



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4723/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Silver Lake Resources Limited

1.3. Property details

Property: Mining Lease 26/642
Local Government Authority: City of Kalgoorlie-Boulder
Colloquial name: Croesus Pit Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 January 2012

2. Background

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 and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area:

Beard vegetation association 468: Medium woodland; salmon gum & goldfields blackbutt (GIS Database; Shepherd, 2009).

Van Etten (2010) conducted a flora survey of the application area during September 2010, and described three vegetation associations within the application area:

- A) Woodland of *Eucalyptus lesouefii* on Greenstone hills and slopes with quartz and calcareous soils;
- B) Woodland of *E. stricklandii* – *E. lesouefii* – *E. celastroides* on ironstone rises and hill tops; and
- C) Open woodland of Salmon Gum (*E. salmonophloia*) with mixed chenopod understorey in broad valley systems.

Clearing Description Silver Lake Resources Limited (Silver Lake Resources) are proposing to expand the existing Croesus Pit Open Cut Mine and need to clear native vegetation for the purposes of (approximate hectares only – Silver Lake Resources, 2011):

- waste dump extension (11.4 hectares);
- ROM pad (2.5 hectares);
- open pit (2.2 hectares);
- laydown yard (1.4 hectares); and
- access road (0.6 hectares).

Vegetation Condition Completely degraded: No longer intact; completely/almost completely without native species (Keighery, 1994);

To:

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment The application area is located in the Eastern Goldfields subregion of Western Australia and is situated approximately 50 kilometres south-east of Kalgoorlie (GIS Database).

The vegetation condition was derived from a vegetation survey conducted by Van Etten (2010).

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 application area occurs within the Eastern Goldfields (COO3) subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by Mallees, *Acacia* thickets and shrub heaths on sandplains. Diverse *Euclayptus* woodlands occur around salt lakes, on ranges and in valleys. Salt lakes support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on basic graninulites of the Fraser Range. The area is rich in endemic *Acacias* (CALM, 2002).

The vegetation within the application area consists of Beard vegetation association 468, which is common and widespread throughout the Coolgardie bioregion with approximately 100% of the pre-European vegetation extent remaining (Shepherd, 2009; GIS Database). A vegetation survey by Van Etten (2010) during September 2010 of the application area identified 39 species of flora taxa belonging to 15 Families and 21 Genera. Van Etten (2010) identified 3 vegetation communities within the application area, with the condition of these vegetation types classified from 'completely degraded' to 'good' (Keighery, 1994).

No Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) were recorded or identified within the application area, or adjacent to the application area (GIS Database). No TECs or PECs were identified in the vegetation survey by Van Etten (2010).

A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed one Priority Flora species which may potentially occur within a 20 kilometre radius of the application area (*Eremophila arachnoids* subsp. *tenera* – Priority 1). This search revealed no potential Declared Rare Flora (DRF) species (DEC, 2011). Van Etten (2010) identified no DRF or Priority Flora species within the application area, despite suitable habitat for *E. arachnoids* subsp. *tenera* being present.

No weed species were identified during the survey (Van Etten 2010). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey of the application area has not been conducted by Silver Lake, however, based on the level of disturbance to the application area and the distribution of the vegetation communities throughout the Coolgardie bioregion, the application area is unlikely to provide a significant habitat for conservation significant fauna species.

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

Methodology CALM (2002)
DEC (2011)
Keighery (1994)
Shepherd (2009)
Van Etten (2010)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation
- 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**

Van Etten (2010) identified the vegetation condition of the survey area to be 'completely degraded' to 'good' (Keighery, 1994). The three vegetation communities identified in the flora and vegetation survey are likely to be common and widespread throughout the Coolgardie bioregion (Van Etten, 2010).

There is approximately 100% of the pre-European vegetation remaining within the Coolgardie bioregion (Shepherd, 2009; GIS Database). Given the extent of the native vegetation remaining in the local area and bioregion, the vegetation to be cleared does not represent a significant ecological link.

A search of DEC's NatureMap (DEC, 2011), has revealed that no conservation significant fauna potentially occur within a 20 kilometre radius of the application area. Therefore, the vegetation present in the application area is unlikely to represent significant habitat for conservation significant fauna.

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

Methodology DEC (2011)
Keighery (1994)
Shepherd (2009)

Van Etten (2010)
 GIS Database:
 - IBRA WA (regions - subregions)
 - Pre-European Vegetation

(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**
 According to available databases, there are no records of Declared Rare Flora (DRF) within the application area (GIS Database). A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases identified no DRF species as occurring within a 20 kilometre radius of the application area (DEC, 2011).

Van Etten (2010) conducted a vegetation and flora survey of the application area during September 2010. No DRF were recorded within the survey area.

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

Methodology DEC (2011)
 Van Etten (2010)
 GIS Database:
 - Declared Rare and Priority Flora List

(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**
 A search of the available databases shows that there are no Threatened Ecological Communities (TECs) within or adjacent to the application area (GIS Database).

The survey by Van Etten (2010) did not identify any TECs within the survey area.

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

Methodology Van Etten (2010)
 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 falls within the Coolgardie IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:
Beard vegetation association 468: Medium woodland; salmon gum & goldfields blackbutt (GIS Database; Shepherd, 2009).

According to Shepherd (2009), Beard vegetation association 468 retains approximately 100% of its pre-European extent. Therefore, the areas proposed to be cleared are not a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Coolgardie	12,912,204.46	12,707,872.99	~98.42	Least Concern	10.87
Beard vegetation associations - State					
468	592,022.40	592,022.36	~100	Least Concern	4.28
Beard vegetation associations - Bioregion					
468	583,357.73	583,357.73	~100	Least Concern	4.28

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
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 watercourses or wetlands within the application area (GIS Database). According to available databases, there are also no major or minor ephemeral drainage lines that traverse the application area (GIS Database).

Based on vegetation mapping by Van Etten (2010), none of the vegetation types identified are associated with drainage depressions or are identified as riparian vegetation.

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

Methodology Van Etten (2010)
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

According to available databases, the application area is comprised of the:

Moriarty Land System: Low greenstone rises and stony plains, supporting chenopod shrublands with patchy eucalypt overstoreys (Pringle et al., 2004; GIS Database).

Part of the application area is in an area that has not been mapped by the Rangeland Land System Mapping, however, it comprises only a small area and is likely to have similar characteristics to the Moriarty Land System (GIS Database).

The Moriarty Land System has slopes of low rises without protective stone mantles, alluvial plains and narrow drainage tracts, which are moderately susceptible to water erosion, particularly if perennial shrub cover is reduced or the soil surface is disturbed (Pringle et al., 1994).

Potential soil 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 Pringle et al. (1994)
GIS Database
- Rangeland Land System Mapping

(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 is not located within any conservation area (GIS Database). The nearest conservation area is Kambalda Nature Reserve, located approximately 27 kilometres to the southwest of the application area (GIS Database).

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

Methodology GIS Database:
- DEC 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) (GIS Database).

According to available databases, there are no permanent or ephemeral watercourses or water bodies within the application area (GIS Database).

The application area is in the Goldfields Groundwater Area, however the small area proposed to be cleared and the existing level of disturbance mean that an impact on groundwater is unlikely.

The proposed mineral production activities are therefore unlikely to cause deterioration in the quality of surface or underground water.

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

Methodology

GIS Database:
- Geodata, Lakes
- RIWI Act, Groundwater Areas
- Hydrography, Linear
- Public Drinking Water Source Areas

(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

According to available databases there are no permanent or ephemeral watercourses mapped within the application area (GIS Database). The application area is located within an arid region with average annual rainfall of 265.2 millimetres (BoM, 2011).

Given the size of the area to be cleared (18.03 hectares) compared to the size of the Lake Lefroy and Raeside-Ponton catchment areas (2, 488, 251 and 11, 589, 533 hectares respectively) (GIS Database), it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

Methodology

BoM (2011)
GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, Linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There is one Native Title claim (WC98/27) over the area under application (GIS Database). 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*.

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 and Conservation 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 12 December 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

- BoM (2011) Climate Statistics for Australian Locations: 'Newman'. Bureau of Meteorology. Available at: http://www.bom.gov.au/climate/averages/tables/cw_012038.shtml
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 2 (PIL2 – Fortescue Plains subregion) Department of Conservation and Land Management, Western Australia.
- DEC (2011) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 23 December 2011, <<http://naturemap.dec.wa.gov.au>>.
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pringle, H.J.R., Van Vreeswyk, A.M.E. & Gilligan, S.A. (1994) An Inventory and Condition Survey of the North-eastern Goldfields, Western Australia, Department of Agriculture, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Silver Lake Resources (2011) Croesus Pit – Request Permission to Clear on Mining Tenement M26/642. Letter to DMP, November 2011.
- Van Etten, E. (2010) Flora and Vegetation of Silver Lake Resources Wombola Dam Project Area, near Kalgoorlie, Western Australia. Unpublished report prepared for Minesite Environmental Pty Ltd, Kalgoorlie, October 2010.

Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
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
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:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
 (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
 (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
 (a) is not critically endangered; and
 (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
 (a) is not critically endangered or endangered; and
 (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD

Conservation Dependent: A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.