



1. Application details

1.1. Permit application details

Permit application No.: 1480/3
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Ove Arup Pty Ltd

1.3. Property details

Property: LOT 9 ON PLAN 91722
 Local Government Area: Shire Of Ngaanyatjaraku
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.4		Mechanical Removal	Infrastructure Maintenance

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 18: Low woodland; mulga (Acacia aneura).	The area under application is for the purpose of installing an underground water pipeline to provide water to facilities at Warakurna Community including a new Multi-Function Police Facility, new staff housing, existing roadhouse and new education facility.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation under application is considered to be in good condition as reported in information provided by the proponent (2006; TRIM Ref ED1340). The report states that the vegetation is predominantly Mulga with some non-native grasses and that the area has been previously disturbed with the construction of roads and powerlines.
Beard vegetation association 39: Shrublands; mulga scrub. (Hopkins et al. 2001; Shepherd et al. 2001).	The proposed work comprises of a corridor of up to 8m width over approximately 5km (3.4ha), located parallel to an existing local road and powerlines (Information provided by the proponent 2006; TRIM Ref DOC9534 and DOC9539). The area under application is located within Lot 9 or Reserve 17614. Warakurna Community is approximately 14.6km north-east of the intersection of Great Central Road and Gunbarrel Highway.		
	The vegetation proposed to be cleared is described as predominantly Mulga (Acacia aneura) and non-native grasses (Information provided by the proponent 2006; TRIM Ref ED1340).		

3. Assessment of application against clearing principles

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

Comments **Proposal is not likely to be at variance to this Principle**
 The area under application is located within the Ranges of the Western Desert (Aboriginal Reserve 17614), an area listed on the Register of the National Estate. The Ranges, which extend over 8,000,000ha, are registered for natural values and are recognised as having 'Indigenous values of National Estate significance'. Given the linearity and size of the areas under application (up to 8m width over approximately 5km, 3.4ha) relative to the area on the Register, it is unlikely that the clearing as proposed would have a significant impact on the natural values of the wider area.

Given the linearity of the area under application and the proximity to an existing road corridor and powerlines, it is considered unlikely the area under application comprises a high level of biological diversity.

Methodology GIS databases:

(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 area under application is located within Aboriginal Reserve 17614, an area covering approximately 8,000,000ha, with extensive, well-represented habitat that will offset habitat loss arising from the proposed clearing. The vegetation to be cleared for the proposed pipeline is parallel to an existing road corridor and powerlines. It is therefore likely this vegetation is within areas previously disturbed.

It is therefore considered that the vegetation in this area is not likely to be necessary for the maintenance of significant habitat for fauna indigenous to Western Australia and furthermore, comparable habitat is likely to be found in the surrounding areas. Therefore the clearing is not likely to be at variance to this principle.

Methodology GIS databases:
- Cadastre - DLI 1/12/05

(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 are no known records of Declared Rare Flora (DRF) in the local area (100km radius). The nearest recorded DRF (*Acacia denticulosa*) is located over 400km, south-west from the proposed area. Therefore the clearing is unlikely to be at variance to this principle.

The following Priority species is known to occur in the local area (50km radius), :
- *Isotropis winneckeii* (Priority 1).

The above flora occurs within one of the same vegetation complexes and on one of the same soils as that of the area under application.

Methodology GIS databases:
- Declared Rare and Priority Flora List - CALM 01/07/05
- Pre-European Vegetation - DA 01/01
- Soils, Statewide - DA 11/99

(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 records of Threatened Ecological Communities (TECs) within close proximity of the area under application with the nearest recorded TEC located over 800km north-west from the proposed area. It is therefore unlikely that the vegetation proposed to be cleared comprises the whole or part of or is necessary for the maintenance of a TEC.

Methodology GIS Databases:
- Threatened Ecological Community Database - CALM 12/04/05

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

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

The Vegetation Complexes in the area under application are above the recommended minimum of 30% representation.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status***	In reserves/CALM managed land %
IBRA Bioregions					
- Central Ranges*	5 132 641	5 132 641	100.0	Least Concern	
Shire of Ngaanyatjarraku	No information available				
Vegetation type:					
Beard: Unit 18**	19 892 436	19 890 348	100.0	Least Concern	5.8
Beard: Unit 39**	6 613 602	6 613 496	100.0	Least Concern	11.8

* (Shepherd et al. 2001)

** (Adapted from: Shepherd et al. 2001)

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

Given the proposed clearing of 3.4ha is relatively small compared to the area of remnant vegetation remaining within the Region and there is 100% (Beard 18) and 100% (Beard 39) (Shepherd et al. 2001) of native vegetation remaining, the vegetation proposed to be cleared is not significant as a remnant of native vegetation in the surrounding area.

However, it is noted that the Beard Complexes (18 and 39) are not well represented in reserves.

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

(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

There are two minor non-perennial watercourses, which cross the northern section of the area under application.

The proposed disturbance associated with the construction of a water pipeline is expected to be minimal and temporary, whilst the works are being complete.

To mitigate any impacts on the vegetation associated with the watercourses a condition for revegetating the disturbed areas of the minor watercourse has been recommended for this permit.

Additionally the applicant has advised that remediation of the area to its original condition will be undertaken to ensure no effect to or alteration of natural flow paths.

Methodology GIS Databases:
- Hydrography, linear - DOE 01/02/04

(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 landscape of the area under application and surrounds can be described as steep hills, ranges, outwash plains and dissected fan and terrace formations flanking ranges of sedimentary and some metamorphic, volcanic, and granite rocks with bare rock outcrop common. The chief soils are shallow and often stony sandy loams, sandy clay loams, neutral red earths and red earthy sands (DAWA 2004).

Given, the linearity (up to 8m width) of the proposed clearing, and the occurrence of rock outcrops in the area, it is unlikely that the clearing of 3.4ha for the installation of an underground water pipeline would lead to appreciable land degradation.

Methodology DAWA (2004)
GIS databases:
- Soils, Statewide - DA 11/99

(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 area under application is located within Ranges of the Western Desert (Aboriginal Reserve 17614), an area listed on the Register of the National Estate. The Ranges, which extend over 8,000,000ha are registered for natural values and are recognised as having 'Indigenous values of National Estate significance'. Given the linearity and size of the areas under application (up to 8m width over approximately 4.2km, 3.4ha) relative to the area on the Register, it is unlikely that the clearing as proposed would have a significant impact on the natural values of the wider area.

The nearest DEC managed lands are located approximately 210km west (Gibson Desert Nature Reserve) and 390km south-west (Neale Junction Nature Reserve) of the proposed clearing. Given the distance between the

area under application and the DEC managed lands the proposed clearing is not likely to have an impact on the environmental values of the surrounding conservation areas.

Methodology GIS databases:
- System 1 to 5 and 7 to 12 Areas - DEP 06/95
- DEC Managed Lands and Water - CALM 01/07/05
- Register of National Estate - EA 28/01/03

(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 at variance to this Principle**
With an average annual rainfall of 250mm and an annual evaporation rate of 3,400mm there is likely to be little surface flow during normal seasonal rains. The area under application is mapped within the Mackay Basin of the Western Plateau Division.

With high annual evaporation rates and low annual rainfall there is little recharge into regional groundwater table, which at this site has a salinity level of between 1,000 mg/l and 3,000 mg/l, which is considered to be marginal to brackish. Considering the linearity and relatively small size of the proposed works and the magnitude of the Musgrave (3,240,400ha) Groundwater Province, the proposed clearing is unlikely to have an impact on regional groundwater.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Groundwater Salinity, Statewide - 22/02/00
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Groundwater Provinces - WRC 98

(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 at variance to this Principle**
With an average annual rainfall of 250mm and an annual evaporation rate of 3,400mm there is little surface flow during normal seasonal rains. Given the low annual rainfall and the linearity of the proposed clearing (up to 8m width over approximately 4.2km), clearing the vegetation under application is unlikely to cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98

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

Comments

The area under application is within the Proclaimed Groundwater Area of East Murchison. Therefore any abstraction of groundwater would require a licence. However, this application for a water pipeline is not associated with ground water extraction.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

No submission was received from the Shire of Ngaanyatjarraku.

There is one Aboriginal Site of Significance listed within the areas under application, the applicant will be advised of their obligations under the Aboriginal Heritage Act 1972.

Heritage clearance surveys were undertaken for the area of the proposed works within the Shire of Ngaanyatjarraku in 2006. As such, no heritage clearance requirements were listed for this proposal (Heritage Clearance Report 2006).

There is one Native Title Claim over the area under application. A Native Title Agreement is currently being negotiated between the Department of Housing and Works and the Native Title Party (Information provided by the proponent 2006; TRIM Ref ED1340).

Methodology Heritage Clearance Report (2006) (TRIM Ref EI6623)
GIS databases:
- Aboriginal Sites of Significance - DIA 28/02/03
- Cadastre - DLI 1/12/05
- Native Title Claims - DLI 7/11/05
- RIWI Act, Groundwater Areas - WRC 13/06/00

4. Assessor's comments

Purpose	Method Applied	area (ha)/ trees	Comment
Infrastructure Maintenance	Mechanical Removal	3.4	The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986. The clearing as proposed is at variance to Principle f) and not likely to be at variance to the remaining Principles. Therefore the assessing officer recommends that a permit should be granted.

5. References

- 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- DAWA (2004) Soil-landscape mapping, Department of Agriculture Western Australia, Date accessed 01/05/04.
- 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.
- Heritage Clearance Report (2006) Work programme clearance for the Department of Housing and Works for a water pipeline from Warrakurna Community to the Warrakurna Multi-Function Police Facility. Dianna Newham, Senior Anthropologist. Produced for Ngaanyatjarra Council. TRIM Ref EI6623
- 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.
- 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.

6. 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)

