



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1232/1

Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Alcoa of Australia Ltd

### 1.3. Property details

Property: LOT 203 ON PLAN 14252

Local Government Area: Shire Of Waroona

Colloquial name: This area is now known as Lot 700 (as of December 2008).

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.15		Mechanical Removal	Miscellaneous

## 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 3 - Medium forest; jarrah-marri. (SAC Bio Datasets accessed 16/12/2008; Shepherd, 2007)	The proposal includes the clearing of 0.15ha (4m x 260m strip) within 0.5 hectares of vegetation, which is located between a gravel road to the north, and a pipeline and access track to the south. The purpose of the clearing is to widen the pipeline easement to facilitate the ongoing maintenance and safety of the pipelines.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The description of the vegetation under application was obtained during a site visits on 26/4/2006 and 25/8/2008.
Hedde Vegetation Complex - Forrestfield complex - Vegetation ranges from open forest of E. calophylla - E. wandoo - E. marginata to open forest of E. marginata - E. calophylla - C. fraseriana - Banksia species. Fringing woodland of E. rudis in the gullies that dissect this landform. Hedde et al. (1980)	The vegetation under application is located within the northern side of the pipeline easement. This vegetation comprises woodland of E. marginata and Corymbia calophylla with the occasional M. raphiophylla. Understorey in this area comprises Acacia spp., Xanthorrhoea preissii, Banksia attenuata, B. grandis, B. illicifolia, Hakea spp., Dryandra spp., Hibbertia spp., and weed species. The vegetation under application also includes two C. calophylla and one M. raphiophylla to the south of the pipeline.		

## 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 applied area is an 4m x 260m strip within a 0.5 hectare area of vegetation located between a gravel road to the north, and a pipeline and access track to the south (DEC, 2006). The vegetation under application is within the buffer of a threatened ecological community; however, the proposed clearing will be limited to vegetation in degraded condition within the maintenance area of the pipeline. Therefore, the vegetation under application is not likely to comprise a high level of biological diversity.

**Methodology** Reference:  
- DEC (2006)  
GIS Database:  
- SAC Bio datasets accessed 16/12/08

**(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**

Three fauna species of conservation significance are located within the local area (5km radius).

The vegetation under application includes understorey that has the potential to provide some habitat for ground-dwelling fauna such as the Quenda (DEC, 2006). The applied vegetation also include mature Eucalyptus trees that have the potential to contain hollows that could be utilised as habitat by fauna such as the Brush-tailed Phascogale and Carnaby's Black Cockatoo (DEC, 2006).

Although the vegetation under application may provide some habitat for fauna, given that the applied area is limited to 0.15 hectares and is surrounded by a large remnant of vegetation, the vegetation under application is not considered likely to provide significant habitat for fauna in the local area.

**Methodology Reference:**

- DEC (2006)

GIS Database:

- SAC Bio datasets accessed 27/3/08

**(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 six known records of the following rare flora within the local area (5km radius):

- *Tetraria australiensis*,

- *Synaphea stenoloba*,

- *Drakaea elastica*, and

- *Drakaea micrantha*

The nearest record is *Synaphea stenoloba*, located approximately 700m east of the area under application.

A portion of the vegetation under application contains *Melaleuca raphiophylla*, which is indicative of wetland - the preferred habitat of *D. elastica*, *D. micrantha* and *S. stenoloba* (DEC, 2006a). However, a flora survey undertaken in November 2006 did not identify any rare flora (Woodman Environmental Consulting, 2008). Therefore, the vegetation under application is not considered likely to include rare flora.

**Methodology References:**

- DEC (2006a)

- Woodman Environmental Consulting (2008)

GIS Database:

- SAC Bio datasets accessed 16/12/08

**(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 may be at variance to this Principle**

There are nine known occurrences of the following Threatened Ecological Communities (TEC) within the local area (5km radius):

3b - *E. calophylla* - *E. marginata* woodlands on sandy clay soils,

3c - *E. calophylla* - *Xanthorrhoea preissii* woodlands and shrublands

9 - Dense shrublands on clay flats,

20b - *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain.

The vegetation under application is in degraded condition and comprises *Corymbia calophylla* and *Melaleuca raphiophylla* with limited understorey species (DEC, 2006).

A flora survey undertaken in November 2006 identified the plant community adjacent to the area under application as being consistent with the TEC, Floristic Community Type (FCT) 20b (Woodman Environmental Consulting, 2008). The vegetation under application is located within the 100 m buffer of this occurrence; which is an adequate buffer required to protect TEC from such impacts as edge effects of weed invasion, increased wind speed and increased drying of surface soils (DEC, 2008).

The vegetation under application is located immediately adjacent to the inferred TEC (FCT 20b), which is within the recommended TEC buffer; however given the proposed clearing is largely limited to vegetation that has been previously cleared within the pipeline maintenance area, which is in a degraded condition; the clearing of the vegetation within the area under application may impact this TEC.

**Methodology References:**

- DEC (2006)
- Woodman Environmental Consulting (2008)
- GIS Database:
- SAC Bio datasets accessed 16/12/08

**(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**

Heddle et al. (1980) defines the vegetation under application as Forrestfield Complex, which has 17.5% of pre-European extent remaining. The vegetation under application is also defined as Beard vegetation association 3, which has 70% of pre-European extent remaining.

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of vegetation pre-European settlement (Commonwealth of Australia 2001).

Given that, there is approximately 58% of pre-European vegetation remaining in the local area (10km radius) and there is 55.7% remaining in the Shire of Waroona; and that the applied area is limited to 0.15 hectares, it is not considered likely that the vegetation under application is significant as a remnant in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,208	583,140	38.8	
Shire of Waroona*	83,230	46,404	55.7	
Local Area (~10km radius)	31,400	~18,200	~58	
Beard vegetation type*				
3	2,661,405	1,863,719	70.0	79.9
Heddle vegetation complex**				
Forrestfield Complex	20,052	3,518	17.5	0.3

\* (Shepherd, 2007)

\*\* (EPA, 2006)

^ Area within Intensive Land Use Zone

**Methodology**

**References:**

- Commonwealth of Australia (2001)
  - EPA (2006)
  - Heddle et al. (1980)
  - Shepherd (2007)
- GIS Databases:**
- Heddle Vegetation Complexes
  - NLWRA, Current Extent of Native Vegetation
  - SAC Bio datasets accessed 16/12/08

**(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 may be at variance to this Principle**

The area under application is located approximately 300m from a multiple use wetland and the nearest proclaimed watercourse is Yalup Brook Drain, which is located 1.1km to the west. A number of wetlands identified under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 are also located within the local area. During the site visit some wetland dependent vegetation was observed, including *Melaleuca raphiophylla* located within the area under application to the north of the pipeline, and the single *M. raphiophylla* under application to the south.

Although there are no proclaimed wetlands within the immediate vicinity of the area under application, some wetland dependent vegetation was observed to be growing within and adjacent to the applied area. It is therefore considered that the vegetation may be growing in, or in association with, an environment associated with a watercourse or wetland.

**Methodology**

**Reference:**

- DEC (2006)

GIS Databases:  
- EPP, Lakes  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain

**(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**

Soils within the area under application are of Forrestfield F2c phase, which is identified as low slopes and foot slopes with well-drained deep uniform yellowish brown sands that are generally free of laterite or gravel. These soils have a very low risk of land degradation (State of Western Australia, 2005).

Given the applied area is limited to 0.15 hectares and contains well-drained soils, the proposal is not considered likely to cause appreciable land degradation.

**Methodology** References:  
- DEC (2006)  
- State of Western Australia (2005)  
GIS Database:  
- Salinity Risk LM 25m - DOLA 00

**(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 only conservation reserve within the local area is located 4.2km to the south of the area under application. Given the distance to the nearest conservation area, the limited area that is proposed for clearing and the significant areas of vegetation adjacent to the applied area, the proposal is not considered likely to impact the environmental values of any nearby conservation areas.

**Methodology** Reference:  
- DEC (2006)  
GIS Database:  
- CALM Managed Lands and Waters

**(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 area under application is not located within a Public Drinking Water Source Area (PDWSA) and the nearest waterbody is Yalup Brook Drain, which is located 1.1km to the west. During the site visit wetland dependent vegetation was observed to the south of the area under application, suggesting the presence of a waterbody (DEC, 2006).

Soils within the applied area have a low risk of water erosion (State of Western Australia, 2005); therefore the proposed clearing is not considered likely to result in water erosion causing deterioration in surface water quality.

There is a low risk of salinity within the applied area and the identified soil association has a low risk of erosion (State of Western Australia, 2005). Therefore the proposed clearing is not considered likely to result in salinity causing deterioration in ground water quality.

**Methodology** References:  
- DEC (2006)  
- State of Western Australia (2005)  
GIS Databases:  
- Hydrography, linear (hierarchy)  
- Public Drinking Water Source Areas (PDWSAs)  
- Salinity Risk LM 25m - DOLA 00

**(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 area under application is located on a rise and there is a slight relief in topography toward the southwest. Given the limited area that is proposed for clearing and the well-drained nature of the soils (State of Western Australia, 2005), the proposal is not considered likely to cause or exacerbate the incidence of flooding.

**Methodology** Reference:

- State of Western Australia (2005)  
GIS Database:
- Topographic Contours, Statewide

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

### Comments

A search of the Aboriginal Sites of Significance database showed that the area under application is within the buffers of two recorded occurrences of Aboriginal art. An archaeological survey conducted with members of the Bibbulmun Aboriginal Corporation identified no Aboriginal archaeological sites or isolated artefacts within the area under application (Hammond, 2006).

### Methodology

Lot 700 on Plan 59305 is freehold land owned by Alcoa of Australia Ltd.  
Reference:  
- Hammond (2006)  
GIS Databases:  
- Aboriginal Sites of Significance  
- Cadastre

## 4. Assessor's comments

### Comment

The assessable criteria have been addressed and the clearing as proposed is may be at variance to Principles (d) and (f).

## 5. References

- Barrett, R.L. (2005) Perth plants: a field guide to the bushland and coastal flora of Kings Park and Bold Park, Perth, Western Australia.
- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2006) Site Inspection 26 April 2006 on Lot 203 South Western Highway, Wagerup, CPS 1232/1; Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC6446
- DEC (2006a) Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC6262.
- DEC (2008) DEC Species and Communities Branch - Threatened Ecological Community advice. Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC67555
- EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.
- Hammond, C. (2006) Short report - Archaeological survey of two areas within the Alcoa Wagerup Refinery, Wagerup, Western Australia. Archae-aus, Western Australia. TRIM ref. 2006I/607
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Paczkowska, G (2000) The Western Australian flora: a descriptive catalogue, Wildflower Society of Western Australia, Perth.
- Shepherd, D.P. (2007). 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.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- Woodman Environmental Consulting (2008) Alcoa World Alumina Wagerup Refinery - Pipeline Easement Widening - Vegetation and Flora Assessment. TRIM Ref DOC51453.

## 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)