



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4547/1
Permit Holder:	Robe River Mining Co Pty Ltd
Duration of Permit:	14 November 2011 – 14 November 2021

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of geotechnical investigations and construction of a powerline from Pannawonica to the Bungaroo borefield.

2. Land on which clearing is to be done

Lot 54 on Plan 241547, PANNAWONICA 6716

Lot 313 on Plan 63520, PANNAWONICA 6716

Ashburton Location 113, FORTEESCUE 6716

Ashburton Location 114, FORTEESCUE 6716

Lot 106 on Plan 56277, FORTEESCUE 6716

3. Area of Clearing

The Permit Holder must not clear more than 120 hectares of native vegetation within the area shaded yellow on attached Plan 4547/1.

4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 14 November 2016

5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

6. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Land Administration Act 1997* or any other written law.

7. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

8. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

9. Weed control

(a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

10. Retain and spread vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) within 6 months following clearing authorised under this permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit by laying the vegetative material and topsoil retained under condition 10(a) on the cleared area(s).
- (c) within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 10(b) of this Permit:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 10(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) where *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 10(c)(ii) of this permit, the Permit Holder shall repeat condition 10(c)(i) and 10(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
- (e) where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 10(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 10(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 10(c)(ii).

PART III - RECORD KEEPING AND REPORTING

11. Records to be kept

- (a) The Permit Holder must maintain the following records for activities done pursuant to this Permit in relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;

- (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 10 of this Permit:
- (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

12. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 11 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 14 August 2016, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fill means material used to increase the ground level, or fill a hollow;

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres of the area cleared.

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means *revegetation* that can be established from in situ seed banks contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

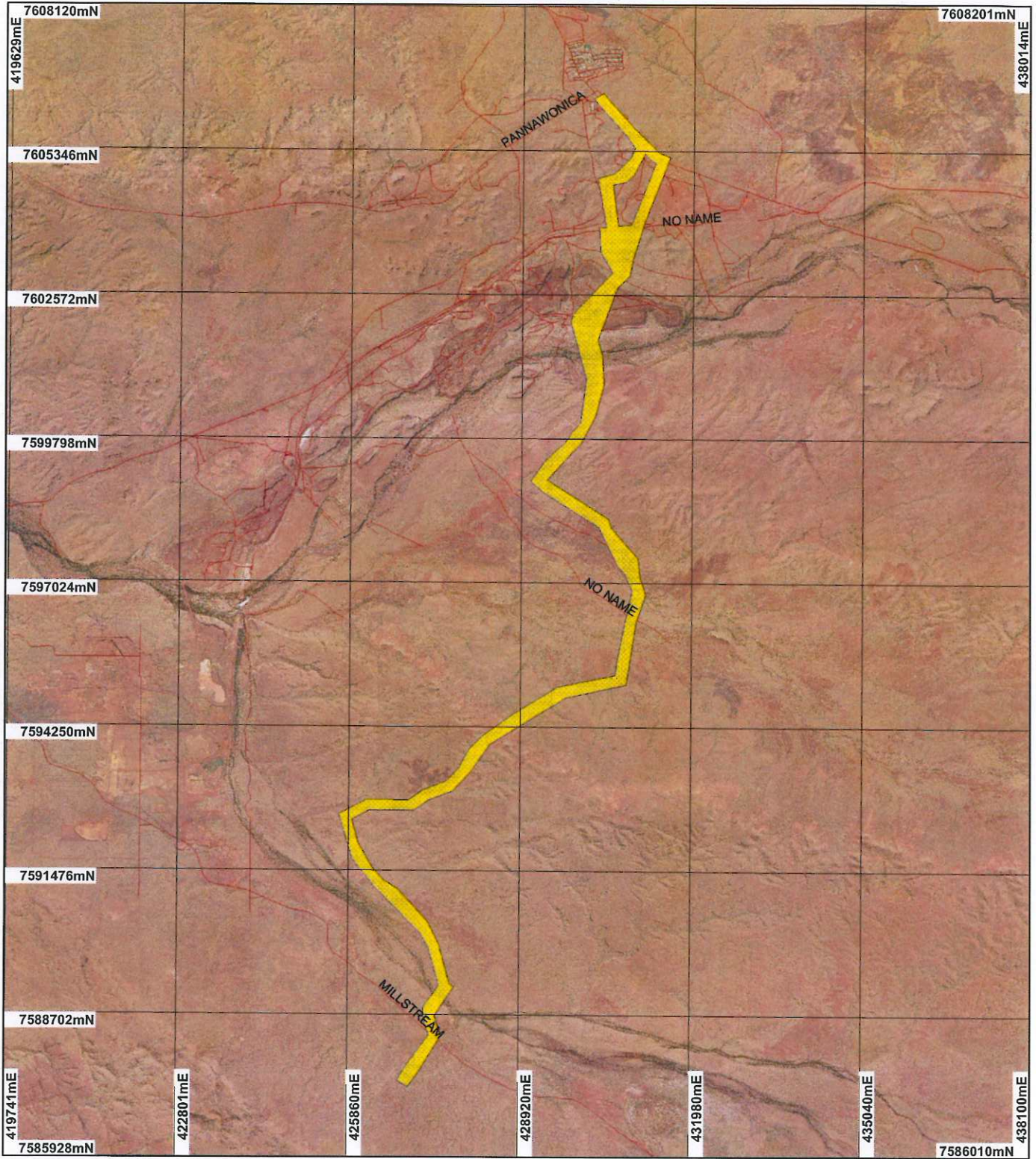


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

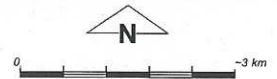
20 October 2011

Plan 4547/1



LEGEND

- | | | |
|--------------------------------------|--|-------------------------------|
| Road Centrelines | Marine Park | Water |
| Cadastre for labelling | Crown Lease | Clearing Instruments |
| Freehold | Lease / Reserve | Areas Approved to Clear |
| Crown Reserve | Lease on State Forest / Timber Reserve | Pannawonica 1.4m |
| State Forest / Timber Reserve (cont) | Public Roads | Orthomosaic - Landgate |
| | Unallocated Crown Land (cont) | 2000 |



Scale 1:101717
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Date 20/10/11

K. Faulkner
Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 4547/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Robe River Mining Co Pty Ltd

1.3. Property details

Property:
 LOT 54 ON PLAN 241547 (Lot No. 54 PANNAWONICA PANNAWONICA 6716)
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 LOT 54 ON PLAN 241547 (Lot No. 54 PANNAWONICA PANNAWONICA 6716)
 LOT 313 ON PLAN 63520 (FORTESCUE 6716)
 ASHBURTON LOCATION 113 (FORTESCUE 6716)
 ASHBURTON LOCATION 114 (FORTESCUE 6716)
 LOT 106 ON PLAN 56277 (FORTESCUE 6716)
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 Local Government Area: Shire of Ashburton
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
120		Mechanical Removal	Geotechnical investigations
		Mechanical Removal	Water/gas/cable/pipeline/power installation

1.5. Decision on application

Decision on Permit Application: Grant
 Decision Date: 20 October 2011

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 Hammersley 82 - Hummock grasslands, open low tree steppe; snappy gum over Triodia wiseana on a lateritic crust.	This application proposes to clear 120 hectares (685 ha footprint) of native vegetation in the Shire of Ashburton for the purpose of geotechnical investigation and construction of a powerline from Pannawonica to the Bungaroo borefield and associated infrastructure. Permanent disturbance associated with the powerline will be 35ha.	Pristine: No obvious signs of disturbance (Keighery 1994)	The description and condition of the vegetation under application was determined from the consultant's report (ENV 2011) and was based on Trudgen condition scale (1991) and converted to Keighery condition scale 1994
Beard vegetation association 609 - Hamersley - Mosaic: Hummock grasslands, open low tree steppe; bloodwood with sparse kanji shrubs over soft spinifex / Hummock grasslands, open low tree steppe; snappy gum over Triodia wiseana on a lateritic crust.	A vegetation and flora survey was undertaken for this proposal (ENV 2011). The flora study comprises 45 defined as (ENV 2011): - Vegetation of Alluvial Plains -Vegetation of Low Hills -Vegetation of Sandy Plains -Vegetation of Major Drainage lines/rivers	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994) Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	
Beard Vegetation	-Vegetation of Minor Drainage Lines;	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) Degraded: Structure severely disturbed; regeneration to good condition requires intensive	

Association 603 - and
 Chichester Plateau - -Vegetation of disturbed areas.
 Hummock grasslands, sparse shrub steppe; Acacia bivenosa over hard spinifex
 Beard vegetation association Hamersley 173 - Hummock grasslands, shrub steppe: Kanji over soft spinifex & Triodia wiseana on basalt.

management (Keighery 1994)

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)

These 45 vegetation units ranged in vegetation condition (Keighery scale, 1994) from completely degraded to pristine. The vegetation being predominantly in excellent to pristine condition.

(Shepherd 2009)

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 at variance to this Principle**

This application is for the clearing of 120 ha of native vegetation within a total project footprint of 685 ha for the geotechnical investigations and construction of a 33kV powerlines from Pannawonica town site to the Bungaroo borefield (Robe River Mining 2011).

A vegetation and flora survey was undertaken for this proposal in May 2011 (ENV 2011) and identified 45 vegetation associations within the application area with the most commonly occurring associations being AiTw - Scattered tall shrubs of Acacia bivenosa over hummock grassland of Triodia wiseana, AiTwe - High open shrubland of Acacia inaequilatera over hummock grassland of Triodia wiseana and Triodia epactia and AaTw - Scattered shrubs of Acacia ancistrocarpa over open hummock grassland of Triodia wiseana.

In addition, 222 flora species were identified including 16 weed species, 10 of which are classed as environmental weeds (ENV 2011). The 45 vegetation units ranged in vegetation condition (Keighery 1994) from completely degraded to pristine, with the vegetation being predominantly in excellent to pristine condition (ENV 2011). Degraded areas are associated with clearing for an unsealed road and associated land use.

The flora survey identified two vegetation communities and one flora species with high conservation values (ENV 2011) within the application area. The Priority 3 taxon, Triodia sp. Robe River was recorded within seven locations within the central portion of the application area and ranges from densities of 1% to 20% cover (ENV 2011). This species also occurred in vegetation associations which may be considered a Priority Ecological Community (PEC). The PEC is 'Triodia sp. Robe River assemblages of mesas of the Robe Valley'. This PEC may be considered to occur in five vegetation associations identified in the flora survey including, ApTErTw, AaTw, AiHiAsTe*CEc, Tw and EIAbTw (ENV 2011). The PEC is restricted to rocky hills and breakaway edges at the summit of hills and mesae and is restricted to the extreme south western end of the Hamersley ranges with the majority of occurrences been recorded from Robe River valley south of Duck Creek (ENV 2011). It has been previously recorded from 24 known locations in the Pannawonica area (ENV 2011).

Eucalyptus victrix and Eucalyptus camaldulensis sbsp. refulgens are considered phreatophytic species and the vegetation associations contain these species within minor and major drainage lines in the project area may represent Groundwater Dependent Ecosystems (ENV 2011).

Given the linear area of the application, the scattered occurrences of Triodia sp. Robe River and possible associated PEC and that these species/community types are considered to be widespread and abundant within the extensively vegetated Pilbara bioregion, it is considered unlikely that the proposed clearing will cause significant impact. In addition, it is not considered for the proposed clearing to significant impact on Groundwater Dependent Ecosystems within minor and major watercourse within the application area.

However, given that the application area contains priority flora, and vegetation communities of high conservation value including Groundwater Dependent Ecosystems and a possible PEC, it is considered for vegetation under application comprises high biodiversity values. Therefore, the proposed clearing is at variance to this Principle. Weed management and revegetation would reduce the impact of the proposed clearing.

Methodology

References

- Robe River Mining (2011)
- ENV (2011)
- Keighery (1994)
- GIS Databases
- SAC Bio Datasets (6 September 2011)

(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

The 45 vegetation units identified in the flora and vegetation survey of the application area were considered to represent five broad terrestrial fauna habitat types including major drainage lines, minor drainage lines, alluvial plain habitat, low hill habitat and stony plain habitat (ENV 2011). A level 1 fauna survey considered that 2 amphibian species, 5 reptile species, 33 bird species and 4 mammal species are likely to occur within the application area (ENV 2011). Of these species, five are of conservation significance; Lined Soil-crevice Skink (*Notoscincus butleri* -P4), Australian Bustard (*Ardeotis australis* -P4), Star Finch (*Neochmia ruficauda subclarescens* -P4), Northern Quoll (*Dasyurus hallucatus* -Endangered) and the Western Pebble-mound Mouse (*Pseudomys chapmanii* - P4).

The Rainbow Bee-eater (*Merops ornatus* - Migratory) has been recorded within the application area in the minor and major drainage line habitats. The drainage line habitats are considered to contain moderate habitat value (ENV 2011).

The main habitat types within the study area are considered to be widespread and abundant within the extensively vegetated Pilbara bioregion. Given this and the linear shape of the application area, it is not likely that the proposed clearing will impact on significant habitat for native fauna. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology References

-ENV (2011)
GIS Databases
-SAC Bio Datasets (6 September 2011)

(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

A vegetation and flora survey was undertaken for this proposal in May 2011 (ENV 2011) which is considered the optimal time for a flora survey in that region (Pilbara). The flora survey identified 222 flora species including 16 weed species, 10 of which are classed as environmental weeds (ENV 2011).

No rare flora species were identified within the application area (ENV 2011). In addition, no rare flora has been recorded within the local area (30km radius).

Therefore the proposed clearing is not likely to be at variance to this Principle.

Methodology References

-ENV (2011)
GIS Databases
-SAC Bio Datasets (6 September 2011)

(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 vegetation and flora survey was undertaken for this proposal in May 2011 (ENV 2011) which is considered the optimal time for a flora survey in that region (Pilbara). The flora survey identified 222 flora species including 16 weed species, 10 of which are classed as environmental weeds (ENV 2011).

No Threaten Ecological Communities (TEC) were identified within the area under application (ENV 2011). In addition, no TECs have been recorded within the local area (30km radius).

Therefore the proposed clearing is not likely to be at variance to this Principle

Methodology References

-ENV (2011)
GIS Databases
-SAC Bio Datasets (6 September 2011)

(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 likely to be at variance to this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The Beard

vegetation types mapped within the proposal area retain well above this 30 per cent threshold.

In addition, within the Shire of Ashburton and the Pilbara bioregion 99.6 per cent and 99.9 per cent (Shepherd 2009) of pre-1750 extent of native vegetation remains, respectively.

Given that the vegetation is well represented locally and regionally, the vegetation under application is not considered to be a significant remnant in an area which has been extensively cleared.

Therefore, the clearing as proposed is not likely to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Pre-European % in reserves/DEC managed lands
BIOREGION*				
Pilbara (P)	17,804,193	17,785,000	99.9	N/A
LOCAL GOVERNMENT AUTHORITY*				
Shire of Ashburton	10,086,658	10,050,099	99.6	15.5
BEARD VEGETATION ASSOCIATIONS IN BIOREGION*				
- 82	2,563,583	2,563,583	100	10.5
- 609	74,186	74,186	100	0.0
- 603				
- 173				

*(Shepherd 2009)

Methodology References:
 - Commonwealth of Australia (2001)
 - Shepherd (2009)
 GIS Databases:
 - Interim Biogeographic Regionalisation of Australia
 - 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 at variance to this Principle**
 The proposed clearing crosses Robe River, Bungaroo Creek and numerous non perennial watercourses.

A vegetation and flora survey undertaken identified eleven vegetation communities in association with major and minor watercourses within the application area (ENV 2011). These communities are considered Groundwater Dependant Ecosystems and range from good to pristine (Keighery 1994) condition (ENV 2011).

Given the presence of numerous watercourses and vegetation associated with watercourses within the application area, the proposed clearing is at variance to this Principle.

Methodology Reference:
 - ENV (2011)
 GIS Databases:
 - Hydrography, linear
 - Hydrography, linear (hierarchy)

(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**
 This proposal is for the clearing of 120 ha of native vegetation within a total project footprint of 685 ha for the construction of a powerline to the Bungaroo borefield and associated infrastructure (Robe River Mining 2011).

The proposed clearing for the powerline is likely to cause short term impacts. It is considered that the proposed clearing, in particular within and in close proximity to watercourses, may lead to appreciable land degradation through soil erosion. However, given the long, linear nature of the clearing, appreciable land degradation is unlikely to occur.

It is noted that approximately 85 ha of the cleared areas no longer required for operations will be rehabilitated following completion of the project (ENV 2011).

The proposed clearing is not likely to be at variance to this Principle.

Methodology References
-ENV (2011)
-Robe River Mining (2011)

(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 closest conservation area to the application area is Millstream Chichester National park and Karijini National Park occurring 100km and 175km away, respectively.

Given the distance to the nearest conservation area, it is not considered likely for the proposed clearing 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 proposed clearing crosses Robe River, Bungaroo Creek and numerous non perennial watercourses.

A vegetation and flora survey undertaken identified eleven vegetation communities in association with major and minor watercourses within the application area (ENV 2011). These communities are considered Groundwater Dependant Ecosystems and range from good to pristine (Keighery 1994) condition (ENV 2011).

The proposed clearing in low-lying areas and of vegetation associated with watercourses, is likely to cause sedimentation and result in the deterioration in surface water.

However, it is noted that the proposed clearing for the powerline is only likely to cause short term impacts.

The proposed clearing is not likely to be at variance to this Principle

Methodology Reference:
- ENV (2011)
GIS Databases:
- Hydrography, linear
- Hydrography, linear (hierarchy)

(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 proposed clearing crosses Robe River, Bungaroo Creek and numerous non perennial watercourses.

Given the long and linear nature of the clearing for the pipeline and the occurrence of the watercourses to maintain natural water flows, the proposal is not likely to cause or increase the incidence or intensity of flooding.

Methodology GIS Databases:
- Hydrography, linear
- Hydrography, linear (hierarchy)

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

Comments
This application is to clear 120 hectares (685 ha footprint) of native vegetation in the Shire of Ashburton for the purpose of geotechnical investigation and construction of a powerline from Pannawonica to the Bungaroo borefield and associated infrastructure. The powerline is to provide power to the Bungaroo borefield (Robe River Mining, 2011).

Permanent disturbance associated with the powerline will be 35ha with the remaining to be revegetated (Robe River Mining Co, 2011).

Robe River Mining Co Pty Ltd submitted a clearing application on 8 February 2011 for the Bungaroo to Millstream water pipeline (CPS 4220/1). This application is currently under assessment.

The Pilbara Coastal Water Supply Project which includes the Bungaroo borefield was referred to the Environmental Protection Authority (EPA) in February 2010 (Robe River Mining 2011). The EPA's decision of May 2010 was Not Assessed - Managed under Part V of the EP Act (Clearing). EPA advised that the proposal raises a number of environmental issues; however, the overall environmental impact of the proposal is not so

severe as to require assessment by the EPA.

Rio Tinto on behalf of Robe River Mining Co Pty Ltd has applied for a section 91 licence under the Land Administrative Act 1997 for the purpose of geotechnical investigation and construction of the powerline from the Department of Regional Development and Lands. The s91 licence has not been received.

The application area occurs within the proclaimed Pilbara groundwater area and the Pilbara surface water area under the Rights in Water and Irrigation Act 1914. Department of Water advised that a bed and banks permit will be required if any interference with the bed or banks of a watercourse is to occur (DoW 2011). DoW also advised that the clearing of 120ha of native vegetation for the purpose of construction of a powerline is unlikely to have an impact on the quality or quantity of groundwater, provided that the clearing activities are conducted in accordance with DoW guidelines and advice (DoW 2011).

The proposed clearing falls within the Kuruma Marthudunera, native title claimants' area. The native title claimants and the representatives were notified and comments were sought regarding the proposed clearing but no response has been received by DEC to date.

The proposed clearing crosses numerous Aboriginal Sites of Significance. The proponent will be advised to contact the Department of Indigenous Affairs to ensure compliance with the Aboriginal Heritage Act 1972.

Methodology References
-DoW (2011)
-Robe River Mining (2011)

4. References

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

DoW (2011) Rights in Water and Irrigation Act 1914 Advice for CPS 4547/1 - Robe River Mining Co Pty. Department of Water, Perth, Western Australia. DEC ref A431689

ENV (2011) Bungaroo Alternate Powerline Routes Flora, Vegetation and Fauna Assessment. Prepared for Rio Tinto Iron Ore. ENV Australia Pty Ltd. Perth, Western Australia. DEC ref A434159

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

Robe River Mining (2011) Application for a purpose clearing permit for Pannawonica to Bungaroo Borefield powerline - Shire of Ashburton and supporting information. DEC ref A421008

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.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)