



Clearing Permit Assessment Report

1. Application details

1.1. Permit application details

Permit application No.: 912/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Ms Helen Baker Black Swan Nickel Pty Ltd**
Postal address: Locked Bag 50, Kalgoorlie WA 6430
Contacts: Phone: 9024 0208
Fax: 9024 0200
Email:

1.3. Property details

Property: M27/200
M27/214

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
55		Mechanical Removal	Expansion of the Black Swan Nickel Mine Disseminated Waste Rock Dump

2. Background

2.1. History (including previous clearing permits, compensation paid, caveats on title deeds etc.)

Date	Comments
19 October 2005	To be advertised 24 Oct 05

2.2. Existing environment and information

2.2.1. Description of the native vegetation under application

Vegetation Description
Beard vegetation association 20: Low woodland; Mulga mixed with *Allocasuarina cristata* and Eucalyptus species.

(Hopkins et al. 2001; Shepherd et al. 2001)

A flora survey of the area proposed to be cleared was conducted by Onshore Environmental On the 5th February 2006.

The vegetation across the survey area was described as a single vegetation complex; Open low woodland (Onshore Environmental, 2006). This comprised of *Eucalyptus oleosa* over a scrub understorey of *Acacia aneura*, *A. acuminata*, *Senna artemisioides* ssp. *filifolia*, *S. stricta*, *Eremophila metallicorum* and *Prostanthera althoferi* ssp. *althoferi*. No Declared Rare or Priority flora species were recorded by Onshore Environmental within the areas proposed to be cleared.

Clearing Description

The proposal is for the clearing of 55 hectares of native vegetation for the expansion of the Black Swan Nickel waste rock dump.

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

Comment

The proposed area for clearing is located to the east of the existing waste rock dump. There is a small amount of undisturbed habitat located in the south-western corner of the proposed waste dump expansion area, however, the majority of the site is disturbed and fragmented by vehicle tracks, exploration drill sites and historical logging and grazing activities (ATA Environmental, 2006). Photographs of the area proposed to be cleared further indicate that the vegetation has been disturbed as a result of the above mentioned factors.

2.2.2. Items of interest

Theme

Environmental Impact Assessments - DOE 18/8/05
Environmental Impact Assessments - DOE 18/8/05

Value

Not Assessed - Managed Under Part 5
Not a Proposal Under Part 4 - Section 16
Report

Within meters

Hydrographic Catchments - Catchments - DOE 23/3/05
 Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 Local Government Authorities - DLI 8/07/04
 Native Title Claims - DLI 19/12/04
 Native Title Claims - DLI 19/12/04
 Native Title Claims - DLI 19/12/04
 Pre-European Vegetation - DA 01/01

Raeside-Ponton
 Murchison
 City of Kalgoorlie/boulder
 CENTRAL EAST GOLDFIELDS
 MADUWONGGA
 WIDJI
 20

3. Permit assessment activities

Date	Activity	Comment	Trim Ref.
06 October 2005	Application received		
19 October 2005	Accepted for assessment		
21 October 2005	Direct Interest Letter Sent	Direct interest letters sent to City of Kalgoorlie/Boulder and Goldfields Land and Sea Council.	
21 October 2005	Referred to DoIR	Referred to Megan Byfield for comment.	
21 October 2005	Referred to DoIR	Megan Byfield advises that an NOI has been received for a waste dump expansion. This is yet to be assessed, however, it is anticipated that no significant issues will be found with this proposal. The proposal is an amendment to NOI's 4308 and 4427 (on report files 5200-02 and E2736/200301 respectively).	
21 October 2005	Referred To Doe	Email sent to Vi Saffer (DoE) for water licence checks etc.	
24 October 2005	Referred to DAWA	Referred to DAWA.	
24 October 2005	Referred To CALM	Referred to CALM.	
24 October 2005	Contacted Applicant	Ryan Mincham (DoIR) rang Helen Baker (Black Swan) to discuss proposal. Helen was not in office so an email was sent requesting further fauna and flora information for the assessment of this application.	
28 October 2005	Under assessment		
28 October 2005	Contacted Applicant	Ryan Mincham rang Helen Baker to follow-up on email sent on 24 October. Helen in a training course so will await response from applicant.	
28 October 2005	Doe Advice Received	Received advice from Tim Marelich (DoE) with respect to licences and approvals for the project.	
04 November 2005	Other	Received a call from Helen Baker advising that flora and hydrological information relating to the proposal will be sent in the near future. She said no fauna information was available and that an ecologist would be engaged to conduct a fauna assessment for the Black Swan lease area. Ryan Mincham advised Helen of the EPA Guidance Statements No. 51 & 56 relating to flora and fauna survey for environmental impact assessment.	
08 November 2005	Waiting for additional information from applicant		
09 December 2005	Contacted Applicant	Ryan Mincham spoke to Helen Baker regarding the provision of flora and fauna information relating to this project. Helen is awaiting a desktop fauna habitat assessment, however, agreed to send existing information with respect to the physical environment, flora and invertebrate fauna.	
04 January 2006	Other	Ryan Mincham received information from Helen Baker relating to the flora, fauna, soil and hydrogeology for the proposed area to be cleared.	
10 January 2006	Other	Helen Baker called Ryan Mincham to advise that ATA had conducted a desktop and field based fauna assessment for the area under application and this will be forwarded to Ryan as soon as it becomes available. Ryan advised that an assessment of this application was underway; however, given that the supporting documentation was late to arrive, the assessment is unlikely to be complete before mid-February at the earliest. Helen understood the situation and will be contact Ryan sometime in February to check it's progress.	
16 February 2006	Other	Helen Baker sent an email regarding progress of the assessment for CPS 912/1.	
16 February 2006	Contacted Applicant	Ryan Mincham emailed Helen Baker advising that the application was still under assessment. Ryan also enquired about the availability of the ATA fauna survey conducted for the area under application, advising that an assessment against principle b would require that this information be available.	
13 March 2006	Other	Ryan Mincham received a copy of the ATA fauna assessment for the area under application.	
27 March 2006	Under assessment		
29 March 2006	Contacted Applicant	Ryan Mincham rang Helen Baker to request a copy of targeted flora survey for the waste dump expansion area. Helen agreed to email this to	

30 March 2006	Other	Ryan. Helen Baker sent a copy of flora survey to DoIR.
31 March 2006	Contacted Applicant	Ryan Mincham contacted Helen Baker to seek clarification on certain points regarding the flora survey. Helen confirmed that a search of the relevant databases was conducted and no priority or DRF species were known to exist within the area under application. Helen also confirmed that the vegetation to be cleared would be considered to be 'good' condition,
03 April 2006	Referred To CALM	Ryan Mincham sent draft assessment report to CALM for comment.

4. 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 proposed to be cleared is largely comprised of Mulga woodland, a dominant vegetation association within the Murchison region (Shepherd, 2001; Cowan, 2001).

ATA Environmental conducted a Fauna assessment of the areas proposed to be cleared on the 6th and 10th January 2006 (ATA Environmental 2006). ATA Environmental state in their report that from a fauna perspective the surrounding habitats outside of the area proposed to be cleared are similar to that found within the area under application. A small section of relatively undisturbed habitat can be found in the south-western corner of the area proposed to be cleared; however, the majority of the site has been disturbed and fragmented by vehicle tracks, exploration drill sites and historical logging activities (ATA Environmental, 2006). Aerial and various other photographs submitted in support of the application also show the vegetation to be largely disturbed as a result of the above mentioned activities.

No Declared Rare or Priority flora species are known to occur within the area under application (GIS Database), and none were recorded during the recent flora survey conducted in February 2006 across the waste rock dump expansion area (Onshore Environmental, 2006).

No species listed under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*, or the *Wildlife Conservation Act 1950* are likely to be significantly impacted by the proposed clearing of this land (ATA Environmental, 2006). Furthermore, the faunal assemblage that is currently present on the site, and which will be impacted on during clearing, is unlikely to differ from that found in similar habitat located elsewhere in the bioregion.

It is unlikely that the biodiversity at the site of this proposal would be considered outstanding, or of a higher diversity than in the Murchison bioregion or the local area. CALM (2006) have advised that the proposal is unlikely to have an impact on any significant environmental values, and on this basis is unlikely to be at variance to this principle.

Methodology	ATA Environmental (2006). CALM (2006). Cowan (2001). GIS Databases: - Pre-European Vegetation - DA 01/01. - Declared Rare and Priority Flora List - CALM 01/07/05. Onshore Environmental (2006). Shepherd (2001).
Officer	Ryan Mincham

(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**

A fauna assessment of the area proposed to be cleared was conducted by ATA Environmental on the 6th and 10th January 2006. A search of the Western Australian Museum's online database (FaunaBase), CALM's Threatened and Priority fauna database and the Commonwealth Department of Environment and Heritage's *EPBC Act 1999* online database was conducted prior to a reconnaissance survey and grid search of the area under application.

A number of species of conservation significance are listed as potentially being found within the study site, however, no species listed under the *EPBC Act 1999* or the *Wildlife Conservation Act 1950* are likely to be significantly impacted upon by the proposed clearing (ATA Environmental, 2006).

The Carnaby's Cockatoo (*Calyptorhynchus latirostris* - Schedule 1), is endemic to the forests, woodlands and wheatbelt of the south-west. During the survey particular attention was paid to potential foraging sites and breeding trees for Carnaby's Cockatoo. No trees were found with suitable hollows that could be used for

breeding. As they do not normally come this far north-east of their normal distribution in the south-west of the state, it is therefore highly unlikely that they would be seen in the area (ATA Environmental, 2006).

The Red-tailed Phascogale (*Phascogale calura* - Schedule 1), has not been caught in the general area and was not recorded in the search of FaunaBase for this area. It is unlikely that this species will be in the vicinity of the area proposed to be cleared (ATA Environmental, 2006).

The Chuditch (*Dasyurus geoffroii* - Schedule 1), has a patchy distribution throughout the Jarrah forest and mixed Karri/Marri/Jarrah forest of south-west WA and other isolated areas. CALM records show that one specimen was recorded in 1974 in Kambalda East, therefore it is possible that this species is in the general region. However, there are no records of that species in the goldfields east of Kalgoorlie and it is therefore highly unlikely that they would be found on this site (ATA Environmental, 2006).

The Slender-billed Thornbill (*Acanthiza iredalei iredalei*), listed as a Vulnerable species under the EPBC Act 1999, has a preference for chenopod shrubland in close association with samphire flats. The preferred habitat for this species is very different to that found on the site and the proposed clearing is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Malleefowl (*Leipoa ocellata* - Schedule 1), builds distinctive nests that comprise a large mound of soil/rock covering a central core of leaf litter. ATA Environmental found no Malleefowl mounds in the general area and the open woodland with limited understorey is not the preferred habitat for Malleefowl. As a result, clearing is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Numbat (*Myrmecobius fasciatus* - Schedule 1), was formally widespread across southern semi-arid and arid Australia. It is now only present at Dryandra and the Perup/Kingston area east of Manjimup. A single individual was noted to the south of Kalgoorlie in 1961 and there have been some recent unconfirmed sightings between Hyden and Norseman, however, they have not been seen north of Kalgoorlie for many years. It is unlikely that the species will be in the vicinity of the area proposed to be cleared (ATA Environmental, 2006).

The Great Egret, White Egret (*Ardea alba*), listed as a Migratory species under the EPBC Act 1999, prefers shallow freshwater and salt water lakes and waterways, and the adjacent samphire flats, and is rarely seen in dry pastures. It is unlikely that this species will be seen in the vicinity of the area proposed to be cleared (ATA Environmental, 2006).

The Fork-tailed Swift (*Apus pacificus*), listed as a Migratory species under the EPBC Act 1999, may be an occasional visitor to the area although it has not been recorded in previous surveys. Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Rainbow Bee-eater (*Merops ornatus*), listed as a Migratory species under the EPBC Act 1999 and widespread. Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Carpet Python (*Morelia spilota imbricata* - Schedule 4), has been caught in the open woodland areas in the Goldfields and in habitat approximately 20km east of the site. Given that the proposed land clearing represents a very small fraction of similar habitat in the general area, it is highly unlikely to have any significant impact on this species (ATA Environmental, 2006).

Branchinella denticulata is listed as Vulnerable on the 2000 IUCN Red List of Species. This crustacean is known from Gidgi Lake north of Kalgoorlie. Given the area to be cleared does not include a salt lake or samphire flats; it is highly unlikely to occur in the vicinity of this site (ATA Environmental, 2006).

Both *Jalmenus aridus* and *Ogyris subterrestris petrina* are Priority 1 listed butterfly species. Both species have been recorded in the vicinity of Lake Douglas, near Kalgoorlie. The proposed clearing of this site is unlikely to have a significant impact on this species as it is highly unlikely to be on the study area (ATA Environmental, 2006).

The Shy Heathwren (*Hylacola cauta whitlocki* - Priority 4) has been recorded by Johnstone and Storr (2004) as locally moderately common or common, but is generally scarce or uncommon and patchily distributed over its range. Kalgoorlie is on the north-east boundary of its geographic distribution. Given that the proposed clearing represents a very small fraction of similar habitat in the area, it is unlikely to have any significant impact on this species (ATA Environmental, 2006).

A search of FaunaBase indicated that the Western Rosella (*Platycercus icterotis xanthogenys* - Priority 4), has been recorded in the vicinity of Kalgoorlie. Given that the proposed clearing represents a very small fraction of similar habitat in the area, it is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Australian Bustard (*Ardeotis australis* - Priority 4) lives in wooded grasslands (including spinifex), chenopod flats, low heathland and farmed areas. Although not reported in the survey by McKenzie et al., (1992), local environmental staff working in the mining operations have reported them in the area in recent years. Given that the proposed clearing represents a very small fraction of similar habitat in the general area, it

is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Crested Bellbird (*Oreoica gutturalis gutturalis* - Priority 4), was not recorded during the fauna survey, however, it was sighted in nine habitats during the CALM regional survey (McKenzie, et al., 1992).). Garnett & Crowley (2000) list the main threat to this species as woodland fragmentation. On both a local and regional level, the vegetation structure is largely intact and the clearing of the area under application would not constitute a fragmentation of this habitat type. Due to the widespread nature of the vegetation type it is unlikely that the proposed clearing represents a significant threat to this species.

The White-browed Babbler (*Pomatostomus superciliosus ashbyi* - Priority 4), prefers arid and semi-arid areas, on the edges of thickets and scrub, including Mulga, Wattle and Acacia. This species has not been recorded in the area; however, it was sighted in six habitats during the CALM regional survey (McKenzie, et al., 1992). Garnett & Crowley (2000) list the main threat to this species as land clearing for agriculture. On both a local and regional level, the vegetation structure is largely intact and the clearing of the area under application would not constitute a fragmentation of this habitat type. Due to the widespread nature of the vegetation type it is unlikely that the proposed clearing represents a significant threat to this species.

The Hooded Plover (*Charadrius rubricollis* - Priority 4), frequents the margins and shallows of salt lakes, and also along coastal beaches. The proposed clearing is not in habitat frequented by this species, therefore, the proposed clearing is unlikely to have any significant impact on this species (ATA Environmental, 2006).

The Thick-billed Grass-wren (*Amytornis textilis textilis* - Priority 4), has not been recorded in the Goldfields since 1910 (Johnstone and Storr, 2004 as cited in ATA, 2006). Given that this species is considered extinct in the Goldfields the proposed clearing is highly unlikely to have a significant impact on that species (ATA Environmental, 2006).

ATA Environmental (2006) have advised that the area proposed for clearing is replicated many times over in the adjacent areas and contains only a few hectares of undisturbed habitat. This habitat type has been comprehensively surveyed elsewhere in the bioregion and there is nothing in the available data to suggest that the faunal assemblage at this site is likely to be unique, have particular conservation significance or contains fauna habitat that is limited in the area and is therefore significant. ATA Environmental have stated in their report that the proposed clearing is unlikely to have any significant affect on species or ecosystems of conservation significance (ATA Environmental, 2006).

CALM (2006) have advised that the proposal is unlikely to have an impact on any significant environmental values, and on this basis is unlikely to be at variance to this principle.

Methodology ATA Environmental (2006).
CALM (2006).
Garnett & Crowley (2000).
Officer Ryan Mincham

(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

According to the available CALM datasets, no Priority or Declared Rare Flora (DRF) species are known to occur within the area under application (GIS Database).

A targeted flora survey of the area proposed to be cleared was carried out by Onshore Environmental in February 2006. A search of CALM's Declared Rare and Priority flora database was conducted prior to field survey, to identify rare and priority species that may exist within the project area. The results of the database search revealed that no species of conservation significance had previously been recorded within the search area (Baker pers. comm. 2006).

No plant taxa gazetted as Declared Rare Flora pursuant to subsection (2) of section 23F of the Wildlife Conservation Act (1950) were recorded within the survey area (Onshore Environmental, 2006). Similarly, no Priority flora species was recorded from the survey area.

Based on the above considerations and the fact that the vegetation associations present across the survey area have both extensive local and regional coverage, it is unlikely that the vegetation proposed to be cleared is necessary for the in-situ existence of significant flora species.

CALM (2006) have advised that the proposal is unlikely to have an impact on any significant environmental values, and on this basis is unlikely to be at variance to this principle.

Methodology CALM (2006).
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- Declared Rare and Priority Flora List - CALM 01/07/05.
Helen Baker, Environmental Coordinator, Black Swan Nickel Mine (pers. comm. 31/03/2006).

Onshore Environmental (2006).

Officer Ryan Mincham

(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 (TECs) identified within the area subject to be cleared (GIS Database). The nearest known TEC is approximately 163 km south-east of the area under application. Furthermore, no known TECs are listed in the Murchison 1 - East Murchison IBRA subregion (Cowan, 2001). CALM (2006) have advised that the proposal is unlikely to have an impact on any significant environmental values, and on this basis is unlikely to be at variance to this principle.

Methodology CALM (2006).
Cowan (2001).
GIS Databases:
- Threatened Ecological Community Database - CALM 12/4/05.

Officer Ryan Mincham

(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 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; EPA, 2000).

While the benchmark of 15% representation in conservation reserves (JANIS Forests Criteria, 1997) has not been met for Beard vegetation association 20, approximately 99.6% of the pre-European extent remains for this association and it is therefore of 'least concern' for biodiversity conservation (Department of Natural Resources and Environment, 2002).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% in reserves/CALM-managed land*
IBRA Bioregion - Murchison	28,206,195	28,206,195	~100%	Least concern	
City of Kalgoorlie/Boulder	No information available				
Beard vegetation associations - 20	1,558,296	1,552,012	~99.6%	Least concern	13.1%

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

Methodology Department of Natural Resources and Environment (2002).
EPA (2000).
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
Hopkins et al. (2001).
JANIS Forests Criteria (1997).
Shepherd et al. (2001).

Officer Ryan Mincham

(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

There are no watercourses or wetlands present within the proposed clearing area (GIS Database). Several minor, non-perennial watercourses are situated in close proximity to the area under application; however, these are located higher in the landscape than the project area and will not be impacted upon by any clearing associated with this proposal. In consideration of the above factors, the proposal is not likely to be at variance to this principle.

Methodology GIS Databases:
- Hydrography, linear - DOE 01/02/04.
- Lakes 250K - GA.
- Topographic Contours, Statewide - DOLA 12/09/02.

Officer Ryan Mincham

(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

According to the Department of Agriculture, the area proposed to be cleared is located on the Helag land system which is described as hard pan plains and central drainage tracts with mulga and minor chenopod shrublands (DAWA, 2006). DAWA (2006) advise that the red earth on hard pan soils likely to be encountered on the site, and land down gradient are prone to erode where natural surface flows are altered. Loss of native vegetation down gradient is also likely to occur through water starvation if the sheet flow regime is altered.

Black Swan Nickel (2006) have advised that the topography across the site is flat and there are no salt lakes, clay pans, creeks, tributaries or other significant surface hydrological features within a 5 km radius of the project area. Drains are installed around the Black Swan Nickel site to divert surface water flow around the mining activities and redirect this flow back to the course of the natural flow. The redirection of this sheet flow regime avoids any potential starvation of native vegetation down gradient.

Black Swan Nickel have further advised that a V-notch drain will be installed around the footprint of the waste dump to eliminate erosion (Black Swan, 2006). The area will be cleared incrementally and the dumping of waste will commence within weeks of clearing to further avoid the incidence of erosion. Topsoil and vegetation will be removed and stockpiled separately for later use in rehabilitation programs.

In consideration of the above, DAWA (2005a) have advised that the proposed management strategies should be adequate to avoid land degradation impacts identified in the assessment of this proposal. It is therefore considered that the proposal is unlikely to be at variance to this principle.

Methodology DAWA (2006).
DAWA (2006a).
Black Swan Nickel (2006).
Officer Ryan Mincham

(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 Bullock Holes Timber Reserve, located approximately 9.2 km south-east of the area proposed to be cleared, is the nearest CALM managed conservation areas to the proposal (GIS Database). It is not considered that the vegetation within the project area would provide a significant ecological linkage to this conservation area. Furthermore, the vegetation associations present within the area under application are also well represented within the Bullock Holes Timber Reserve.

CALM (2006) have advised that the proposal is unlikely to have an impact on any significant environmental values, and based on the distance between the project area and the nearest CALM managed reserve, the proposed clearing is not likely to be at variance to this principle.

Methodology CALM (2006).
GIS Databases:
- Pre-European Vegetation - DA 01/01.
- CALM Managed Lands and Water - CALM 1/07/05.
Officer Ryan Mincham

(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

There are no watercourses or wetlands within the area proposed to be cleared (GIS Database), consequently, the mining developments associated with this proposal will not have any impact upon surface water quality. Furthermore, the area to be cleared does not fall within a Public Drinking Water Source Area (PDWSA) (GIS Database).

Several bores are located alongside the existing waste rock dump, and these are routinely monitored and hydrological measurements are taken (Baker pers. comm. 2006). According to Rockwater (2005), the pH of the groundwater across the area under application is mostly in the range of 7 to 8, and is unlikely to be impacted upon by the clearing associated with this proposal. Depth to groundwater ranges between 14 and 42 metres, and the size of the clearing associated with this proposal is not likely to significantly increase rainfall recharge so as to impact on the depth to groundwater. The natural salinity of the groundwater in the project area varies from between 28,000 to 56,000 milligrams per litre of Total Dissolved Solids (TDS) and is considered saline-hypersaline. The quality of groundwater is not likely to be impacted upon by the clearing activity.

The area of native vegetation to be cleared is unlikely to have an impact on regional groundwater levels considering the magnitude of the regional Yilgarn-Goldfields groundwater province (>296,000 sq km) and the extent of native vegetation remaining in the Murchison Bioregion, which is approximately 100% (Shepherd et

al, 2001).

In consideration of the above factors, the proposal is not likely to be at variance to this principle.

Methodology GIS Databases:
- Hydrography, linear - DOE 01/02/04.
- Lakes 250K - GA.
- River 250K - GA.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
- Groundwater Provinces - WRC 98.
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06.
Helen Baker, Environmental Coordinator, Black Swan Nickel Mine (pers. comm. 31/03/2006).
Rockwater (2005).
Shepherd et al. (2001).

Officer Ryan Mincham

(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**
Kalgoorlie-Boulder has a dry climate with hot summers and cool winters. With average annual rainfall of 260 mm and annual average evaporation of 2,664 mm (BoM, 2006), there is likely to be little surface flow during normal seasonal rains. Thunderstorms provide most of the summer rainfall, often producing heavy localised falls in short periods (BoM, 2006). Although rare, decaying tropical cyclones, originating off the north-west coast can move through the Goldfields, producing heavy rains and sometimes flooding.

Based on the above information and the fact that the size of the clearing is unlikely to create a catchment area large enough to increase the incidence of flooding, it is unlikely that the proposal is at variance to this principle.

Methodology BoM (2006).
Officer Ryan Mincham

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments
There are two native title claims over the area under application; WC98/027 and WC99/030. These claims have been registered with the National Native Title Tribunal on behalf of the Widji and Central East Goldfields claimant groups respectively. However, the mining tenements have been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no Aboriginal sites of significance within the area under application. It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no sites of Aboriginal significance are damaged through the clearing process.

The proponent has an EP Licence (6933/11) valid until 25 April 2005 (DoE, 2005).

The proponent also holds two 'inforce' water licences (79277 & 154690) for the purposes of dust suppression and mineral processing. These expire in 2006 and 2010 respectively (DoE, 2005).

Methodology DoE (2005).
GIS Databases:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

Officer Ryan Mincham

5. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Stockpile	Mechanical Removal	55	Grant	An assessment of the application has been completed, and it has been determined that the proposal is not likely to be at variance to any of the principles.
				The assessing officer therefore recommends that the permit be granted subject to the following conditions:

1. The Permit Holder shall record the following for each instance of clearing: a) location of where the clearing occurred (using Geocentric Datum Australia 1994); b) purpose of clearing; c) area cleared in hectares; and d) area rehabilitated in hectares.
2. The Permit Holder shall provide a report to the Director, Environment, DoIR by 31 March each year, setting out the records required under condition 1 of this permit in relation to clearing carried out between 1 January and 31 December of the previous year.

6. References

- DoE (2005) Water allocation/licence advice. Department of Environment, Western Australia.
- ATA Environmental (2006) Fauna assessment - Proposed clearing for a waste rock dump expansion, Black Swan Nickel - Report 2006/40. Prepared for LionOre Australia Pty Ltd, March 2006.
- Black Swan Nickel (2006) Environmental management strategies for Black Swan Nickel Mine. Prepared by Randell Ford, Resident Manager, Black Swan Nickel Mine.
- BoM (2006) Bureau of Meteorology website - www.bom.wa.gov.au.
- CALM (2006) Land clearing proposal advice. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Conservation and Land Management, Western Australia.
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