



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2203/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Robe River Pty Ltd

### 1.3. Property details

Property: State Agreement Mineral Lease 248SA (AML70/248)  
Local Government Area: Shire Of Ashburton  
Colloquial name: Mesa J Exploration

### 1.4. Application

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

## 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 at a 1:250 000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. Four Beard vegetation associations are located within the application area (GIS Database):

82 - Hummock Grasslands, low tree steppe; snappygum over *Triodia wiseana*.

603 - Hummock Grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex.

605 - Hummock Grasslands, shrub steppe; *Acacia pachycarpa* & waterwood over soft spinifex.

609 - Mosaic: Hummock grasslands, open low tree steppe; bloodwood with sparse kanji shrubs over soft spinifex/Hummock grasslands, open low tree steppe; snappygum over *Triodia wiseana* lateritic crust.

The application is composed of 5 separate application areas. For the purpose of this assessment the largest area to the south will be called the southern application area. Two areas north of the southern application area will be called the northern application area. Two areas east of the northern application area will be called the eastern application area.

Vegetation surveys have been completed over the southern, northern and eastern application areas.

**Southern:** 6 vegetation types were identified in 2003 by Biota Environmental Sciences (cited in botanical survey report supplied by Robe). These are:

1. Drainage Area: *Corymbia hamersleyana* low open woodland over *Acacia tumida*, *Petalostylis labicheoides* open scrub over *Triodia wiseana*, *T. epactia* mid-dense hummock grassland.
2. Stony Plains, Hills and Ridges: *Acacia inaequilatera* scattered tall shrubs over *T. wiseana*, *T. sp. nov* mid dense hummock grassland.
3. Stony Plains, Hills and Ridges: *A. inaequilatera*, *A. bivenosa*, *Hakea chordophylla* open shrubland over *T. wiseana* mid-dense hummock grassland.
4. Stony Plains, Hills and Ridges: *A. pruinocarpa* high open shrubland over *Eremophila fraseri* scattered low shrubs to low open shrubland over *T. wiseana* hummock grassland.
5. Stony Plains, Hills and Ridges: *C. hamersleyana* low woodland over *A. bivenosa* shrubland over *T. epactia*, *T. wiseana* mid-dense hummock grassland.
6. Stony Plains, Hills and Ridges: *C. hamersleyana* low open woodland over *A. bivenosa* shrubland over *T. wiseana* mid-dense hummock grassland.

**Northern:** 9 vegetation types identified by Biota Environmental Sciences (2007).

1. *Acacia tumida* var. *pilbarensis* tall open scrub over *Petalostylis labicheoides* scattered shrubs over *Triodia wiseana* scattered hummock grassland.
2. *A. inaequilatera* tall open shrubland over *Senna glutinosa* ssp. *x luerssenii* open shrubland over *T. wiseana* very open hummock grassland.
3. *Grevillea pyramidalis*, *Hakea chordophylla* scattered tall shrubs over *Ptilotus calostachyus* scattered low

shrubs over *T. wiseana* hummock grassland.

4. *Petalostylus labicheoides*, *A. inaequaliter*, *A. ancistrocarpa* open shrubland over *Ptilotus calostachyus*, *Corchorus sidoides* low open shrubland over *T. wiseana* very open hummock grassland.

5. *A. inaequilatera* scattered tall shrubs over *A. ancistrocarpa* open shrubland over *T. wiseana* very open hummock grassland.

6. *Eucalyptus leucophloia*, *Corymbia hamersleyana* scattered low trees over *A. ptychophylla* open shrubland over *T. wiseana*, *T. sp. nov.* open hummock grassland.

7. *Grevillea wickhamii* tall shrubland over *A. ptychophylla* open shrubland over *Ptilotus calostachyus* scattered low shrubs over *T. wiseana* very open hummock grassland.

8. *E. leucophloia*, *C. hamersleyana* scattered low trees over *Grevillea pyramidalis*, *A. ptychophylla* scattered shrubs over *T. wiseana*, *T. sp. nov.* open hummock grassland.

9. *E. leucophloia*, *C. hamersleyana* scattered low trees over *G. wickhamii* tall open shrubland over *Petalostylis labicheoides* scattered shrubs over *T. wiseana*, *T. sp. nov.* very open hummock grassland.

**Eastern:** 7 vegetation types identified by Robe staff (Robe 2007).

1. *Hakea lorea* scattered low trees over *Acacia orthocarpa* high open shrubland over *T. wiseana* and *T. sp. nov.* hummock grassland.

2. *Acacia orthocarpa* high shrubland over *T. wiseana* and *T. sp. nov.* hummock grassland.

3. *Corymbia hamersleyana* and *Hakea lorea* low open woodland over *A. inaequilatera* and *A. orthocarpa* high shrubland over *T. wiseana* and *T. sp. nov.* hummock grassland.

4. *C. hamersleyana* scattered low trees over *A. orthocarpa* low scattered shrubs over *T. wiseana* and *T. sp. nov.* hummock grassland.

5. *C. hamersleyana* scattered low trees over *A. pruinocarpa* high open shrubland over *A. orthocarpa* low scattered shrubs over *T. wiseana* and *T. sp. nov.* hummock grassland.

6. *A. orthocarpa* open heath over *T. wiseana* and *T. sp. nov.* hummock grassland.

7. *E. leucophloia* low open woodland over *A. citrinoviridis* and *Petalostylis labicheoides* high shrubland over *T. wiseana* and *T. sp. nov.* hummock grassland.

**Clearing Description**

Robe River Pty Ltd (Robe) have applied to clear 42 hectares of native vegetation within an application area of approximately 165 hectares. The clearing is for maintaining and establishing tracks, clearing drill lines (4m x 20 km) and creating drill pads (20m x 15m). Robe have committed to using existing tracks where possible and rehabilitating tracks and pads upon completion.

**Vegetation Condition**

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

To

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

**Comment**

Vegetation condition was described as excellent to very good by Biota Environmental Sciences (Biota, 2007). Photographs supplied by Robe (2007) of the application area support this description. Some areas have been previously disturbed by exploration activities.

**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 may be at variance to this Principle**

The application areas occur within the Hamersley (PIL3) IBRA Sub-Bioregion (GIS Database). This sub-bioregion is characterised by Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). The vegetation described within the application areas (Biota, 2007; Robe, 2007) is typical of the bioregion.

Vegetation surveys of the application areas identified 140 flora species from 36 Families (Biota, 2007; Robe, 2007). This is considered to be biologically diverse. Mimosaceae, Amaranthaceae, Malvaceae, Poaceae and Papilionaceae families are particularly diverse within the application area. This is typical of the floristics of the Pilbara IBRA Region.

The area search of the Western Australian Museum's Faunabase conducted by the assessing officer suggests that the application areas are diverse in reptile species with 45 species from 8 Families, being particularly diverse in skinks and geckos (Western Australian Museum, 2008).

No alien weed species were recorded within the application areas during recent vegetation surveys (Biota, 2007; Robe, 2007). The southern area in particular has been previously disturbed by exploration activities.

Therefore, the application areas are high in biodiversity but are not likely to have greater diversity than similar areas within the region.

Based on the above, the proposed clearing may be at variance to this Principle. It is recommended that conditions be placed on any permit granted to require the permit holder to rehabilitate the area cleared within 6 months of clearing commencing.

**Methodology** Biota (2007)  
CALM (2002)  
Robe (2007)  
WAM (2008)

**(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**

An opportunistic fauna survey was conducted by Biota Environmental Sciences (Biota, 2007) over the northern application areas and surrounds. As a result of this survey Biota did not identify any unique restricted or fauna specific habitat types within the application areas. During this fauna survey, the conservation significant Rainbow bee-eater (*Merops ornatus*) was observed.

The assessing officer conducted a search of the Western Australian Museum's Fauna database between the coordinates 116.0°, 21.5° and 116.5°, 22.0°, which includes the application areas and approximately 50 km surrounding. This search revealed a total of 15 Mammal, 5 Avian, 3 Amphibian and 42 Reptile species which have previously been recorded within the coordinates (Western Australian Museum, 2008). Included within these species were the conservation significant Northern Quoll (*Dasyurus hallucatus*) and Orange Leaf-nosed Bat (*Rhinonicteris aurantius*).

Robe requested a database search of the DEC's threatened and priority fauna database, using coordinates closely matching those above which were used by the assessing officer. As a result, the following conservation significant fauna were identified (Robe, 2007): Orange Leaf-nosed Bat, Night (*Pezoporus occidentalis*), *Ramphotyphlops ganei* (a blind snake), Lakeland Downs Mouse (*Leggadina lakedownensis*) and Western Pebble Mound Mouse (*Pseudomys chapmani*).

The Northern Quoll (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2006*) is known to occur in a range of habitats, including *Eucalyptus* open forest, monsoon rainforest and savannah woodland, but is most abundant (and apparently with less fluctuation) in rocky environments (Braithwaite et al, 1994). It has undergone substantial decline in the Pilbara and is now known to occur in geographically isolated populations (Firestone, 1999). This species may no longer occur within the application area. However, the vegetation types within the application areas, and their proximity to mining areas would suggest that the vegetation within the application areas is not significant habitat for this species.

The Orange Leaf-nosed Bat (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2006*) is described as preferring warm humid caves for roosting, although some have been found in tree hollows (Australian Museum Online, 2007a). They are known to hunt flying prey close to roosts, and glean from foliage and the ground in riparian vegetation in gorges, and in open hummock grasslands and sparse tree and shrub savannah (Department of Environment and Water Resources, 2007). Known colonies in the Pilbara occupy abandoned, deep and partially flooded mines that trap pockets of warm, humid air in the mine's constant temperature zone. For at least part of the year, the species is thought to also occupy smaller, less complex mines nearby. There are no known natural roosting sites in the Pilbara (Department of Environment and Water Resources, 2007). It is not known if there are any abandoned mines within the application areas, however Biota (2007) did not record any unusual fauna habitats during their survey. The type of clearing proposed (exploration drilling) is unlikely to disturb Orange Leaf-nosed Bat colonies if present in the vicinity of the application areas. Therefore, the vegetation within the application area could not be considered as significant habitat for this species.

The Rainbow Bee-eater (Migratory species under the *Environmental Protection and Biodiversity Conservation Act 1996*) is able to utilise a wide range of habitat types and nests in sandy soils. It is likely to utilise the application areas for feeding and may nest if sandy soils are present. However, given the vast area of the Pilbara IBRA Bioregion, it is unlikely that the vegetation within the application areas is significant habitat for this species.

The Night Parrot (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2006*) is a very seldom seen bird that occupies dense, low vegetation, which provides them shelter during the day (Australian Museum Online, 2007b). Most records come from hummock grasslands with spinifex (porcupine grass, *Triodia sp.*), or from areas dominated by samphire. It has been suggested that birds move into the grasslands when *Triodia* is seeding (Australian Museum Online, 2007b). They have also been reported in low chenopod shrublands comprising saltbush and bluebush, and from areas of Mitchell grass, *Astrebula sp.* with scattered chenopods (Australian Museum Online, 2007b). Many records have come from waterholes, and almost all reports from areas of *Triodia* have noted the presence of nearby water (Australian Museum Online, 2007b). As this species is very rare, and little is known of its distribution, it is difficult for the assessing officer to determine what impact, if any, the proposed clearing will have on this species. However,

given the lack of permanent water in the application areas, it is unlikely that the vegetation to be cleared represents significant habitat for this species.

The Western Pebble-mound Mouse (DEC - Priority 4) is described as constructing pebble mounds on slopes composed of stony soils, near sharply incised drainage lines (Start et al, 2000). Mounds are built in vegetation dominated by hard spinifex (*Triodia basedowii* or *T. wiseana*) (Start et al, 2000). No pebble mounds were observed by Biota during a vegetation survey over the northern application area (Biota, 2007). No mounds were observed by Pilbara Iron staff during a survey over the southern application area. It is not considered that the vegetation within the application area is significant habitat for this species.

The Lakeland Downs Mouse (DEC - Priority 4) is known to occur on sandy soils and cracking clays that support native grasses (DEC, 2006). It is known that this species experiences great fluctuations in population size depending on seasonal factors, reaching plague proportions in good years (DEC, 2006). The soil types located within the application area appear to be gravelly stony soils and therefore the area may not be ideal habitat for this species. Therefore, it is unlikely that the vegetation to be cleared is significant habitat for this species.

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

**Methodology** Australian Museum Online (2007a)  
Australian Museum Online (2007b)  
Biota (2007)  
Braithwaite et al (1994)  
DEC (2006)  
Department of Environment and Water Resources (2007)  
EPA (2004)  
Firestone (1999)  
Robe (2007)  
Start et al (2000)  
Western Australian Museum (2008)

**(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, no Declared Rare or Priority flora species have been recorded within the application areas (GIS Database).

According to maps supplied by Robe with their application, several Priority 3 flora populations have been recorded within the southern application area (Robe, 2007). These were recorded by Biota Environmental Services in 2005 (Robe, 2007). A total of 2 *Abutilon trudgenii* ms plants from two populations and approximately 68 *Sida sp.* Wittenoom from 10 populations were recorded.

No Declared Rare or Priority flora have been found within either the northern application area or the eastern application area (Robe, 2007; Biota, 2007).

*Abutilon trudgenii* ms has been recorded extensively with Robe's tenements and throughout the Hamersley IBRA Sub-bioregion. It is not likely that the vegetation within the application area is significant habitat for *A. trudgenii* ms.

*Sida sp.* Wittenoom has been recorded extensively with Robe's tenements and throughout the Hamersley IBRA Sub-bioregion. It is not likely that the vegetation within the application area is significant habitat for *S. sp.* Wittenoom.

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

**Methodology** Robe (2007)  
GIS Database:  
- 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 threatened ecological community.**

**Comments Proposal is not likely to be at variance to this Principle**

There are no known Threatened Ecological Communities (TEC) located within the application area (GIS Database). The nearest TEC is located approximately 90 km to the east. At this remote distance there is little likelihood of any impact to this TEC from the proposed clearing.

No TEC communities were identified within the application areas (Biota, 2007; Robe, 2007)

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

**Methodology** Biota (2007)  
 Robe (2007)  
 GIS Database:  
 - Threatened Ecological Communities - CALM

**(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**

According to available databases, the application areas fall within the Pilbara IBRA Bioregion (GIS Database). This bioregion's vegetation extent remains at approximately 100% of its Pre-European extent\*. Beard Vegetation Association's 82, 603, 605 and 609 occur within the application areas (GIS Database). These vegetation associations remain at 100% of its Pre-European extent\*. These vegetation associations are located exclusively in the Pilbara Region.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,164	17,794,651	~99.9	Least Concern	6.3
Beard veg assoc. – Pilbara					
82	2,565,930	2,565,930	~100	Least Concern	10.2
603	56,728	56,728	~100	Least Concern	0
605	114,119	114,119	~100	Least Concern	0.2
609	74,188	74,188	~100	Least Concern	0

\* Shepherd et al. (2001) updated 2005

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

Therefore, the application areas are not considered to be significant remnants of vegetation in an area that has been extensively cleared.

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

**Methodology** Department of Natural Resources and Environment (2002)  
 Shepherd et al (2001)  
 GIS Database:  
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00  
 - Pre-European Vegetation - DA 01/01

**(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 at variance to this Principle**

Several minor, non-perennial drainage lines occur within the southern application area (GIS Database). These drainage lines are minor tributaries of the Robe River and would only experience water flows during periods of intense rainfall. The vegetation within the application area could not be considered to be riparian.

Robe have stated that proposed drill lines cross a few minor, ephemeral drainage tracts (Robe, 2007). Given that the area is a *Rights in Water Irrigation Act 1914* (RIWI) Act Surface Water Management Area (GIS Database), Robe may require authority from the Department of Water to disturb the bed and banks of these ephemeral drainage lines. It is Robe's responsibility to ensure that all necessary approvals have been obtained prior to the commencement of any clearing associated with this proposal.

Based on the above, the proposed clearing is at variance with this Principle.

**Methodology** Robe (2007)  
 GIS Database:  
 - Hydrography, Linear - DOE 1/2/04

**(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 application area has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al 2004).

The application area is composed of the following land systems (GIS Database):

- 1) Boolgeeda
- 2) Newman
- 3) Robe

The Boolgeeda Land System is described as stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands. The vegetation within the system is not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk, 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Stony Lower Plain', 'Grove' and 'Narrow drainage floor and channel' land units. The soil types within these land units (red loamy earths) are not susceptible to erosion (Van Vreeswyk et al, 2004). The vegetation described by Van Vreeswyk et al (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota - 2007, Robe - 2007).

The Newman Land System is described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al, 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Plateau, ridge mountain and hill' and the 'Lower slope' land units. The soil types within these land units (stony soils, red shallow loams, red loamy earths and red shallow sands) are not susceptible to erosion (Van Vreeswyk et al, 2004). The vegetation described by Van Vreeswyk et al (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota - 2007, Robe - 2007).

The Robe Land System is described as low limonite mesas and buttes supporting soft spinifex (and occasionally hard spinifex) grasslands. The system is not generally susceptible to vegetation degradation or erosion (Van Vreeswyk et al, 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Low plateau, mesa and butte' and 'lower slope land units'. The soil types within these land units (stony soils, shallow gravel soils, red shallow loams and minor calcareous shallow loams) are not susceptible to erosion (Van Vreeswyk et al, 2004). The vegetation described by Van Vreeswyk et al (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota, 2007; Robe, 2007).

Therefore, due to the topography, soil types and nature of clearing (narrow linear tracks), there is very little risk of erosion.

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

**Methodology** Biota (2007)  
Robe (2007)  
Van Vreeswyk et al (2004)  
GIS Database:  
- Rangeland Land System Mapping - DA

**(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 at variance to this Principle**

According to available databases, Cane River Pastoral Station (managed by DEC) is located approximately 44 kilometres south west of the application areas whilst Millstream-Chillchester National Park is located approximately 85 km north east of the application areas (GIS Database). At these distances it is not likely that the vegetation within the application area provides a buffer to a conservation area, or is important as an ecological link to a conservation area. The vegetation types within the application areas are well replicated in other land systems within the Pilbara region. Subsequently, their conservation status is under no threat.

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

**Methodology** GIS Database:  
- CALM Managed Lands and Waters - CALM 1/7/05

**(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**

According to available databases, the application area is not located within a Public Drinking Water Supply Area

(PDWSA) (GIS Database). The area is located within a *RIWI Act* Surface Water Management Area (GIS Database). The proponent is required to obtain a Beds and Banks Permit in order to disturb any water course (DoW, 2007). The area is located in a *RIWI Act* Groundwater area. The proponent is required to obtain permits to extract groundwater in this area (DoW, 2007).

There are no permanent waterbodies or watercourses within, or in association with, the application area (GIS Database). Rainfall in this area is mainly restricted to a wet summer season, where precipitation can be variable. Rain can be either intense falls associated with cyclonic events, or scattered falls associated with local thunderstorms. The application area receives rainfall of approximately 300 mm/year (BOM, 2007), and experiences a pan evaporation rate of approximately 3400 mm/year (Luke et al, 1987). Therefore, during normal rainfall events, surface water within the application area is likely to evaporate or be utilised by vegetation quickly. However, substantial rainfall events create surface sheet flow which is likely to be high in sediments.

During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of waterbodies on or off site.

The groundwater salinity within the application area is approximately 500-1000 mg/L Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. The size of the area to be cleared compared to the size of the groundwater province (Hamersley - 101668 sq km) (GIS Database) is not likely to cause salinity levels within the application area to alter significantly.

There are no known Groundwater Dependant Ecosystems within the application area (GIS Database).

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

**Methodology** BoM (2007)  
DoW (2007)  
Luke et al (1987)  
GIS Database:  
- Groundwater, Statewide - DoW  
- Public Drinking Water Source Areas (PDWSA's) - DoW  
- Hydrography, Linear - DOE 1/2/04  
- Potential Groundwater Dependent Ecosystems - DoE 2004

**(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**

The application area experiences an arid, tropical climate with a wet summer season and a dry winter season (BOM, 2007). Most rainfall is received during the wet season, but falls can be variable (BOM, 2007). Rain can either be sporadic (local thunderstorms) or heavy and intense (cyclonic events). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas. However, the method of clearing and the small area to be cleared are not likely to lead to an increase in flood height or duration. Flooding is not expected within the application areas as they are located higher in the landscape.

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

**Methodology** BOM (2007)

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

**Comments**

There is a native title claim over the area under application (GIS Database). The claim has been registered with the National Native Title Tribunal. However, the mining tenement 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 many Aboriginal Sites of Significance within two kilometres of the application areas. However, Robe have advised that they have designed their drilling program to avoid heritage sites (Robe, 2007). 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.

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 application areas are located within a *Rights in Water Irrigation Act 1914* (RIWI Act) Surface Water Management Area (GIS Database). The proponent is required to obtain a Beds and Banks Permit in order to disturb any water course (DoW, 2007). The application areas are located in a *RIWI Act* Groundwater area. The

proponent is required to obtain permits to construct and extract groundwater in this area (DoW, 2007).

**Methodology** DoW (2007)  
GIS Database:  
- Native Title Claims - DLI  
- Aboriginal Sites of Significance - DIA  
- Groundwater, Statewide - DoW

#### 4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
State Agreement	Mechanical Removal	42	<p>The proposal has been assessed against the Clearing Principles and has been found to be at variance to Principle (f), may be at variance to Principle (a), is not likely to be at variance to Principle (b), (c), (d), (g), (i) and (j) and is not at variance to Principle (e) and (h).</p> <p>It is recommended that should a permit be granted, conditions be endorsed on the permit with regards to rehabilitation of cleared areas, recording the areas cleared and rehabilitated and reporting the areas so cleared and rehabilitated.</p>

#### 5. References

- Australian Museum Online (2007a). Bats in Australia, Orange Leaf-nosed Bat. <http://www.amonline.net.au/bats/records/bat22.htm> Accessed 8/6/07.
- Australian Museum Online (2007b). Night Parrot. [http://www.austmus.gov.au/birds/research/night\\_parrot.htm](http://www.austmus.gov.au/birds/research/night_parrot.htm) Accessed 9/8/07.
- BOM (2007). Climate Averages - Paraburdoo. [http://www.bom.gov.au/climate/averages/tables/cw\\_007185.shtml](http://www.bom.gov.au/climate/averages/tables/cw_007185.shtml) Accessed 7/11/07. Bureau of Meteorology.
- Braithwaite R.W. and Griffiths A.D. 1994. Demographic variation and range contraction in the Northern Quoll, *Dasyurus hallucatus* (Marsupialia: Dasyuridae). *Wildlife Research* 21, 203-217.
- DEC (2006). Lakeland Downs Short-tailed Mouse, *Leggadina lakedownensis* (Watts, 1976). [http://www.naturebase.net/component/option,com\\_docman/task,doc\\_download/gid,145/Itemid,1288/mode,view/](http://www.naturebase.net/component/option,com_docman/task,doc_download/gid,145/Itemid,1288/mode,view/) Accessed 9/8/07. Department of Environment and Conservation, Perth, Western Australia.
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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.
- DoW (2007). Advice to assessing officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received 21/12/07. Department of Water, Western Australia.
- Firestone KB (1999). The Application of Molecular Genetics to the Conservation Management of Quolls, *Dasyurus* Species (Dasyuridae: Marsupialia), December 1999. <http://www.library.unsw.edu.au/~thesis/adt-NUN/public/adt-NUN20010105.095232> Accessed 8/1/08.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Luke GJ, Burke KL and O'Brien TM (1987). Evaporation Data for Western Australia. Resource Management Technical Report No. 65. Department of Agriculture, Western Australia
- Robe (2007). Supporting documentation supplied within clearing permit application for Mesa J evaluation drilling program. Robe River Pty Ltd.
- 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.
- Start AN, Anstee SD & Endersby M, (2000). A review of the biology and conservation status of the Ngadji, *Pseudomys chapmani* Kitchener 1980 (Rodentia: Muridae). CALMScience, Vol 2, No 2, P 125-147.
- Van Vreeswyk AME, Payne AL, Leighton KA & Hennig P, (2004). Technical Bulletin No. 92: An inventory and condition survey of the Pilbara region, Western Australia. Department of Agriculture, Western Australia.
- WAM (2008). Faunabase - Western Australian Museum, Queensland Museum and Museum & Art Gallery of NT Collections Databases. <http://www.museum.wa.gov.au/faunabase/prod/index.htm> Accessed 7/1/08. Western Australian Museum.

#### 6. Glossary

##### Acronyms:

**BoM** Bureau of Meteorology, Australian Government.  
**CALM** Department of Conservation and Land Management, Western Australia.

<b>DAFWA</b>	Department of Agriculture and Food, Western Australia.
<b>DA</b>	Department of Agriculture, Western Australia.
<b>DEC</b>	Department of Environment and Conservation
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DoE), Western Australia.
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia.
<b>DoE</b>	Department of Environment, Western Australia.
<b>DoIR</b>	Department of Industry and Resources, Western Australia.
<b>DOLA</b>	Department of Land Administration, Western Australia.
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environment Protection Act 1986, Western Australia.
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System.
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia.
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI</b>	Rights in Water and Irrigation Act 1914, Western Australia.
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia.
<b>TECs</b>	Threatened Ecological Communities.

### 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.