



1. Application details

1.1. Permit application details

Permit application No.: 722/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Straits (Whim Creek) Pty Ltd

1.3. Property details

Property: M47/236
M47/443
E47/976
L47/36
Local Government Area: Shire Of Roebourne
Colloquial name:

1.4. Application

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

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's Vegetation association 649 - Various sedges with very sparse snakewood (Acacia eremaea).	Flat or slightly undulating plains: Low shrubland of Acacia bivenosa over hummock grassland of mixed Triodia angusta and Triodia epactia on flat red silty loam plain, sometimes with a stony mantle. Tall open shrubland of Acacia synchronicia over open regenerating hummock grassland of Triodia epactia on flat silty plain between drainage zones. The condition of the vegetation types varied from good to very degraded in some of the northern parts of the site.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Flora assessment conducted by Astron Environmental and Bennett Environmental Consulting (DoE Ref: TRIM KNI920).
Beard's Vegetation association 649 - Various sedges with very sparse snakewood (Acacia eremaea).	Drainage Zones: Open heath of Acacia orthocarpa and Acacia ancistrocarpa or Acacia pyrifolia over regenerating open hummock grassland of Triodia epactia and Chrysopogon fallax along creek bed. Tall open shrubland of Acacia inaequilatera over low shrubland of Acacia stellaticeps over open hummock grassland of Triodia epactia and Triodia angusta.	Pristine: No obvious signs of disturbance (Keighery 1994)	Flora assessment conducted by Astron Environmental and Bennett Environmental Consulting (DoE Ref: TRIM KNI920).
Beard's Vegetation association 649 - Various sedges with very sparse snakewood (Acacia eremaea).	Drainage Lines: Low woodland of Corymbia hamersleyana over shrubland of Acacia orthocarpa over mixed hummock and tussock grassland of Triodia epactia and Chrysopogon fallax along a creek bed. Low woodland of Corymbia hamersleyana over mixed open shrubland of Acacia elacantha, Carissa lanceolata over tussock grassland of *Cenchrus ciliaris and occasional Triodia epactia. Low woodland of Corymbia candida subsp. candida and Corymbia hamersleyana over heath of Acacia ancistrocarpa, Acacia elacantha with Carissa lanceolata over very open tussock grassland of Chrysopogon fallax with some hummock grass Triodia epactia. The condition of this vegetation type varies from	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Flora assessment conducted by Astron Environmental and Bennett Environmental Consulting (DoE Ref: TRIM KNI920).

Beard's Vegetation association 649 - Various sedges with very sparse snakewood (*Acacia eremaea*).

very good to degraded by weed invasion.

Low Rises:

Low open shrubland of *Acacia ancistrocarpa*, *Acacia bivenosa* over open or hummock grassland of *Triodia epactia*.

Regenerating open shrubland of *Acacia inaequilatera* and *Acacia pyrifolia* with occasional *Grevillea wickhamii* over open low shrubland of *Acacia stellaticeps* over hummock grassland of *Triodia wiseana* with some *Triodia epactia*.

There was some evidence of burning in this area but the condition was reasonable.

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

Flora assessment conducted by Astron Environmental and Bennett Environmental Consulting (DoE Ref: TRIM KNI920).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

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

A total of 21 vascular plant families, 27 genera and 64 species were identified within the survey area (Bennett, 2005). Of these 1 exotic species was identified. Some of the area had been burnt within the past 2-4 years and some of the northern extent of the site had been highly degraded by grazing and scalding (Bennett, 2005). There are seven priority species (1,2 and 3) located within the vicinity of the project area, but were not found during the survey within the pipeline route (CALM, 2004).

The vegetation units within the site (long, elongate pipeline easement) are not restricted and occur throughout the region (Bennett Consulting, 2005). The area of proposed disturbance is small and narrow and will be rehabilitated (Straits Resources, 2005) and therefore the impact on biodiversity is expected to be minimal.

Methodology Bennett Consulting, 2005
CALM, 2005
Straits Resources, 2005

(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 vegetation units identified are widely distributed in the region (Bennett Consulting, 2005) and the area of proposed disturbance is small (and very narrow) and thus the site does not represent significant habitat for fauna. The pipeline will be buried and the vegetation rehabilitated thus re-establishing habitat continuity for fauna (pers. comm. Straits, 2005). Vegetation rehabilitation and fauna will be managed in accordance with commitments managed under the Notice of Intent process (NOI Straits, 2005). While some Nationally listed endangered and vulnerable species are known to occur in the area (DEH Environmental Reporting tool) the habitats are well represented in the area and the disturbance footprint is small. The area is also quite disturbed by grazing, fire and some construction of adjacent roads.

Methodology Straits Resources, 2005
Department of Environment and Heritage Environmental Reporting Tool
Aerial photograph
Permit application

(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**

There were no species listed as rare or priority found in the project area (Astron, 2005; Bennett, 2005). However there are seven listed Priority species known to occur in the area, as indicated by a search of CALM data (CALM, 2004). The species were as follows:

Ptilotus appendicularis var *minor* (P1)

Tephrosia andrewsii ms (P1)

Euphorbia clementii (P2)

Abutilon trudgenii (P3)

Goodenia pascua (P3)

Hibiscus brachysiphonius (P3)

Themeda sp. Hamersley Station (ME Trudgen 11431)

The site for disturbance is small if rehabilitated adequately this project should not pose a threat to the existence of these species. CALM has reviewed the NOI and did not deem any of these priority species to be at risk of impact (CALM response to Straits Resources KNI1006).

Methodology Astron Environmental, 2005
Bennett Consulting, 2005
CALM Threatened Flora Database search, 2004

(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 recorded within, or in the vicinity of, the proposed area for clearing.

Methodology GIS Database
Threatened Ecological Communities - CALM 15/7/03

(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 State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002).

Vegetation complexes within this application are above 30% representation. The vegetation proposed for clearing is Beard Vegetation Association 649 - various sedges with very sparse snakewood (*Acacia eremaea*) (Hopkins et al., 2001), of which there is ~100% of the pre-European extent remaining (Shepherd et al., 2001). Vegetation mapping and survey work shows that the vegetation units are regionally common (Bennett, 2005). The vegetation type is therefore of 'least concern' for biodiversity conservation (Department of Natural Resources and Environment, 2002).

Methodology Hopkins et al., 2001
Shepherd et al., 2001
Bennett, 2005
Hopkins et al (2001)
Shepherd et al (2001)
Department of Natural Resources and Environment (2002)
GIS Database: 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 not likely to be at variance to this Principle

The proposed pipeline intersects some minor drainage lines at several places. These drainage lines are not considered significant watercourses (O. Bennett, DoE, pers. comm, 2005). Straits have made commitments under their NOI to minimise the removal of larger tree species (*Corymbia hamersleyana* and *Corymbia candida*) and intercept drainage lines where vegetation is least dense (NOI, 2005).

Methodology Straits Resources, 2005
GID Database: Hydrology, linear (hieracrchy) - DoE 13/4/05

(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 area proposed for clearing is small and very narrow and will be managed to avoid heavy rains during construction. There is unlikely to be land degradation issues associated with this activity due to the scale and ongoing management commitments. Drainage controls will be implemented to allow for appropriate shedding of water and to prevent changes to surface drainage (Straits Resources, 2005).

Methodology Straits Resources, 2005

(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

There are no conservation reserves within, or in the vicinity of, the area proposed for clearing.

Methodology GIS Database
CALM Managed Land and Waters - 1/06/04

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

Groundwater monitoring has suggested that the salinity is low in the area, so clearing vegetation is not expected to lead to any salinity issues (Straits Resources, 2005). Operations will be designed to reduce run-off and erosion and so increased sedimentation or turbidity of surface water is unlikely. The area proposed for clearing is small and will be progressively rehabilitated (Straits Resources, 2005).

Methodology Straits Resources, 2005

(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 average rainfall of the area is ~400mm that naturally falls in large sporadic flood events. It is unlikely that the removal of 7.1ha of vegetation will have a significant influence on the run-off and flood regimes in the local area.

Methodology GIS Database:
Rainfall, Mean Annual - BOM 30/09/01

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

Comments

No objections have been raised for this proposed clearing activity. The proposed area is covered by a Native Title Claim by the Ngaluma/Injibandi peoples (WC99_014) and all leases and licence are current. The proposed area is in the Mons Cupri Hills on the Permanent register of the Aboriginal Sites of Significance. Straits Resources have had a Heritage survey completed and have committed to protecting all sites within the project area (Straits Resources, 2005). Straits have also committed to manage the discovery of any new sites during the project by halting work until advice is sought from the Ngaluma People (Straits Resources, 2005). The proponent sought advice from the DoE (Karratha) for the need for a Bed and Banks permit. The drainage lines intersected by the pipeline were considered too minor to warrant a permit for disturbance of Bed and Banks (DoE Ref TRIM: KNI954).

Methodology Straits Resources, 2005
GIS Database: Native Title Claims - DLI - 19/12/04
DoE Ref: TRIM KNI954

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	7.1	Grant	All Principles have been assessed and the assessing officer recommends the grant of 7.1ha for the installation of gas pipeline to supply gas to Whim Creek Copper Project. Straits Resources have committed to a number of management conditions through their Notice of Intent, which will mitigate impacts associated with clearing. In particular DoE recommends that the following commitments should be adhered to: Rehabilitation of the disturbed area; Avoidance of larger trees (<i>Corymbia hamersleyana</i> and <i>C. candida</i>) when clearing through minor drainage lines; and drainage controls being implemented.

5. References

Advice from O. Bennett Department of Environment (2005) DoE Ref: TRIM KNI954
Astron Environmental Pty Ltd (2005) Flora and Vegetation Survey Gas Pipeline Easement, Unpublished document. DoE Reference: TRIM KNI672
Bennett Environmental Consulting Pty Ltd (2005) Vegetation Overview of Gas Pipeline Easement: Whim Creek Western Australia. Prepared for Astron Environmental. Unpublished Document. DoE Reference: TRIM KNI920
CALM response to Straits Resources NOI, 2005 (KNI1006)
Department of Conservation and Land Management (2004) Request for Rare Flora Information. Unpublished Document. DoE Reference: TRIM KNI921
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.
Ecologia Environmental Consultants (1991) Dominion Mining Limited: Whim Creek - Mons Cupri Copper Mine Project. Notice of Intent: Biological Assessment Survey. Unpublished Document. DoE Reference: TRIM KNI922
Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)