,912,204	12,648,491	~98	Least Concern	~15.9
Beard vegetation associations - State					
468	592,022	583,903	~99	Least Concern	~22.85
Beard vegetation associations - Bioregion					
468	583,358	575,361	~99	Least Concern	~22.4

^{*} Government of Western Australia (2014)

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 (2014)

GIS Database:

- IBRA WA (regions subregions)
- Pre-European Vegetation

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

Comments

Proposal is not likely to be at variance to this Principle

There are no permanent water bodies or watercourses within or in close proximity to the application area (GIS Database).

No vegetation associated with a permanent watercourse or wetland was recorded within the application area during the flora and vegetation field survey (Botanica Consulting, 2015).

There is one minor non-perennial drainage line that intersects the application area (GIS Database). The surface flow of this drainage line is likely to be dry most of the year. It is not expected the proposed clearing will have a significant effect on native vegetation growing in, or in association with a watercourse or wetland (Botanica Consulting, 2015; GIS Database).

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

Methodology

Botanica Consulting (2015)

GIS Database:

- Geodata, Lakes
- 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

Based on geographic information provided by DAFWA (2014), the survey area occurs within the Kambalda Zone of the Kalgoorlie Province. The Kambalda Zone is characterised by flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton (DAFWA, 2014; Botanica Consulting, 2015).

Land system information available from nearby areas indicates that the broader area has varying susceptibility to erosion, particularly within alluvial plans where perennial shrub cover has been substantially reduced or the

^{**} Department of Natural Resources and Environment (2002)

soil surface has been disturbed (Strategen, 2014). However, potential land degradation is likely to be minimised and managed through mitigation measures including revegetation of temporarily disturbed areas.

The soil type within the application area is described as calcareous loamy earths and red loamy earths with salt lakes soils and some redbrown hardpan shallow loams and red sandy duplexes (Botanica Consulting, 2015; GIS Database).

Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology

Botanica Consulting (2015)

DAFWA (2014) Strategen (2014) GIS Database: - Soils. Statewide

(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 does not lay within any conservation areas (GIS Database).

The nearest reserve (Lakeside Timber Reserve) is located approximately 10 kilometres west of the application area (GIS Database). Given the distance between the application area and the reserve, the proposed clearing is not likely to impact the environmental values of this area.

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

Methodology

GIS Database:

- DPaW 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) and there are no permanent water bodies or watercourses within the application area (Botanica Consulting, 2015; GIS Database).

There is one minor non-perennial drainage line that intersects the application area (GIS Database). The surface flow of this drainage line is likely to be dry most of the year. It is not expected the proposed clearing will have a significant impact on the surface water quality of this drainage line (GIS Database).

Groundwater salinity within the application area is between 14,000 and 35,000 milligrams/Litre Total Dissolved Solids (TDS) which is considered to be saline (GIS Database). The proposed clearing is not likely to cause ground water quality within the application area to alter significantly.

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

Methodology

Botanica Consulting (2015)

GIS Database:

- Groundwater Salinity, Statewide
- 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 Goldfields region is mostly hot and dry, with highly variable rainfall throughout the year (BoM, 2015). Kalgoorlie has a semi-arid climate with hot summers and mild winters, and an average rainfall of 267 mm relatively evenly distributed throughout the year. Rainfall can however be highly erratic year to year (BoM, 2015).

There are no permanent water bodies or watercourses within or in close proximity to the application area (GIS Database).

The application area is characterised by predominantly flat to gently undulating plains therefore given the likelihood of little surface flow, the proposed clearing within the application area is unlikely to cause or exacerbate the incidence of flooding or localised waterlogging (Botanica Consulting, 2015; GIS Database).

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

Methodology BoM (2015)

Botanica Consulting (2015)

GIS Database:

- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC2014/002) over the area under application (DAA, 2015). 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*.

According to available databases, there are no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, Department of Parks and Wildlife and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 5 October 2015 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology DAA (2015)

GIS Database:

- Aboriginal Sites of Significance

4. References

Bamford (2015) Metals X Cannon Project – 2015 Fauna Assessment. Bamford Consulting Ecologists, 25 August 2015. Unpublished report prepared for Metals X Limited by Bamford Consulting Ecologists, August 2015.

Botanica Consulting (2015) Metals X Cannon Project – Level 1 Flora and Vegetation Survey For the Cannon Gold Project. Unpublished report prepared for Metals X Limited by Botanica Consulting, August 2015.

BoM (2015) Climate Statistics for Australian Locations. A Search for Climate Statistics for Port Hedland, Australian Government Bureau of Meteorology, viewed 9 November 2015,

http://www.bom.gov.au/climate/averages/tables/cw 012038.shtml>.

DAA (2015) Aboriginal Heritage Inquiry System, Government of Western Australia, Department of Aboriginal Affairs, Perth, viewed 9 November 2015 < http://maps.dia.wa.gov.au/AHIS2/>.

DAFWA, (2014), Soil Landscape System of Western Australia, Department of Agriculture and Food Western Australia, 2014. 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.

DPaW (2015) NatureMap - Mapping Western Australia Biodiversity, Department of Parks and Wildlife, viewed 9 November 2015, < http://naturemap.dpaw.wa.gov.au/default.aspx>.

Government of Western Australia (2014) 2014 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.

Kendrick, P., and Stanley F. (2003) Pilbara 4 (PIL4 - Roebourne synopsis). A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

Strategen (2014) Cannon Mining Project - Native Vegetation Clearing Permit Application: Cannon Gold Mine (M25/333 and L25/43) Southern Gold Limited. Report prepared by Strategen Environmental Consultants for Southern Gold Ltd, Western Australia.

5. Glossary

Acronyms:

BoMBureau of Meteorology, Australian GovernmentDAADepartment of Aboriginal Affairs, Western AustraliaDAFWADepartment 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 the Department 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.