



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6890/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Strother Mining Pty Ltd**

1.3. Property details

Property: Mining Lease 70/1318
Local Government Area: Shire of Kondinin
Colloquial name: Lake Carmody Gypsum Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 20 October 2016

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. Two Beard vegetation associations have been mapped within the application area (GIS Database):

Beard vegetation association 125: Bare areas; salt lakes; and
Beard vegetation association 511: Medium woodland; salmon gum and morrel.

Casuarina obesa Open Woodland: *Casuarina obesa* trees to 7m form a very sparse stratum (usually 2-10% canopy cover) with a sparse understory of shrubs to 0.5m including *Tecticornia moniliformis*, *Tecticornia? pruinosa*, *Tecticornia undulata*, *Rhagodia drummondii*, *Disphyma crassifolium*, *Lawrencia squamata*, *Enchylaena tomentosa*, *Maireana oppositifolia*, *Zygophyllum aurantiacum* and *Atriplex? paludosa*. Scattered shrubs of *Hakea preissii* to 2m were also recorded.

Hakea preissii Scrub/Heath: *Hakea preissii*, *Lycium australe*, *Santalum acuminatum* and *Dodonaea viscosa* shrubs to 2m form a sparse stratum (10-30% canopy cover) with a mid dense understory of shrubs (30-70% canopy cover) including *Tecticornia moniliformis*, *Tecticornia species*, *Rhagodia drummondii*, *Atriplex paludosa*, *Maireana oppositifolia* and *Enchylaena tomentosa*.

Mixed Heath: Shrubs to 0.5m form a mid dense stratum (30-70% canopy cover) including *Tecticornia? loriae*, *Tecticornia? pruinosa*, *Tecticornia syncarpa*, *Atriplex vesicaria*, *Frankenia? tetrapetala* (no flowers), *Disphyma crassifolium*, *Maireana oppositifolia*, *Lawrencia squamata*, *Frankenia sp.* southern gypsum P3, *Atriplex holocarpa*, *Eremophila deserti*, *Atriplex paludosa* and *Zygophyllum aurantiacum*.

Tecticornia (sapphire) Scrub/ Heath: *Tecticornia* Heath occurs over large areas on gypsum soils over clay on low lying areas subject to inundation. Shrubs to 0.5m form a mid dense stratum (30-70% canopy cover) occasionally 10-30% cover. Sapphires are prominent including *Tecticornia syncarpa*, *Tecticornia moniliformis*, *Tecticornia? loriae*, *Tecticornia? peltata* and *Tecticornia? pruinosa*. Other species recorded include *Frankenia sp.* southern gypsum P3, *Disphyma crassifolium*, *Calandrinia sp.? Meckering* and *Maireana oppositifolia*.

Clearing Description Lake Carmody Gypsum Project
Strother Mining Pty Ltd proposes to clear up to 128.70 hectares of native vegetation within a total boundary area of the same size for the purpose of mineral production. The proposal is located approximately 45 kilometres east of Hyden in the Shire of Kondinin.

Vegetation Condition Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Kieghery, 1994);

Comment Vegetation condition was derived from a flora and vegetation survey undertaken by Rick (2016) and from aerial imagery of the application area (GIS Database).

Clearing permit CPS 6890/1 was granted by DMP on 11 February 2016, authorising the clearing of up to 21.43 hectares of native vegetation within a boundary of approximately 130.61 hectares.

On 22 August 2016, the permit holder applied to amend CPS 6890/1 to increase the area authorised to clear by 107.27 hectares from 21.43 hectares to 128.70 hectares and decrease the permit boundary by 1.91 hectares from 130.61 hectares to 128.70 hectares.

3. Assessment of application against clearing principles

Comments The application area occurs within the Western Mallee subregion of the Mallee Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Mallee bioregion is the south-eastern part of the Yilgarn Craton. The Western Mallee subregion's main surface-types comprise clays and silts underlain by Kankar, exposed granite, sandplains and laterite pavements and salt lake systems on a granite basement. Mallee communities occur on a variety of surfaces; Eucalyptus woodlands occur mainly on fine textured soils, with scrub-heath on sands and laterite (CALM, 2002).

The amended application area is located within Lake Carmody which is a non perennial salt lake (GIS Database). Beard vegetation association 125: Bare areas; salt lakes; and Beard vegetation association 511: Medium woodland; salmon gum and morel, were found to occur within the application area (GIS Database). Approximately 90% of vegetation association 125 remains across the state and approximately 67% remains within the bioregion (Government of Western Australia, 2014). For vegetation association 511, approximately 74% remains across the state and 48% remains within the bioregion; which is more than the 30% threshold level recommended in the National Objectives and Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The majority of the application area is broadly mapped as vegetation association 511 (GIS Database). Given the above, it is unlikely the proposed clearing of 128.70 hectares represents a significant remnant of native vegetation.

A flora and vegetation survey was undertaken over the application area on 26 June 2016 (Rick, 2016). No species of Threatened flora were recorded during the survey. One Priority flora species *Frankenia* sp. southern gypsum (Priority 3) was recorded during the flora survey (Rick, 2016).

Frankenia sp. southern gypsum has been recorded at 13 out of 25 (10 metre x 10 metre) quadrats sampled in the Lake Magenta chain of salt lakes, including Lake Burkett, Lake Lockhart and Lake Magenta (Rick, 2016). *Frankenia* sp. southern gypsum was also found to occur in regenerated areas following past mining operations (Rick, 2016). Therefore the additional clearing proposed under this amendment is considered unlikely to significantly impact on the conservation status of this species.

The application area does not fall within a Priority Ecological Community (PEC) or Threatened Ecological Community (TEC) (GIS Database; Rick, 2016). The permit boundary does not intersect with any conservation areas (GIS Database).

Several weed species were recorded during the flora and vegetation survey (Rick, 2016). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No fauna survey has been conducted over the application area. A search of available databases and a desktop study identified the following conservation significant species as potentially occurring within the application area (DPaW, 2016):

- Baudin's Cockatoo (*Calyptorhynchus baudinii* – Endangered);
- Carnaby's Cockatoo (*Calyptorhynchus latirostris* - Endangered);
- Malleefowl (*Leipoa ocellata* - Vulnerable);
- Peregrine Falcon (*Falco peregrinus* - Migratory);
- Sharp-tailed Sandpiper (*Calidris acuminata* - Migratory);
- Rainbow Bee-eater (*Merops ornatus* - Migratory);
- Hooded Plover (*Charadrius rubricollis* - Priority 4);
- Western Rosella (*Platycercus icterotis xanthogenys* - Priority 4).

The application area mostly consists of low growing vegetation dominated by samphires and provides limited fauna habitat (Rick, 2016; GIS Database). The vegetation associations and fauna habitat types within the application area are well represented within the surrounding areas. The proposed clearing of 128.70 hectares of native vegetation is therefore unlikely to have a significant impact on fauna habitat.

Lake Carmody is a playa salt lake which is part of a chain of salt lakes in the Hyden region (GIS Database). The proposed clearing is mainly within the lake bed itself with a small proportion being along the margin of the lake shore (GIS Database). Given the size of the proposed clearing (128.70 hectares) in relation to the size of Lake Carmody (4,049 hectares), clearing is unlikely to have a significant impact to the functioning of the lake, or result in a deterioration in water quality (GIS Database).

The groundwater salinity within the application area is approximately 14,000 - 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be hyper saline. As such the proposed clearing is not likely to cause a significant impact to groundwater quality.

Wind erosion of the non-perennial lake margins may be exacerbated by loss of stabilising perennial shrubs given the amount of clearing (128.70 hectares) (GIS Database). Potential impacts of 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 is at variance to Principle (f), may be at variance to Principle (g) is not likely to be at variance to Principles (a), (b), (c), (d), (h), (i) and (j) and is not at variance to Principle (e).

Methodology CALM (2002)
Commonwealth of Australia (2001)
DPaW (2016)
Government of Western Australia (2015)
Keighery (1994)
Rick (2016)

GIS Database:
- DPaW tenure
- Hydrography, linear
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened Ecological Sites Boundaries
- Threatened Ecological Sites Buffered

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

Comments There are two native title claims (WC2003/006 and WC2000/007) over the area under application (DAA, 2016). 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 (DAA, 2016). 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 12 September 2016 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology DAA (2016)

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National objectives and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra, ACT.
- DAA (2016) Aboriginal Heritage Inquiry System. Department of Aboriginal Affairs. <http://maps.dia.wa.gov.au/AHIS2/> (Accessed 3 October 2016)
- DPaW (2016) NatureMap - Mapping Western Australia Biodiversity, Department of Parks and Wildlife, <<http://naturemap.dpaw.wa.gov.au/default.aspx>> (viewed 3 October 2016).
- Government of Western Australia (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Currently as of June 2015. 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.
- Rick (2016) Lake Carmody Gypsum Project – Desktop Study; Fauna and Flora. Unpublished report prepared for Strother Mining Pty Ltd by Austwide Title Management Pty Ltd - November 2015.

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	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2015) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia):-

- T** **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).
Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.
Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.
The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.
- CR** **Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN** **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU** **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX** **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA** **Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD** **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS** **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P** **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

- P1 Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations 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 locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
- 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 are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

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.