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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1011/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Millennium Minerals Limited**

1.3. Property details

Property: Mining Lease 46/138
Mining Lease 46/186
Mining Lease 46/300
Mining Lease 46/443
Miscellaneous Licence 46/45
Local Government Area: Shire of East Pilbara
Colloquial name: Nullagine Gold Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 October 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The application area has been broadly mapped as Beard vegetation association 190: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* & *A. trachycarpa* over hard spinifex, *Triodia wiseana*; Very poor rocky country on gneiss (GIS Database). An extensive flora and vegetation survey of the Nullagine Gold Project area was undertaken by Mattiske Consulting Pty Ltd (Mattiske) in July 2005. Mattiske (2005) defined and mapped 11 plant communities within the original permit area and these are detailed in Decision Report CPS 1011/1. Mattiske (2014) identified the following eight vegetation associations within the additional area applied for under the amendment application: **C1** - Open Woodland of *Eucalyptus victrix*, *Eucalyptus camaldulensis* subsp. *obtusa* and *Melaleuca argentea* with occasional *Corymbia hamersleyana* over mixed *Acacia* spp. over sedges and reeds, occasional pools on deep sandy creekbeds. **C3** - Shrubland of mixed *Acacia elachantha*, *Acacia bivenosa*, *Acacia acradenia*, *Acacia arrecta* with *Petalostylis labicheoides* with emergent *Eucalyptus leucophloia* subsp. *leucophloia* over *Triodia longiceps*, *Triodia brizoides* and *Cymbopogon* spp. in narrow creeklines. **C4** - Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia candida* subsp. *dipsodes*, *Corymbia hamersleyana*, *Corymbia opaca* and *Eucalyptus lucasii* over *Acacia holosericea*, *Acacia inaequilatera*, *Acacia trachycarpa* and *Grevillea wickhamii* over *Petalostylis labicheoides* and *Gossypium robinsonii* with *Corchorus walcottii* and *Triodia* spp. on sandy clays on broad flow lines and flats.	Nullagine Gold Project. Millenium Minerals Limited proposes to clear up to 240 hectares of native vegetation within a total boundary of approximately 986 hectares, for the purpose of an open pit gold mine and mining-related infrastructure. The project is located approximately seven kilometres south of Nullagine, in the Shire of East Pilbara.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994). To Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	Vegetation condition was assessed by Mattiske Consulting Pty Ltd and analysis of aerial photography. Millennium Minerals Limited has excluded approximately 191 hectares of vegetation from the clearing area, for flora and fauna conservation. This includes an area for conservation of *Ctenotus nigrilineatus* habitat. The proposed clearing of native vegetation is for mine open pits and mining related infrastructure, including: tailings storage facility, waste rock dumps, haul roads, processing plant, contractor yard, camp, and waste water treatment plant. Clearing permit CPS 1011/1 was granted by the Department of Mines and Petroleum on 17 December 2009, and was

C5 - Hummock Grassland of *Triodia angusta* and *Triodia longiceps* with emergent *Corymbia opaca* over *Acacia trachycarpa*, *Acacia sclerosperma* subsp. *sclerosperma*, *Hakea lorea* subsp. *lorea* and *Eriachne mucronata* on red sandy-loam to sandy clay soils of broader flats.
D - Shrubland of *Acacia bivenosa* with *Acacia synchronicia* and *Acacia trachycarpa* over mixed *Triodia* spp. and other annual species on disturbed sites.

E1 - Low Open Woodland of *Corymbia opaca* over mixed Acacia spp. (*Acacia trachycarpa*, *Acacia holosericea*, *Acacia sclerosperma* subsp. *sclerosperma*) over *Triodia pungens* and *Triodia longiceps* on loamy soils in shallow valleys between low rocky hills.

HG6 - Hummock Grassland of *Triodia wiseana* and *Triodia pungens* with *Goodenia stobbsiana*, *Tribulus suberosus* and *Eucalyptus leucophloia* subsp. *leucophloia* on rocky escarpments and plateau.

HG7 - Hummock Grassland of *Triodia pungens* with emergent shrubs of *Acacia inaequilatera* and *Grevillea pyramidalis* on rocky low hills.

valid from 16 January 2010 to 16 January 2015. On 19 August 2014, Millenium Minerals Pty Ltd applied to amend CPS 1011/1 to increase the area approved to clear from 200 hectares to 240 hectares, to increase the permit boundary from approximately 874 hectares to approximately 986 hectares, and to extend the permit duration by five years to 16 January 2020.

3. Assessment of application against clearing principles

Comments

Millenium Minerals Pty Ltd has applied to increase the amount of clearing authorised by 40 hectares, to increase the permit boundary by approximately 112 hectares, and to extend the permit duration by five years.

Mattiske Consulting Pty Ltd (Mattiske) reviewed previous flora and vegetation surveys conducted over the original permit area (CPS 1011/1) and nearby areas, and undertook a desktop review of the amendment application area (Mattiske, 2014). Vegetation associations of the amendment area were inferred from adjacent survey areas and analysis of aerial photography (Mattiske, 2014).

The vegetation associations, landforms, and fauna habitat types occurring within the amendment area are similar to those occurring within the original permit area, and are well represented in surrounding areas (GIS Database; Mattiske, 2014). The amendment area has suffered previous disturbance from mineral exploration activities and weed invasion, and is not likely to represent an area of greater biodiversity than the original permit area or surrounding areas (GIS Database; Mattiske, 2014). Two areas considered to represent higher biodiversity values were excluded from the original permit boundary and continue to be excluded from the amended permit boundary. The clearing of an additional 40 hectares is unlikely to have a significant impact on fauna habitat availability at a local or regional scale.

No Threatened flora have been recorded within the vicinity of the application area, and none were recorded during the survey of the original permit area (GIS Database; Mattiske, 2014).

No Threatened Ecological Communities have been recorded within the vicinity of the application area (GIS Database; Mattiske, 2014). The original permit area and the amendment area fall within the buffer zone for the Priority Ecological Community (PEC) 'Stony saline plains of the Mosquito Land System' (Priority 3) (DPaW, 2014; GIS Database). The buffer zone is based on mapping of the Mosquito Land System in Van Vreeswyk *et al*. (2004) (DEC, 2012). The PEC represents Unit 4 of the Mosquito Land System, described by Van Vreeswyk *et al*. (2004) as patchy hummock grasslands of *Triodia longiceps* with isolated to scattered shrubs of *Acacia, Senna* and *Maireana* spp., on stony saline plains (DEC, 2012). None of the vegetation associations mapped within the application area are considered to be representative of this PEC (DEC, 2012; Mattiske, 2014).

The amendment area is broadly mapped as Beard vegetation association 190 (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregion level (Government of Western Australia, 2013). Hence, the vegetation proposed to be cleared does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

The amendment area falls within the same land system as the majority of the original permit area, the Mosquito land system (GIS Database). This system generally has low susceptibility to erosion (Van Vreeswyk *et al*., 2004), and the clearing of an additional 40 hectares is unlikely to result in appreciable land degradation.

There are no water courses or wetlands within the amendment area (GIS Database). The clearing permit boundary falls within a Public Drinking Water Source Area, the Nullagine Water Reserve (Priority 3) (GIS Database). To ensure the protection of water resources, all activities within the water reserve should be conducted in accordance with Department of Water (DoW) Water Quality Protection Notes and Guidelines, and any groundwater abstraction in this area is subject to licencing by the DoW (DoW, 2014). DoW (2014) has advised that the clearing of an additional 40 hectares of native vegetation within the Nullagine Water Reserve is unlikely to have any significant impact on the quality or quantity of groundwater, provided activities are conducted in accordance with DoW advice and guidelines.

The assessment of the proposed clearing against the clearing principles remains consistent with the assessment in decision report CPS 1011/1.

Methodology

DEC (2012)
DoW (2014)
Mattiske (2014)
Van Vreeswyk *et al*. (2004)
GIS Database:
- Geodata, Lakes
- Hydrography, linear
- Nullagine 80cm Orthomosaic - Landgate 2007
- Pre-European Vegetation
- Public Drinking Water Source Areas (PDWSAs)
- Threatened Ecological Sites Buffered
- Topographic Contours, Statewide

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

Comments

There is one native title claim over the area under application (GIS database). This claim (WC99/016) has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenements have been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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

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

The amendment application was advertised on 8 September 2014 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

Methodology

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

4. References

DEC (2012) Advice from Species and Communities Branch for Clearing Permit Application CPS 4976/1. Department of Environment and Conservation, June 2012.

DoW (2014) Advice from DoW for Application to amend Clearing Permit 1011/1. Department of Water, September 2014.

DPaW (2014) Priority Ecological Communities for Western Australia Version 21. Species and Communities Branch, Department of Parks and Wildlife, May 2014.

Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting Pty Ltd (2005) Flora and Vegetation on the Golden Eagle Lease. Prepared for Wedgetail Exploration NL, by Mattiske Consulting Pty Ltd, November 2005.

Mattiske (2014) Flora and Vegetation of the AU81 Deposit Area. Prepared for Millenium Minerals Limited, by Mattiske Consulting Pty Ltd, September 2014.

Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
s.17	Section 17 of *the Environment Protection Act 1986*, Western Australia
TEC	Threatened Ecological Community

Definitions:

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

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

Threatened Fauna and Flora are further recognised by 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.

Principles for clearing native vegetation:

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

(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.

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

(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.

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

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

(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.

(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.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.