Department of
Industry and Resources

Clearing Permit Decision Report

1 Application details

1.1. Permit application details

Permit application No.: 744/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **St Ives Gold Mining Co Pty Ltd - Leviathan**

1.3. Property details

Property: M15/1541
M15/1542
M15/1543
M15/1630
M15/1631
M15/1634
Local Government Area: Shire Of Coolgardie
Colloquial name: Tenements M15/1541, M15/1542, M15/1543, M15/1630, M15/1631, M15/1634

1.4. Application

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

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
Beard vegetation association 936: Medium woodland; salmon gum (Hopkins et al. 2001; Shepherd et al. 2001)	Three vegetation units exist within the proposed area for clearing; Open Eucalypt woodland, Eucalypt woodland over grassy sand dune and Samphire/Chenopod shrubland (Jims Weeds, Seeds and Trees, 2005). The most dominant species within the former are *Eucalyptus lesouefii* and *E.salubris*, with understorey comprising species from the Acacia, Maireana, Atriplex and Eremophila genus. Dominant species within the Eucalypt woodland over grassy sand dune unit are *Eucalyptus gracilis* and *E. platycorys*, with understorey including *Triodia scariosa, Dodena viscosa* and *Eremophila scoparia*. Within the Samphire/Chenopod shrubland unit, *Halosarcia pergranulata* is the dominant species with other species from the Melaleuca, Atriplex and Eremophila genus also present (Jims Weeds, Seeds and Trees, 2005).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The proposal is for the clearing of 117 hectares of native vegetation for the construction of waste rock dumps adjacent to an extensive open-cut mining operation. The northern boundary of the area applied to be cleared fringes a salt lake system. Although historic mining activities and grazing pressure have resulted in obvious vegetation disturbance, Jims Seeds, Weeds & Trees (2005) rate the condition of the vegetation as 'very good' (Keighery, 1994). Photographs of the surveyed area also indicate this to be the case.

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 Leviathan project area, located directly adjacent to the proposed clearing area, contains extensive open pit workings and waste dumps. The proposal to clear native vegetation for the purposes of waste dump construction associated with the expansion of the existing open pits in the Leviathan area, is unlikely to have a significant biodiversity impact considering the impact historical and existing mining and pastoral activities have had on the native vegetation (CALM, 2005). Jims Seeds, Weeds & Trees (2005) also advise that the level of biological diversity within the proposed area to be cleared has been adversely affected, attributed to a combination of intense grazing pressure and historic mineral exploration activities. Access tracks are numerous across the area to be cleared, within which the vegetation appears to be quite degraded. The vegetation

present within the area to be cleared is representative of an open Eucalyptus woodland which has extensive coverage within the regional area (Payne et al, 1998 as cited in Jims Seeds, Weeds & Trees, 2005). Considering the historical mining and pastoral activities it is unlikely that the biodiversity at the site of this proposal will be considered outstanding, or of a higher diversity than in the bioregion, the Shire of Coolgardie or the local area.

Methodology Site Visit (2005).
CALM (2005).
Jims Seeds, Weeds & Trees (2005).
GIS Database:
- Lake Lefroy 1.4m Orthomosaic DLI 02

(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**
A number of extensive fauna surveys have been conducted in the vicinity of Lake Lefroy and the Leviathan project area (Halpern Glick Maunsell (HGM) 1998; Ninox 2004). No declared or priority fauna species were observed in the vicinity of the proposal during the course of these surveys, however, there is a record of an old and degraded Malleefowl mound on Delta Island (approx. 4.5km north-west of project area). An actual sighting of this bird was made in 1995, however, no signs were observed during the current survey to indicate its continued presence in the area (Ninox, 2004). The consultant also advised that no Malleefowl nesting sites were observed during the flora survey, and bird activity was minimal across the project area (Jims Seeds, Weeds & Trees, 2005). The habitat across the project area may also be suitable for a variety of other scheduled and priority listed bird species, including the Peregrine Falcon *(Falco peregrinus)*, Spotted Nightjar *(Caprimulgus guttatus)*, Grey Falcon *(Falco hypoleucos)*, Scarlet-chested Parrot *(Neophema splendida)*, Hooded Plover *(Charadrius rubricollis)* and Crested Shrike-tit *(Falcunculus frontatus leucogaster)*, though none of the above were observed during the survey (HGM, 1998). Due to the degraded condition of the vegetation to be cleared and its extensive regional representation, it is unlikely the proposal is at variance to this principle.

Methodology Jims Seeds, Weeds & Trees (2005).
HGM (1998).
Ninox (2004).

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

Comments **Proposal is not likely to be at variance to this Principle**
A Priority 3 species *(Pityrodia sp. Yilgarn)* is located approximately 15km south of the proposal, though this would not appear to be a serious conservation issue as it is found within a different vegetation unit than the current proposal. A flora survey was conducted in June 2005 during which time no Declared Rare Flora (DRF) or Priority Flora species were observed (Jims Seeds, Weeds & Trees, 2005). Previous surveys have recorded only two threatened flora species from the vicinity of Lake Lefroy; *Pityrodia scabra* (DRF) and a Priority 3 species, *Acacia kalgoorliensis* (HGM, 1998). The latter is no longer a priority species, and as such is considered 'not threatened' (Jims Seeds, Weeds & Trees, 2005). The consultant advised that the vegetation immediately surrounding the pits was degraded and sparse, and that the vegetation unit across the surveyed area (Eucalyptus woodland) has extensive coverage in the regional area. It is unlikely that the proposed clearing will impact on significant flora, and therefore is not likely to be at variance to this principle.

Methodology Jims Seeds, Weeds & Trees (2005).
HGM (1998).
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- Declared Rare and Priority Flora List - CALM 01/07/05.

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

Comments **Proposal is not likely to be at variance to this Principle**
There have been no known Threatened Ecological Communities (TEC's) identified within the area subject to be cleared. The nearest known TEC is approximately 75 km of the proposed area, therefore the clearing proposal is not likely to be at variance to this principle.

Methodology GIS Databases:
- Threatened Ecological Community Database - CALM 12/4/05.

(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 State Government is committed to the National Objectives Targets for Biodiversity Conservation which

includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002; EPA, 2000).

The vegetation of the site is a component of Beard Vegetation Association 936 (Hopkins et al., 2001) of which ~906,000 hectares (~89.2%) of the pre-European extent remain (Shepherd et al., 2001). While the benchmark of 15% representation in conservation reserves (JANIS Forests Criteria, 1997) has not been met for Beard vegetation association 936, approximately 89.2% of the pre-European extent remains and it is therefore of 'least concern' for biodiversity conservation (Department of Natural Resources and Environment, 2002).

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Coolgardie	12,917,718*	12,719,084*	98.5%	Least concern	
Shire of Coolgardie	No information available				
Beard vegetation associations - 936	1,016,210	906,826	~89.2%	Least concern	2.3%

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Methodology Shepherd et al. (2001).
Hopkins et al. (2001).
EPA (2000).
JANIS Forests Criteria (1997).
Department of Natural Resources and Environment (2002).
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.

(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

No watercourses or wetlands of significance are present within the proposed clearing area, although, a non-perennial salt lake is situated adjacent to the northern boundary of the area under application. This lake is likely to have been extensively modified through adjacent mining activities, hence it is unlikely that the clearing will further degrade the environmental values of that lake. Some minor, non-perennial watercourses exist within close proximity to the area under proposal, however, these are poorly defined and will not be impacted upon by the proposed clearing. Lake Lefroy is situated approx. 1.8km north of the project area. The existence of adjacent mining operations combined with low topographical relief and an extensive salt lake system between Lake Lefroy and the proposed area, ensures that the vegetation to be cleared does not form a buffer for this lake system. A small proportion of the vegetation present within the area is representative of a Samphire/Chenopod shrubland fringing a salt lake system, however, this vegetation community contains a range of species that are widespread, both locally and regionally (Jims Seeds, Weeds & Trees, 2005). In consideration of the above factors, the proposal is considered to be not at variance to this principle.

Methodology Jims Seeds, Weeds & Trees (2005).
GIS Database:
- Hydrography, linear - DOE 01/02/04.
- Topographic Contours, Statewide - DOLA 12/09/02.
- Lake Lefroy 1.4m Orthomosaic DLI 02

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

Comments

Proposal is not likely to be at variance to this Principle

The proposal is located within the Great Western Plateau, a topographically monotonous surface of low relief and gradients between 1-2% (Beard, 1972 as cited in HGM, 1998). The major soil type across the proposed area is a red sandy loam (Newbey, 1984 as cited in HGM, 1998), therefore based on surface water hydrology and topography, it would not appear to be in a high risk soil erosion area. DAWA (2005) advise that given surface water is managed and the site is suitably rehabilitated post-mining, soil erosion is unlikely to be problematic given the nature of the soils and topography across the area under assessment. With low average annual rainfall (242mm) and high annual evaporation rates of 2,410mm (HGM, 1998), recharge to groundwater would be low, effectively minimising the risk of salinity. Similarly, residency time for locally ponded waters would be limited, effectively reducing the risk of waterlogging across the area to be cleared. Any clearing is unlikely to increase salinisation, either on-site or off-site, as saline and subsaline soils are common throughout the region (HGM, 1998). Wind roses for Kalgoorlie indicate low wind speeds (HGM, 1998), which would minimise the risk of wind erosion should the vegetation be cleared. The proposal raises no land degradation issues, therefore it is unlikely to be at variance to this principle.

Methodology DAWA (2005).
HGM (1998).
GIS Database:
- Hydrography, linear - DOE 01/02/04.

(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 Kambalda Timber and Nature Reserves, situated alongside each other, are the nearest CALM managed conservation areas to the proposal. Located approx. 15.8km north-west of the area proposed to be cleared, it is unlikely that the vegetation within the proposal would be significant in providing an ecological linkage with regional conservation areas. The benchmark of 15% representation in conservation reserves (JANIS Forests Criteria 1997) has not been met for Beard Vegetation Association 936, however, due to the largely uncleared state of this vegetation type it is not considered to be a serious conservation issue. It is therefore unlikely that the proposed clearing is at variance to this principle.

Methodology JANIS Forests Criteria (1997).
Shepherd et al. (2001)
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- CALM Managed Lands and Water - CALM 1/07/05.
- Lake Lefroy 1.4m Orthomosaic DLI 02

(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 area to be cleared does not fall within a Public Drinking Water Source Area (PDWSA) or PDWSA Protection Zone. Some minor, non-perennial water courses can be found within the vicinity of the area under application, however, these are higher in the landscape and unlikely to be impacted upon by any clearing activity. With an average annual rainfall of 242mm and evaporation rate of 2,410mm (HGM, 1998), there is likely to be little surface flow during normal seasonal rains. It is only during major rainfall events that there would be any significant surface flow. Similarly, recharge into groundwater tables would be minimal, and the quality of groundwater will not be impacted upon through any clearing activity as it is already considered poor with salinities ranging from 14,000mg/L to 35,000mg/L. The area of native vegetation to be cleared is relatively small and unlikely to have an impact on regional groundwater considering the magnitude of the regional Yilgarn-Goldfields groundwater province (>290,000 sq km) and the extent of native vegetation remaining in the Coolgardie Bioregion (~98%). The proposal raises no water quality issues and is therefore unlikely to be at variance to this principle.

Methodology HGM (1998).
Shepherd et al. (2001).
GIS Databases:
- Groundwater Salinity, Statewide - 22/02/00.
- Hydrography, linear - DOE 01/02/04.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
- Groundwater Provinces - WRC 98.
- Public Drinking Water Supply Areas (PDWSAs) - DOE 28/4/05.
- PDWSA Protection Zones -DOE 7/1/04.
- Topographic Contours, Statewide - DOLA 12/09/02.

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

Comments **Proposal is not likely to be at variance to this Principle**
The survey area is not in a natural floodplain and therefore the proposed clearing is unlikely to form a catchment area sufficiently large enough to increase the incidence of flooding (Jims Seeds, Weeds & Trees, 2005). With an average annual rainfall of 242mm and evaporation rate of 2,410mm (HGM, 1998), there is little surface flow during normal seasonal rains. It is only during major rainfall events that there is a possibility of flooding. The broad valleys and lake systems of the region compensate and sustain floodwaters. Given the relatively small area to be cleared, it is unlikely that the proposal is at variance to this principle.

Methodology Jims Seeds, Weeds & Trees (2005).
HGM (1998).
GIS Databases:
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

There are two Native Title Claims over the area under application; WC98/027 AND WC99/002. These claims have been registered with the National Native Title Tribunal on behalf of the Widji and Ngadju claimant groups respectively. However, the mining tenement has been granted, and the clearing is for a purpose consistent with the tenement type, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993.*

There is an Aboriginal site of significance (ID 16016) approximately 5km south of the area under application. It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

The proponent has a current EP Licence (4570/9) valid until 6 October 2007 and no amendment to this licence has been submitted.

The proponent also holds an inforce water licence (GWL62505) which expires on 1 April 2010.

Methodology DoE (2005).
GIS Databases:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	117	**Grant**	The clearing principles have been addressed and the proposed clearing is either not or not likely to be at variance to any of the principles. The assessing officer therefore recommends that the permit be granted.

5. References

CALM (2005) Land clearing proposal advice. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR) - Department of Conservation and Land Management, Western Australia.

DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia.

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.

DoE (2005) Licence check and water allocation advice - Department of Environment, Western Australia.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.

Halpern Glick Maunsell (1998) Lake Lefroy environmental assessment (prepared for WMC Resources Ltd); Report - ES4490C, March 1998

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.

Jims Seeds, Weeds & Trees (2005) Flora survey of the vegetation within the Leviathan area (M15/1631, M15/1542 & M15/1630).

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

Ninox (2004) St. Ives Gold - Delta Island Vertebrate Fauna Assessment, February 2004

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.