



## 1. Application details

### 1.1. Permit application details

Permit application No.: 452/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Croesus Mining N. L.

### 1.3. Property details

Property:

- M30/122
- E30/107
- E30/125
- E30/233
- E30/261
- E30/272
- E30/273
- M16/220
- M16/470
- M30/5
- M30/63
- M30/80
- M30/102
- M30/187
- M30/103
- M30/106
- M30/107
- M30/123
- P30/971
- P30/988
- P30/989
- M30/72
- M30/74
- M30/100
- M30/131
- M30/137
- P30/835
- P30/849
- P30/874

Local Government Area:

Colloquial name: Davyhurst Operation

### 1.4. Application

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

## 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 20: low woodland; mulga mixed with Allocasuarina cristata and Eucalyptus sp.	The proponent provided four vegetation and flora reports as supporting documentation with their application. These reports concern a number of tenements within the area under application including Tuatara, Chameleon, Two Gums, Salmon Gums, Callion, Giles and Eagle Bay. The dominant vegetation type from	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation condition 'good' has been used as some tenements within the area under application are in 'very good' condition and other tenements have vegetation in 'poor' condition.
Beard vegetation association 468: medium woodland; salmon gum and Goldfields blackbutt.			The flora and vegetation survey reports provided do not encompass all of the

Beard vegetation association 483: Hummock grasslands, mixed sandplain - open mallee over sparse dwarf shrubs with spinifex; red mallee and mixed sparse dwarf shrubs over *Triodia basedowii*.

Beard vegetation association 502: medium woodland; Goldfields blackbutt and red mallee.

Beard vegetation association 529: succulent steppe with low open woodland; mulga and sheoak over bluebush.

Beard vegetation association 538: shrublands; *Acacia brachystachya* scrub.

(Shepherd et al 2001, Hopkins et al 2001)

these reports is Eucalyptus woodland with understoreys of Chenopods, Acacias or *Eremophila* (BSD Consultants 1997, Mattiske Consultants 2002, Rally Revegetation and Environmental Services 2004, Shepherdson Environmental Services 2000). Dominant families include Myrtaceae, Mimosaceae, Proteaceae, and Chenopods (BSD Consultants 1997, Mattiske Consultants 2002, Rally Revegetation and Environmental Services 2004, Shepherdson Environmental Services 2000). The reports also document that a wide range of species was recorded including sandalwood in the Giles and Golden Eagle tenements (BSD Consultants 1997, Mattiske Consultants 2002, Rally Revegetation and Environmental Services 2004, Shepherdson Environmental Services 2000). The vegetation condition varied from 'very good' due to the absence of weeds and little historical disturbance, to 'poor' due to these areas being historically used for pastoral activities and extensive mining activities and the presence of introduced species (BSD Consultants 1997, Mattiske Consultants 2002, Rally Revegetation and Environmental Services 2004, Shepherdson Environmental Services 2000).

area under application. Specifically the northern section of the area under application has little information on the composition and condition of the vegetation.

### 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 vegetation contained within the area under application has been described in varying conditions from 'very good' to 'poor' based on previous disturbance from historic pastoral activities and mining (BSD Consultants 1997, Shepherdson Environmental Services 2000, Mattiske Consulting 2002, Rally Revegetation and Environmental Services 2004). Some tenements including the Tuatara, Chameleon, Two Gums and Salmon Gums have been described as having a high diversity of native plants (Mattiske Consulting 2002) with a range of opportunistic fauna having been sighted within the Davyhurst area (Shepherdson Environmental Services 2004). However considering the previous disturbance from historic pastoral and mining activities, it is unlikely that the area under application would have a higher biological diversity value than the surrounding area.

**Methodology**

BSD Consultants (1997) (DoE Trim No. IN21621)  
Mattiske Consultants (2002) (DoE Trim No. IN21619)  
Rally Revegetation and Environmental Services (2004) (DoE IN21622)  
Shepherdson Environmental Services (2000) (DoE Trim No. IN21620)

#### (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**

Three Specially Protected and Priority Listed species could be potentially present within the area under application and include the Mallee Fowl (*Leipoa ocellate*), the Peregrine Falcon (*Falco peregrinus*) and Hooded Plover (*Charadrius rubricollis*) (Shepherdson Environmental Services 2000). CALM (2005) have no records of these fauna species within 50km of the area under application and advised that given the poor condition of the vegetation it would be considered unfavourable habitat and there is a low likelihood of the Mallee Fowl being impacted. Therefore it is considered that the clearing as proposed is not likely to be at variance with this Principle.

**Methodology**

Shepherdson Environmental Services (2000) (DoE Trim No. IN21620)  
CALM (2005) Land Clearing Proposal Advice (DoE Trim No. EI1095)

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

**Comments**

**Proposal may be at variance to this Principle**

One population of the Declared Rare Flora species *Myriophyllum lapidicola* has been recorded approximately 40km west of the area under application (CALM 2005). This species was not identified by any of the flora and vegetation surveys submitted by the proponent and it is unlikely to be detected within the area under application

as the species is found in ephemeral granite rock pools (CALM 2005). A number of Priority species were identified within some of the tenements under application and included *Eremophila* sp. Mt Jackson (Priority 1 species, found in poor health), *Grevillea georgeana* (Priority 3 species) and *Eremophila pustulata* (Priority 3 species) (Mattiske Consulting 2002, Shepherdson Environmental Services 2000). The two Priority 3 species were considered to be locally abundant (Mattiske Consulting 2002, Shepherdson Environmental Services 2000).

**Methodology** CALM (2005) Land Clearing Proposal Advice (DoE Trim No. EI1095)  
 Mattiske Consulting (2002) (DoE Trim Reference IN21619)  
 Shepherdson Environmental Services (2000) (DoE Trim No. IN21620)

**(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 likely to be not at variance to this Principle**  
 No Threatened Ecological Communities (TECs) were identified from the flora and vegetation surveys completed at a number of the mining tenements within the area under application (BSD Consultants 1997, Mattiske Consultants 2002, Rally Revegetation and Environmental Services 2004, Shepherdson Environmental Services 2000). Additionally, no TECs were identified in the vicinity of the area under application.

**Methodology** BSD Consultants (1997) (DoE Trim No. IN21621)  
 Mattiske Consultants (2002) (DoE Trim No. IN21619)  
 Rally Revegetation and Environmental Services (2004) (DoE IN21622)  
 Shepherdson Environmental Services (2000) (DoE Trim No. IN21620)  
 CALM (2005) Land Clearing Proposal Advice (DoE Trim No. EI1095)

**(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 area under application consists of a number of Beard vegetation associations and includes 20, 468, 483, 508, 529 and 538. All of these vegetation associations have a representation above 88% of that present pre-European settlement (Shepherd et al 2001, Hopkins et al 2001). 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). In relation to this application all vegetation associations are substantially above this 30% target.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregions:					
Coolgardie	12,917,718	12,719,084	98.5	Least concern	
Murchison	28,206,195	28,206,195	~100	Least concern	
Shire: Coolgardie	No information available				
Beard vegetation associations:					
20	1,558,296	1,552,012	99.6	Least concern	13.1
468	476,124	476,120	~100	Least concern	0.2
483	588,606	546,359	92.8	Least concern	0.3
508	67,354	66,130	98.2	Least concern	11.8
529	91,871	91,871	100	Least concern	0.0
538	177,284	157,652	88.9	Least concern	10.2

\* Shepherd et al. (2001)

\*\* Department of Natural Resources and Environment (2002)

**Methodology** Shepherd et al (2001)  
 Hopkins et al (2001)  
 Department of Natural Resources and Environment (2002)  
 EPA (2000)

**(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 at variance to this Principle**  
 There are no wetlands or waterbodies associated with the area under application or in close proximity to the area under application.

**Methodology** GIS Databases:  
 - Hydrography, linear - DOE 01/02/04

**(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**

The soils located within the Goldfields area (where area under application is situated) are old and deeply weathered (Mattiske Consulting 2002, Shepherdson Environmental Services 2000). The low rainfall received by the Goldfields area would indicate a low risk of water erosion occurring, however heavily localised falls in short periods of time may increase the risk of water erosion during these events. The saline groundwater located within the area under application poses an increased risk of soil salinity occurring. As there are no waterbodies surrounding the area under application, there would be no risk of eutrophication occurring.

**Methodology** Mattiske Consulting (2002) (DoE Trim No. IN21619)  
Shepherdson Environmental Services (2000) (DoE Trim No. IN21620)  
GIS Databases:  
- Rainfall, Mean Annual - BOM 30/09/01  
- Groundwater Salinity, Statewide - 22/02/00  
- Geodata, Lakes - GA 28/06/02

**(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**

There are no conservation reserves within the vicinity of the area under application. The nearest reserve is 30km south-south-east of the proposed clearing and it is unlikely that this reserve would be impacted due to the separating distances (CALM 2005).

**Methodology** CALM (2005) Land Clearing Proposal Advice (DoE Trim No. EI1095)  
GIS Databases:  
- CALM Managed Land and Waters - CALM 01/08/04

**(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 at variance to this Principle**

The area under application is not located within a Public Drinking Water Source Area and there are no waterbodies within close proximity. The groundwater salinity within the area under application ranges from 1,000-35,000 mg/L. It is therefore unlikely that the clearing as proposed would have a significant impact on groundwater or surface water quality.

**Methodology** GIS Databases:  
- Groundwater Salinity, Statewide - 22/02/00  
- Public Drinking Water Source Areas (PDWSAs) - DOE 04/11/04

**(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 at variance to this Principle**

The area under application receives low annual rainfall (300mm) and has a high evaporation rate (3000 isopleths). As such it is unlikely that the clearing as proposed would have an impact on peak flood height or duration.

**Methodology** GIS Databases:  
- Rainfall, Mean Annual - BOM 30/09/01  
- Evaporation Isopleths - BOM 09/98

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

**Comments** DoIR has raised no objections to the proposal.

There is a Native Title Claim over the area under application by the Central Goldfields, Madugongga, Wongatha and Wutha peoples. However, the mining tenements have been granted, therefore the granting of a clearing permit is not a future act under the Native Title Act. Croesus Mining has confirmed that activities will occur on the appropriate tenements.

**Methodology** Letter from DoIR (KGI582)

#### 4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mining	Mechanical Removal	200	Grant	The assessable criteria have been addressed and the proposed clearing may be at variance to Principles c and g.

For Principle c, a Priority 1 species and two Priority 3 species had been identified within some of the mining tenements under application. The Priority 1 species (*Eremophila* sp. Mt Jacksonia) was considered to be in poor health (Shepherdson Environmental Services 2000). The two Priority 3 species (*Grevillea georgeana* and *Eremophila pustulata*) were considered to be locally abundant (Mattiske Consulting 2002, Shepherdson Environmental Services 2000).

For Principle g, there is the potential for land degradation in the forms of soil salinity and water erosion during localised heavy downpours. However with the appropriate management techniques, the potential impacts can be reduced.

Thus, the assessing officer recommends that this permit should be granted.

#### 5. References

- BSD Consultants Pty Ltd (1997) Consolidated Gold NL Flora Survey of the Davyhurst Area. Prepared for Consolidated Gold by BSD Consultants Pty Ltd.
- CALM (2005) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref EI1095.
- 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.
- 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.
- 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.
- Keighery, BJ (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 (2002) Flora and Vegetation Survey Proposed Mining Areas Tuatara, Chameleon, Two Gums and Salmon Gums - Davyhurst. Prepared for Croesus Mining.
- Rally Revegetation and Environmental Services (2004) Callion (M30/103) Flora and Fauna Survey. Prepared for Croesus Mining.
- 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.
- Shepherdson Environmental Services (2000) Flora of the Davyhurst Area (specifically Giles Pit M30/75 and Golden Eagle M30/05). Prepared for Croesus Mining.