



## 1. Application details

### 1.1. Permit application details

Permit application No.: 645/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Kimberley Nickel Mines Pty Ltd

### 1.3. Property details

Property: M80/180  
M80/181  
M80/179  
M80/182  
M80/183  
Local Government Area: Shire Of Halls Creek  
Colloquial name: Sally Malay Nickel Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
11		Flooding	Mineral Production
20		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 Vegetation Association 837 - Grasslands, short bunch grass savanna low tree; snappy gum over arid short grass on plains (Hopkins et al, 2001).	The vegetation to be inundated at the tailings storage facility was in good condition. The vegetation consisted of <i>Triodia sp.</i> (spinifex) and an upper storey of <i>Eucalyptus brevifolia</i> (snappy gum). No obvious signs of grazing were noticed, however cattle were observed grazing at other sites within the mine area.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The description of the vegetation under application was obtained during a site visit in December 2005 (DoE Ref: TRIM KND939), and from a report by MBS Environmental (2005) (DoE Ref: TRIM KNI1192) collating past surveys from Dames and Moore (1992) and Outback Ecology (2002).
Beard Vegetation Association 842 - Mosaic: Grasslands, short bunch grass savanna, low tree, Mt House box & bloodwood over enneapogon short grass / Hummock grasslands, open low tree steppe; snappy gum over <i>T. wiseana</i> & <i>T. intermedia</i> (Hopkins et al, 2001).	Measures are taken to exclude cattle from the mine such as fencing the mine site and active removal of cattle upon entering the mine. Weed infestation was very minimal in the mine site in general. The miscellaneous activities have not yet been determined, nor their location, however the vegetation surrounding the mine area was in good condition.		

## 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 vegetation of the area comprises hummock grasslands and a low tree upper storey (Hopkins et al, 2001). There are no Environmentally Sensitive Areas present within or in close proximity to the application area. A flora survey compiled by MBS Environmental (2005) identified a total of 74 species from 23 families and 48 genera in the vicinity of the proposal. Three weed species were located: <i>Aerva javanica</i> (Kapok Bush), <i>Malvastrum americanum</i> and <i>Acacia holosericea</i> (Candelabra Wattle). During the site visit it was observed that the area under application was of similar structure and diversity as the surrounding areas. As the proposal area is located within an active mine site, the level of current disturbance is quite high. Therefore, it is unlikely that the vegetation of the area is of a higher biological diversity than the surrounding area.
<b>Methodology</b>	Site visit; MBS Environmental (2005); Hopkins et al (2001)

**(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 hummock grasslands and upper storey of low trees (Shepherd et al, 2001; site visit) would provide some habitat for fauna species. However, the surrounding areas provide similar habitat environments which would be utilised by any displaced fauna. A survey of the area (MBS Environmental, 2005) and subsequent site visit did not locate any species of priority conservation status. Given the location of the clearing in an active mine site, there is a low likelihood of the area under application having a higher biodiversity than the surrounding area.

**Methodology** Site visit;  
Shepherd et al (2001);  
MBS Environmental (2005)

**(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**

No Declared Rare and Priority Species were surveyed within the area proposed for clearing (MBS Environmental, 2005).

**Methodology** MBS Environmental (2005);  
GIS Database: Declared Rare and Priority Flora List - CALM 13/08/04

**(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 within the area proposed for clearing.

**Methodology** GIS Database: Threatened Ecological Communities - CALM 15/07/03

**(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).

	Pre-European area (ha) *	Current extent (ha) *	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion -					
Central Kimberley	7,700,436	7,700,436	~100	Least concern	13.9
Shire of Halls Creek	No information available				
Beard vegetation association					
- 837	182,774	182,774	~100	Least concern	0.0
- 842	367,094	367,094	~100	Least concern	3.5

\* Shepherd et al. (2001)

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

The vegetation of the site is a component of Beard Vegetation Association 837 and 842 (Hopkins et al, 2001), of which there is ~100% of the pre-European extent of each still remaining (Shepherd et al, 2001). The vegetation complexes within this application are above 30% representation, therefore the vegetation type is of 'least concern' for biodiversity conservation (Department of Natural Resources and Environment, 2002).

**Methodology** 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 area under application does not contain wetlands or watercourses.

Fletcher Creek bounds the area to the north and east, being within 1km at the closest point. Kimberley Nickel Mines has adequate surface water and groundwater management practices and monitoring procedures to

ensure Fletcher Creek is protected from any adverse effects of the mine activities (MBS Environmental, 2005; site visit). It is unlikely that the inundation of 11 hectares of vegetation at the tailings storage facility and the discontinuous clearing of 20 hectares for miscellaneous mining activities will affect Fletcher Creek.

The RAMSAR and ANCA wetlands of Lake Argyle and Lake Kununurra are approximately 95 km to the north east, and the Ord River Floodplain is approximately 190 km to the north. It is unlikely that the proposed clearing will affect these areas due to this distance.

**Methodology** MBS Environmental (2005);  
Site Visit;  
GIS Databases:  
- Hydrology, linear - DOE 1/2/04  
- RAMSAR, Wetlands - CALM 21/10/02  
- ANCA Wetlands - CALM 08/01

**(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**  
Advice received from the Department of Agriculture (2005) indicates the clearing has the potential to cause soil erosion if the clearing is carried out during the wet season before the storage facilities are commissioned.

During the site visit, Kimberley Nickel advised the vegetation at the tailings storage facility will not be cleared, rather inundated with the slurry. The retention of the vegetation will prevent erosion from occurring. Additionally, clearing for any miscellaneous activities will not take place during the wet season, due to the hindrance of the seasonal factors on machinery. Therefore it is not likely the proposal will be at variance to this principle.

**Methodology** DAWA Advice (2005);  
Site visit

**(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**  
There are no CALM managed lands in the area proposed to be cleared.

The Purnululu Conservation Reserve is located approximately 20 km to the east, and the Purnululu National Park is approximately 29 km to the east. It is unlikely that the inundation of 11 hectares and the discontinuous clearing of 20 hectares of vegetation will impact upon these conservation reserves.

Parry's Lagoon Nature Reserve is located approximately 170 km to the north, downstream from the proposal area via Fletcher Creek and the Ord River. Kimberley Nickel Mines has adequate surface water and groundwater management practices and monitoring procedures to ensure Fletcher Creek is protected from any adverse effects of the mine activities (MBS Environmental, 2005; site visit). These procedures, in conjunction with the large distance separating the areas, ensure it is unlikely that the proposed clearing will impact this conservation reserve.

**Methodology** MBS Environmental (2005);  
Site visit;  
GIS Database:  
- CALM Managed Lands 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**  
The area under application is not in a Public Drinking Water Source Area, therefore the quality of the groundwater and surface water do not require protection for human consumption.

Beards description of the vegetation of the area is grasslands with low trees (Hopkins et al, 2001), which is highlighted in site photos of the area. The removal or inundation of this vegetation is not likely to result in increased groundwater levels, as this is shallow rooted vegetation and is not likely to have a significant role in keeping groundwater levels stable.

The area under application is located less than 1 km from Fletcher Creek. It is possible that surface run off may contain sediments which would increase sedimentation and turbidity of the creek. However Kimberley Nickel Mines has adequate surface water and groundwater management practices and monitoring procedures to ensure Fletcher Creek is protected from any adverse effects of the mine activities (MBS Environmental, 2005; site visit).

**Methodology** MBS Environmental (2005);  
 Site Visit;  
 Hopkins et al, 2001;  
 GIS Database:  
 - Hydrology, linear - DOE 1/2/04

**(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**  
 Flooding can occur seasonally over the December to March period, where flood height and duration are variable and can be extreme. The inundation of 11 hectares and the discontinuous clearing of 20 hectares of vegetation is unlikely to increase these flood factors.

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

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

**Comments**

The vegetation to be cleared is within Mineral Leases M80/180 and M80/181.

No objections have been received in relation to the clearing of native vegetation in the area under application.

The area under application has a Native Title Claim over it by the Malarngowem peoples (WC99-044). A Native Title Claim by the Purnululu peoples (WA94-011) is located within a few meters of the area under application. However the Mineral Lease has been granted, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

This application is not at variance to the Environmental Protection Authority's advice dated 27 March 2003 (CRN 180368). It is noted that the EPA envisages the preliminary Decommissioning and Closure Plan will address, among others, a rehabilitation plan for all disturbed areas.

The proponent has advised water will be required for the purpose of dust suppression and will use water allocated under their current license issued under the *Rights in Water and Irrigation Act 1914*.

The second lift of the tailings storage facility has a current Works Approval and Environmental Protection License, for which neither require amending. As the miscellaneous activities have not been specified, the proponent's attention is drawn to the requirements of the *Environmental Protection Act 1914* to determine the need for a Works Approval or Environmental Protection License.

**Methodology** Environmental Protection Authority (2003) CRN 180368  
 GIS Databases:  
 - Native Title Claims - DLI 19/12/04  
 - Environmental Impact Assessments, Polygon Features - DOE 29/11/04

**4. Assessor's recommendations**

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Flooding	11	Grant	Assessable criteria have been addressed and no objections were raised. The Assessing Officer therefore recommends that the permit should be granted.
Mineral Production	Mechanical Removal	20	Grant	Assessable criteria have been addressed and no objections were raised. The Assessing Officer therefore recommends that the permit should be granted.

**5. References**

DAWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref HD26475

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.

Environmental Protection Authority (2003) Public Advice CRN 180368

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.

MBS Environmental (2005) Sally Malay Project: Native Vegetation Management Plan. Prepared for Kimberley Nickel Mines Pty Ltd. DoE Reference: TRIM KNI1192

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
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)