



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 1490/1

Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Barrick (Kanowna) Ltd

### 1.3. Property details

Property: M26/446

Local Government Area: City Of Kalgoorlie/Boulder

Colloquial name: Mining Lease 26/446

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
200		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** The proposed clearing area is mapped at 1:250000 scale as Beard Vegetation Association **468** (Medium woodland; Salmon gum & Goldfields blackbutt) and **9** (Medium woodland; Coral gum (*E. torquata*) and Goldfields blackbutt (*E. lesouefii*). (Shepherd et al, 2001).

During a flora survey in September 2005, Jims Seeds, Weeds & Trees identified five vegetation types. These are:

- (1) *Eucalyptus lesouefii* woodland with an understorey of *Ptilotus obovatus*, *Alyxia buxifolia* and *Olearia muelleri*, *Halgnia andromedifolia*, *Senna artemisioides* ssp *artemisioides*, *Casuarina pauper*, *Atriplex codonocarpa*, *Maireana brevifolia*, *Cratystylis microphylla*, *Scaevola spinescens*, *Acacia hemiteles*, *Eremophila glabra* ssp *glabra*, *Pittosporum angustifolium*, *Melaleuca sheathiana*, *Exocarpos aphyllus* and *Alectryon oleifolius*;
- (2) *Eucalyptus* woodland over spinifex, comprising dominant *Eucalyptus gracilis* and *E. oleosa* over *Triodia scariosa*;
- (3) *Acacia acuminata* and *Allocasuarina helmsii* over spinifex (*Triodia scariosa*), *Alyxia buxifolia*, *Olearia muelleri*, *Senna artemisioides* ssp *filiolia*, *Maireana triptera*, *Scaevola spinescens*, *Acacia hemiteles*, *Eremophila glabra* ssp *glabra*, *E. oppositifolia* ssp *angustifolia*, *Grevillea nematophylla* ssp *nematophylla*, *Stenantherum stipulosum* and *Exocarpos aphyllus*;
- (4) *Acacia acuminata* plain comprising dominant *A. acuminata* with *Ptilotus obovatus*, *Marsdenia australis*, *Olearia muelleri*, *Halgnia andromedifolia*, *Senna artemisioides* ssp *filiolia*, *Allocasuarina helmsii*, *Casuarina pauper*, *Maireana triptera*, *Rhagodia eremaea*, *Sclerostegia disarticulata*, *Scaevola spinescens*, *Codonocarpus contifolius*, *Prostanthera grylloana*, *Isotoma petraea*, *Eremophila oppositifolia* ssp *angustifolia*, *Eucalyptus griffithsii*, *Dianella revoluta*, *Triodia scariosa*, *Grevillea nematophylla* ssp *nematophylla*, *Melaleuca hamata*, *Exocarpos aphyllus*, *Dodonaea lobulata*, *Solanum ferocissimum* and *Brachychiton gregorii*; and,
- (5) *Eucalyptus griffithsii* woodland comprising dominant *E. griffithsii* with understorey of *Ptilotus obovatus*, *Alyxia buxifolia*, *Olearia muelleri*, *Senna artemisioides* ssp *filiolia*, *Atriplex codonocarpa*, *A vesicaria*, *Sclerolaena cuneata*, *Cratystylis conocephala*, *Scaevola spinescens*, *Westringia cephalantha*, *Prostanthera grylloana*, *Acacia tetragonophylla*, *A. hemiteles*, *Eremophila oppositifolia* ssp *angustifolia*, *E. parvifolia* ssp *auricampa*, *E. scoparia*, *Eucalyptus lesouefii*, *E. salubris*, *Triodia scariosa* and *Exocarpos aphyllus*.

**Clearing Description** Kanowna Mines have applied to clear up to 200 ha within an application area of approximately 510 hectares for the purpose of mineral production, involving the excavation of an open pit and construction of waste dumps, roads and other mine infrastructure.

**Vegetation Condition** Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

**Comment** A site visit was conducted by the Assessing Officer on 27th October 2006. Vegetation sampling points used by Jims Seeds, Weeds & Trees were observed and vegetation type, representative species and vegetation condition were noted. The vegetation types identified by Jims Seeds, Weeds & Trees are an accurate description of the vegetation types present both in species make up, vegetation condition and classification according to Muir. Vegetation condition overall can be described as 'Very Good' according to the Keighery scale (Keighery, 1994). Vegetation shows obvious signs of disturbance from recreational activities, historical mining, exploration and rubbish dumping.

To avoid having to apply for extra permits during the construction and operation of the mine, Barrick (Kanowna) Ltd have applied for a larger area than what is estimated will be needed. The assessing officer does not consider this to be a risk to biodiversity conservation given that the vegetation types present are common in the bioregion

and the previous historical disturbances that have impacted on the existing vegetation. Conditions on the permit will require the permit holder to report how much vegetation is cleared in any calendar year for the life of the permit. Barrick (Kanowna) Ltd have committed to clearing the minimum amount of vegetation necessary to construct and operate the mine.

### 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 proposed clearing area falls within the Coolgardie IBRA Bioregion (GIS database). The region is characterised by an arid to semi arid climate, supporting Eucalypt woodlands, scrub heaths and samphire flats. The region is described as a biogeographic interzone, lending itself to high biodiversity particularly in *Acacia* and Eucalypt species, as well as ephemeral species in shrublands and valley floors. Major centres for biodiversity include Rowles lagoon, Banded Ironstone Formations, Fraser Range and Woodline Hills (CALM, 2002), none of which are located near this application.

Threats to the region include pastoral and mining activities, weeds, feral animals and inappropriate fire regimes (CALM, 2002). After a site visit to the area by the assessing officer it is considered that this area has been subject of past exploration and mining activities, recreational activities and rubbish dumping that have led to a degradation of the existing vegetation such that its condition is considered to be ranked as 'very good' (Vegetation structure altered, obvious signs of disturbance) using the Keighery Scale (Keighery, 1994).

The region is largely uncleared and a total of 1.8 million hectares (9.9%) is in conservation estate. Fifty six of the bioregion's 106 Beard Vegetation Associations are preserved within the conservation estate. Seventeen Beard Vegetation Associations considered to be at risk are not represented within the conservation estate (CALM, 2002). However, neither of the two Beard Vegetation Associations within the application area are considered to be at risk and both are represented in conservation estate.

All populations of vertebrate species of fauna are considered to be in degraded or fair condition and are likely to decline further. More than 40% of the regions original mammalian fauna is regionally extinct (CALM, 2002). No species of conservation significance are likely to be impacted by the proposed clearing. A fauna assessment by ATA Environmental (2006) concluded that the proposed clearing area does not contain habitat that has high ecological significance.

Whilst the region can be considered to be biodiverse, there is no available evidence to show that the proposed clearing area has outstanding biodiversity values or is more biodiverse than other native vegetation in the region.

The Biodiversity Coordination Section of the Department of Environment and Conservation (DEC) provided the following advice on 30<sup>th</sup> November 2006 in regards to this principle (DEC, 2006a): 'DEC notes that DoIR's assessment report and the supporting documents supplied by the proponents have adequately demonstrated that the area under assessment does not represent an area of outstanding biodiversity or an area in need of special protection. Based on this information DEC concurs with the findings on DoIR's assessment report for Principle A regarding biodiversity.'

Based on the above, the proposed clearing is not likely to be at variance to this principle.

**Methodology** ATA Environmental (2006)  
CALM (2002)  
DEC (2006a)  
GIS Database: Interim Biogeographic Regionalisation of Australia - EA 18/10/00  
Jims Seeds, Weeds & Trees (2005)  
Keighery (1994).

#### (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**  
ATA Environmental (2006) undertook a Level 1 Fauna assessment of the application area in January 2006. This involved a desktop analysis of available datasets and literature review and a site visit to verify the desktop survey and to delineate fauna values present in the area. This fauna assessment was conducted according to the EPA's Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA, 2002).  
  
ATA Environmental's desktop assessment involved searches of the Western Australian Museum's online database (Faunabase) and the Department of Conservation and Land Management (now Department of Environment and Conservation) Threatened and Priority Species database (ATA, 2006). This search identified the following species that are of conservation significance and that may potentially occur in the application area:

Carnaby's White Tailed Black Cockatoo (S1 *Calyptorhynchus latirostris*), Red-tailed Phascogale (S1

*Phascogale calura*), Chuditch (S1 *Dasyurus geoffroii*), Slender-billed Thornbill (VU *Acanthiza iredalei iredalei*), Malleefowl (S1 *Leipoa ocellata*), Numbat (S1 *Myrmecobius fasciatus*), Great Egret (migratory species *Ardea alba*), Fork-tailed Swift (migratory species *Apus pacificus*), Rainbow Bee-eater (migratory species *Merops ornatus*), Carpet Python (S4 *Morelia spilota imbricata*), *Branchinella denticualta* (P1 a crustacean), *Jalmenus aridus* (P1 a butterfly), *Ogyris subbetetris petrina* (P1 a butterfly), Shy Heath-wren (P1 *Hylacola cauta whitlocki*), Western Rosella (P3 *Platycercus icterotis xanthogenys*), Australian Bustard (P4 *Ardeotis australis*), Crested Bellbird (P4 *Oreoica gutturalis gutturalis*), White-browed Babbler (P4 *Pomatostomus superciliosus ashbyi*) and Hooded Plover (P4 *Charadrius rubricollis*).

The ATA Environmental desktop risk assessment determined that the following species of conservation significance could potentially occur within the application area: Malleefowl (S1), Carnaby's White Tail Black Cockatoo (S1), Samphire Thornbill (P4), Chuditch (S1), Red-tailed Phascogale (S1), Numbat (S1) and Carpet Python (S4). A site visit of the area by ATA Environmental was conducted in January 2006 to specifically look for evidence of, or suitable habitat for, these species.

ATA Environmental (2006) report that following the site visit, Rainbow Bee-eaters and White-browed Babbler's were observed and only Malleefowl, Carpet Python, Western Rosella, Australian Bustard and Crested Bellbird could reasonably be expected to occur within the proposed clearing area based on habitat type and previous distribution.

In particular, ATA Environmental (2006) recommended that an area of suitable habitat within the proposed clearing area be grid searched for the presence of Malleefowl nesting mounds and that site staff involved in clearing activities be educated on the possible presence of Carpet Pythons so that any individuals observed can be relocated.

ATA Environmental conducted the grid search for Malleefowl nesting mounds within identified suitable habitat on 22<sup>nd</sup> June 2006. This involved three people systematically moving through the habitat at 8-12 m intervals. No malleefowl mounds were located during this intensive search and it is therefore considered highly unlikely that Malleefowl would be significantly impacted upon by the proposed clearing.

South West Carpet Pythons inhabit woodland areas at low densities and it is possible that Carpet Pythons may occur within the proposed clearing area. Given the large amount of available habitat, the loss of 200 ha is a very small percentage of the total habitat available for the species. It is not expected that the conservation of this species will be significantly impacted by the proposed clearing.

ATA Environmental (2006) reported the sighting of an Australian Bustard within the proposed clearing area in February 2006 by Barrick Kanowna staff, after their January 2006 site visit. The species has also been observed by mining operations staff north of the proposed clearing site. However, the proposed clearing area presents a very small fraction of similar habitat in the general area and therefore it is highly unlikely that the proposed clearing will significantly impact the conservation of this species.

Rainbow Bee-eaters, White-browed Babbler's, Western Rosella, Australian Bustard and Crested Bellbird are mobile and will quickly move from the area upon the commencement of clearing. Their conservation status is not likely to be impacted significantly by the proposed clearing.

The proposed clearing will result in the loss of sedentary species of less conservation significance, however given the large amount of available habitat outside of the clearing area, the loss of habitat will not significantly effect the biodiversity of the region on a broad scale.

The Biodiversity Coordination Section of the Department of Environment and Conservation (DEC) provided advice on the 30<sup>th</sup> November 2006 in regards to this principle (DEC, 2006a): 'DEC notes that ATA Environmental found that there is no evidence to suggest that the application area contains an ecosystem or ecosystem value that is of conservation significance from a faunal perspective (Barrick, 2006). Although a number of conservation significant fauna species may frequent the area as outlined in the supporting documents the area is unlikely to be a significant habitat for these species. This is demonstrated adequately in the information supplied by ATA Environmental, Barrick and site visit information provided by DoLR'.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

**Methodology** ATA Environmental (2006)  
DEC (2006a)  
EPA (2002)

**(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**

Available GIS databases do not identify any rare or priority flora species within the clearing permit application area. There are several records of Priority 1 species *Eremophila praecox* occurring within a 10 km radius of the application area (GIS Database).

A flora and vegetation survey was conducted in September 2005 by Jims Seeds, Weeds & Trees over 979 hectares (survey area) including the application area and surrounds. The initial report supplied by Jims Seeds, Weeds & Trees did not contain enough information to enable the assessing officer to adequately determine the proposal's impact to significant flora. Subsequently, Jims Seeds, Weeds & Trees included additional information to their report which was received on 27th October 2006. The final survey report was adequate to allow the assessing officer to complete the assessment.

The survey involved a desktop search of available databases to identify rare and priority flora species that are known to occur within a radius of approximately 50km from the survey area and a field investigation that involved traversing the survey area via vehicle, motorbike and on foot (Jims Seeds, Weeds & Trees, 2006).

Jims Seeds, Weeds & Trees studied aerial photography to identify obvious differences in vegetation types within the survey area. Where these vegetation types were observed in the field, the area was searched within a 50m radius and flora visually identified, including dominant species in each strata. It is estimated that approximately 90% of flora species were observed during the survey (Jims Seeds, Weeds & Trees, 2006).

Jims Seeds, Weeds & Trees conducted a risk assessment of the likelihood of encountering rare and priority flora species based on their known habitat. Where this habitat was observed in the field the vegetation was inspected specifically to identify any threatened flora that may be present. The survey did not identify any rare species as gazetted under the Wildlife Conservation (Rare Flora) Notice 2006 or Priority species as listed by the Department of Environment and Conservation (Jims Seeds, Weeds & Trees, 2006).

It was recognised by Jims Seeds, Weeds & Trees that the survey followed a particularly dry winter and therefore not all ephemeral species would have been observed (Jims Seeds, Weeds & Trees, 2006). Several of the conservation significant species identified by Jims Seeds, Weeds & Trees in their desktop search of DEC's and WAHERB threatened flora database are annual herbs. It cannot be determined therefore, if these species are present within the application area due to the dry winter.

The Biodiversity Coordination Section of the Department of Environment and Conservation (DEC) provided the following advice on the 30<sup>th</sup> November 2006 in regards to this principle (DEC, 2006a) 'Based on the available information provided by the applicant and the site assessment information provided by the Department of Industry and Resources it appears unlikely that this proposal will impact on Declared Rare Flora'.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	DEC (2006a) Jims Seeds, Weeds & Trees (2006) GIS database: Declared Rare and Priority Flora List - CALM 1/7/05
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**(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.**

<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b> A search of available databases by the Assessing Officer reveals that there are no Threatened Ecological Communities (TECs) within the application area (GIS database). The nearest TEC is located approximately 140 km to the south east (Woodline Communities).
	A vegetation survey over the application area by Jims Seeds, Weeds & Trees conducted in September 2005 identified 5 vegetation communities (Jims Seeds, Weeds & Trees, 2006). None of these vegetation communities are considered to be threatened ecological communities or ecological communities of conservation significance as outlined in 'A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions' (CALM, 2002).

The Biodiversity Coordination Section of the Department of Environment and Conservation (DEC) has provided the following advice in regards to this principle (DEC, 2006a) 'Based on the available information provided by the applicant and the site assessment information provided by the Department of Industry and Resources it appears unlikely that this proposal will impact on Threatened Ecological Communities'.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	CALM (2002) DEC (2006a) GIS database: Threatened Ecological Communities - CALM 12/4/05 Jims Seeds, Weeds & Trees (2006)
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(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**

	Pre-European area (ha)	Current extent (ha)	Remaining	Conservation Status	Pre-european % in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Coolgardie	12912208*	12707623*	98.5*	Least Concern**	9.7 (9.9)*
City of Kalgoorlie/Boulder	9542443***	Unknown	N/A	N/A	N/A
Beard veg assoc. (state)					
- 9	240510*	239898*	99.8*	Least Concern**	1.3 (1.3)*
- 468	592024*	592023*	100*	Least Concern	4.3 (4.3)*

\* Shepherd et al. (2001) updated 2005

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

\*\*\* GIS database

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct

Probably no longer present in the bioregion

**Endangered\***

<10% of pre-European extent remains

#### Vulnerable\*

10-30% of pre-European extent exists

#### Vulnerable Depleted\*

>30% and up to 50% of pre-European extent exists

Depicted  
Least concern

>50% pre-European extent exists and subject to little or no degradation over a

>85% pre-European extent exists and subject to little or no degradation.

At a regional level, the Coolgardie IBRA Region remains at 98.5% of its pre-european vegetation extent. According to the 'Bioregional Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment 2000), these values give the region a Conservation Status of "least concern".

The proposed clearing area falls within the City of Kalgoorlie - Boulder. There is no data as to the City's current vegetation extent.

Statewide, the vegetation associations as described by Beard (9 and 468) both remain at approximately 100% of their pre-european vegetation extent. According to the 'Bioregional Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment, 2002), these values give the vegetation type a Conservation Status of 'Least Concern'.

Based on the above, the proposed clearing is not at variance to this principle.

**Methodology** Department of Natural Resources (2002)  
GIS database: Local Government Authorities - DLI 8/7/04  
Shepherd et al (2001) updated 2005

(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 at variance to this Principle**

There are no watercourses or wetlands within the proposed clearing area (GIS database).

None of the vegetation types as described by Jims Seeds, Weeds & Trees (2006) within the proposed clearing area are associated with riparian areas. Furthermore, the groundwater is hypersaline ranging between 90,000 to 200,000 mg/L TDS (Barrick Kanowna Ltd, 2006) and is unlikely to be utilised by vegetation or be used by groundwater dependant ecosystems.

Based on the above, the proposed clearing is not at variance to this principle.

<b>Methodology</b>	Barrick Kanowna Ltd (2006) GIS database: Hydrography, linear - DOE 1/2/04 Jims Seeds, Weeds & Trees (2006)
<b>(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</b>	

<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b>
The application area experiences a very minor slope to the north (GIS database). During an inspection by the Assessing Officer on 27 <sup>th</sup> October 2006, the application area was observed to be generally flat, and existing open areas, including areas disturbed for exploration, were not subject to erosion. The clearing is for mining purposes and includes an open pit, waste rock stockpile and ROM pad. Therefore most clearing will not be susceptible to wind erosion. Barrick Kanowna Ltd have advised that levee banks will be constructed around the mining area to divert sheet flow during intensive rainfall events away from the cleared area and into existing drainage channels (Barrick Kanowna Ltd (2006)).	

Advice dated 19<sup>th</sup> December 2006 has been received from the Department of Agriculture and Food (DAFWA) in relation to this principle. DAFWA (2006) state: 'Provided adequate provision is made for the occasional surface flows, soil erosion is unlikely to occur as a result of the proposed clearing and mine development. Therefore it is unlikely that the proposed clearing will be at variance with principle (g) for soil erosion. Hypersaline groundwater may be encountered as pit depth increases. Should pit dewatering be required, safe disposal, possibly to the salt lakes to the north will need to be considered.'

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	Barrick Kanowna Ltd (2006) DAFWA (2006) GIS database: Topographic Countours, Statewide - DOLA 12/9/02
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<b>(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.</b>
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<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b>
The proposed clearing area is located approximately 3.1 km north east of Kurrawang Nature Reserve. The Nature Reserve features regrowth woodland following from timber harvesting carried out in the early part of the 20 <sup>th</sup> century. The reserve has been subject to previous mining disturbance in the past and is more likely to be at risk of degradation from recreational activities. The reserves management standard is described in A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (CALM, 2002) as Fair to Good (Fair: Biodiversity values and or management issues are poorly identified; resource degradation is occurring though retrievable – Good: major biodiversity issues effectively managed). It is not expected that the proposed clearing will impact on the reserve at such a distance.	

The Biodiversity Coordination Section of the Department of Environment and Conservation (DEC) advice on the 30<sup>th</sup> November 2006 in regards to this principle (DEC, 2006a) 'Based on the available information provided by the applicant and the site assessment information provided by the Department of Industry and Resources it appears unlikely that this proposal will impact on DEC Managed Conservation areas'.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	CALM (2002) DEC (2006a) Keighery (1994)
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<b>(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.</b>
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<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b>
The proposed clearing area does not fall within a Public Drinking Water Source Area (GIS database) and will therefore not effect the quality of drinking water in any such areas.	

The area receives approximately 268 mm rainfall per year, mostly in the winter months, although tropical summer patterns can bring heavy but brief rainfall events during the late summer months (BOM, 2006). The area is also subject to a pan evaporation rate of 2600 - 3000 mm/year (Luke et al, 1987) and has a gently undulating topography. There are no watercourses or waterbodies on site or in the immediate surrounds. For these reasons, there is little likelihood of surface run off during normal rainfall events and it is unlikely that the proposed clearing will lead to turbidity or sedimentation to waterbodies off site. Recharge into groundwater tables will be minimal.

According to information provided by Barrick Kanowna Ltd (2006), the groundwater in the proposed area is

hypersaline, with a concentration of 90,000 to 200,000 mg/L TDS. This is extremely poor quality groundwater and the loss of vegetation is not likely to cause the quality of the water to deteriorate further.

There are no known groundwater dependent ecosystems affected by the proposed clearing.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	Barrick Kanowna Ltd (2006) BOM (2006) GIS databases: Public Drinking Water Source Areas - DoE 7/2/06 Luke et al (1987)
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#### (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b>
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Given low annual rainfall of 268 mm/y (BOM, 2006), high evaporation rates of 2600 - 3000 mm/y (Luke et al, 2006), gently undulating topography and lack of standing waterbodies or watercourses (GIS databases), the area is highly unlikely to be subject to flooding.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

<b>Methodology</b>	BOM (2006) Luke et al (1987) GIS databases: Topographic Contours, Statewide - DOLA 12/9/02 Hydrography, linear - 1/2/04
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#### Planning instrument, Native Title, Previous EPA decision or other matter.

<b>Comments</b>	No submissions were received during the public comments period.
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There are two Native Title Claims over the area under application; WC98/027 and WC98/029. These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenement has been granted, and the clearing is for a purpose consistent with the tenement type, therefore the granting of a clearing permit is not a future act under the *Native Title Act, 1993*.

There are no known sites of Aboriginal Significance within the proposed clearing area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act, 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

There are no groundwater licences, works approvals or environmental licences current for this proposal (DEC, 2006b)

<b>Methodology</b>	GIS Database: Native Title Claims - DLI 7/11/05 Aboriginal Sites of Significance DEC (2006b)
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## 4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	200	Grant	<p>The proposal has been assessed against the clearing principles and the proposal has been found to be not at variance to principle e and f and not likely to be at variance to principles a, b, c, d, g, h, i and j.</p> <p>The assessing officer therefore recommends that the permit be granted subject to the following conditions.</p> <ol style="list-style-type: none"><li>1. The Permit Holder shall record the following for each instance of clearing:<ol style="list-style-type: none"><li>a) the location where the clearing occurred, expressed as grid coordinates using the Geocentric Datum of Australia 1994 coordinate system;</li><li>b) the size of the area cleared in hectares;</li><li>c) the method of clearing</li><li>d) the purpose of clearing,</li><li>e) the area rehabilitated in hectares and</li><li>f) the dates on which the area was cleared.</li></ol></li></ol>

2. The Permit Holder shall provide a report to the Director, Environment, Department of Industry and Resources by 31<sup>st</sup> January each year for the life of the permit setting out the records required under condition 1 of this permit in relation to clearing carried out between 1<sup>st</sup> January and 31<sup>st</sup> December the previous year. This report can be included as an addendum to the Annual Environmental Report.

3. The Permit holder shall rehabilitate any area cleared under this permit not required to remain open for the purpose of mineral production.

Explanatory note:

1. In this permit **Annual Environmental Report** means a report produced as a requirement of tenement conditions under the *Mining Act 1978*.

## 5. References

- ATA Environmental (2006). Fauna Assessment, Proposed Clearing Around the Janet Ivy Site, Version 1. Unpublished Report prepared for Placer Dome Pty Ltd. Perth, Western Australia.
- Barrick Kanowna Ltd (2006) Purpose Permit Application Janet Ivy Project. July 2006. Unpublished document supporting Purpose Permit Application.
- BOM (2006). Averages for KALGOORLIE. [http://www.bom.gov.au/climate/averages/tables/cw\\_012038.shtml](http://www.bom.gov.au/climate/averages/tables/cw_012038.shtml) Bureau of Meteorology, Australian Government.
- DEC (2006a) Biodiversity advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received 30/11/06. Biodiversity Coordination Section, Department of Environment and Conservation, Western Australia.
- DEC (2006b) Water Allocation/License Advice - Advice to Assessing Officer, Department of Industry and Resources. Department of Environment, Western Australia.
- DAFWA (2006) Land degradation assessment report. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received 19/12/06. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia.
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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.
- EPA (2002) Terrestrial Biological Surveys as an element of biodiversity protection. Position Statement No. 3. March 2002. Environmental Protection Authority.
- Jims Seeds, Weeds & Trees (2006). Vegetation Survey of the Janet Ivy Area (M26/447, M26/446, P26/2574, P26/2484, M26/629 & P26/2485), For Paddington Gold Pty Ltd (including addendum additions), October 2006. Prepared for Barrick Kanowna (formerly known as Paddington Gold Pty Ltd).
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Luke G.J, Burke K.L, O'Brien T.M. (1987) Evaporation Data for Western Australia. Department of Agriculture, 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, updated 2005. Department of Agriculture, Western Australia.

## 6. Glossary

### Acronyms:

<b>BCS</b>	Biodiversity Coordination Section.
<b>BoM</b>	Bureau of Meteorology, Australian Government.
<b>CALM</b>	Department of Conservation and Land Management, Western Australia.
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia.
<b>DA</b>	Department of Agriculture, Western Australia.
<b>DEC</b>	Department of Environment and Conservation
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DoE), Western Australia.
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia.
<b>DoE</b>	Department of Environment, Western Australia.
<b>DoIR</b>	Department of Industry and Resources, Western Australia.

<b>DOLA</b>	Department of Land Administration, Western Australia.
<b>EPA</b>	Environmental Protection Authority.
<b>EP Act</b>	Environment Protection Act 1986, Western Australia.
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System.
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia.
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI</b>	Rights in Water and Irrigation Act 1914, Western Australia.
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia.
<b>TECs</b>	Threatened Ecological Communities.

### **Definitions:**

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1      **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2      **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3      **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4      **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R        **Declared Rare Flora – Extant taxa** (= Threatened Flora = Endangered + Vulnerable): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X        **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1**    **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2**    **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3**    **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4**    **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1      **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2      **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3      **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4      **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need

	of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
P5	<b>Priority Five: Taxa in need of monitoring:</b> Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

**Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)**

EX	<b>Extinct:</b> A native species for which there is no reasonable doubt that the last member of the species has died.
EX(W)	<b>Extinct in the wild:</b> A native species which: <ul style="list-style-type: none"> <li>(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or</li> <li>(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.</li> </ul>
CR	<b>Critically Endangered:</b> A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
EN	<b>Endangered:</b> A native species which: <ul style="list-style-type: none"> <li>(a) is not critically endangered; and</li> <li>(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.</li> </ul>
VU	<b>Vulnerable:</b> A native species which: <ul style="list-style-type: none"> <li>(a) is not critically endangered or endangered; and</li> <li>(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.</li> </ul>
CD	<b>Conservation Dependent:</b> A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.