

# **Clearing Permit Decision Report**

### 1. Application details

1. Application details				
1.1. Permit application de	atails			
Permit application No.:	Permit application details			
Permit type:	5898/1 Purpasa Parmit			
	Purpose Permit			
1.2. Proponent details				
Proponent's name:	AngloGold Ashanti Australia Limited			
1.3. Property details				
Property:	Mining Lease 30/366			
. openg.	Mining Lease 39/366 Mining Lease 39/374			
	5			
	Mining Lease 39/375			
	Mining Lease 39/499			
Local Government Area:	Shire of Laverton			
Colloquial name:	Sunrise Dam Gold Mine			
1.4. Application				
Clearing Area (ha) No. 1	Frees Method of Clearing Fo	or the purpose of:		
275.89		ilings Storage Facility and associated activities		
1.5. Decision on applicat	-			
Decision on Permit Application:	Grant			
Decision Date:	9 January 2014			
2. Site Information				
2.1. Existing environmen	t and information			
-				
•	ive vegetation under application	and for the sub-sla of Mestern Assets "a True Desad		
Vegetation Description	Beard vegetation associations have been ma vegetation associations have been mapped w	apped for the whole of Western Australia. Two Beard within the application area:		
	89: Low woodland; mulga ( <i>Acacia aneura</i> )			
	389: Succulent steppe with open low woodland; mulga over saltbush			
	A flara and vagatation our way has been cond	usted over the application area by Matticke Consulting Dty		
	A flora and vegetation survey has been conducted over the application area by Mattiske Consulting Pty Ltd (Mattiske, 2013). This survey identified the following vegetation communities within the application			
	area (Mattiske, 2013):			
		craspedocarpa and Acacia ayersiana over Acacia		
	obovatus var. obovatus on sandy-loam soils.	ylla, Acacia burkittii, Sida calyxhymenia and Ptilotus		
	service fait coordide on sandy fourt solls.			
		acia aneura and Acacia ayersiana over Acacia ramulosa var.		
		eissii, Eremophila latrobei subsp. latrobei, Eremophila spp.,		
	Maireana spp., Atriplex vesicaria, Senna arte obovatus var. obovatus and Eragrostis eriopo	emisioides subsp. filifolia, Solanum lasiophyllum, Ptilotus		
	Service var. Osevalas and Eragiosis enope	ou on oundy four oono.		
		a and Acacia aneura over Grevillea sarissa subsp. sarissa,		
		nila latrobei subsp. glabra over Rhagodia drummondii and		
	denser patches of <i>Triodia</i> spp. on sandy-loan	11 30113.		
	A12: Low Woodland of Acacia ayersiana, Aca	acia ramulosa var. linophylla, Acacia aneura over Acacia		
		alyxhymenia, Maireana sedifolia, Eremophila latrobei subsp.		
	glabra, Dodonaea lobulata, Maireana pyrami obovatus over Triodia spp. on red clay-loam s	data over Solanum lasiophyllum, Ptilotus obovatus var.		
	obovatus over Thoula spp. On red Clay-10ams	30n3.		
		ted by Maireana sedifolia, Maireana pyramidata, Maireana		
		ional emergent Acacia ayersiana and Acacia aneura over		
	Acacia ? kaigooriiensis and Hakea preissii an	nd patches of Cratystylis subspinescens on clay loam soils.		
	E1: Low Open Woodland of Eucalvotus horis	tes, Brachychiton gregorii, Acacia aneura, Acacia		
		oisia hopwoodii, Eremophila longifolia, Eremophila		
	margarethae over Maireana spp., Ptilotus ob	ovatus var. obovatus, Solanum lasiophyllum, partothamnella		
	teucriiflora over Triodia species on red clay lo	pams.		
		Page 1		

Clearing Description	Sunrise Dam Project. Anglogold Ashanti Australia Limited (Anglogold) proposes to clear up to 275.89 hectares of native vegetation within a total boundary area of approximately 275.89 hectares for the purpose of a tailings storage facility and associated activities. The proposal is approximately 52 kilometres south of Laverton, in the Shire of Laverton.
Vegetation Condition	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994)
	То
	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994)
Comment	The vegetation condition was assessed by botanists from Mattiske (2013). The proposed clearing will allow for the extension of the existing Tailings Storage Facility (TSF) as well as supporting infrastructure.

### 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 application area falls within the Eastern Murchison (MUR01) subregion of the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by its internal drainage and extensive areas of elevated red desert sandplains with minimal dune development (CALM, 2002). Vegetation is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (CALM, 2002).

A flora and vegetation survey has been conducted over the application area by Mattiske (2013). A total of 80 plant taxa from 21 families were recorded within the application area (Mattiske, 2013). The vegetation communities recorded are well represented within the surrounding areas and are therefore not considered to be significant on a regional scale (Mattiske, 2013).

No Threatened or Priority Flora or Threatened or Priority Ecological Communities were recorded within the application area during the flora and vegetation survey (Mattiske, 2013).

A total of 19 introduced plant taxa were recorded within Sunrise Dam operational areas since 1994 (Mattiske, 2013). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey has not been undertaken over the application area. A database search indicates that there are approximately 43 bird, six invertebrate and two reptile species occurring within 10 kilometres of the application area (DEC, 2007 -). The diversity of avi-fauna species appears to be high; however this is likely to be attributed to the adjoining salt lake system. The remaining fauna diversity does not appear to be high. Given the vegetation within the application area is considered typical of the region (Mattiske, 2013), it is considered unlikely that the application area contains higher faunal diversity than the surrounding areas.

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

Methodology CALM (2002) DEC (2007 -) Mattiske (2013) GIS Database: - IBRA WA (Regions - subregions)

### (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 survey has been undertaken over the greater Sunrise Dam Gold Mine (SDGM) area including the application area (Ninox, 1994; 2005). The fauna habitats recorded were found to be typical of the area and not considered to be significant (Ninox, 1994; 2005).

The fauna surveys conducted by Ninox (1994, 2005) did not record any conservation significant fauna species. A database search recorded the following conservation significant species within 20 kilometres of the application area (DEC, 2007 -):

- Calidris ruficollis Red-necked Stint (Schedule 3 of Wildlife Conservation Act 1950 (WC Act) Birds protected under an international agreement)
- Falco peregrinus subsp. macropus Australian Peregrine Falcon (Schedule 4 of WC Act Other specially protected fauna)
- Merops ornatus Rainbow Bee-eater (Schedule 3 of WC Act)

These three species are highly mobile with large home ranges and are not likely to be significantly impacted by the proposed clearing. Based on the above the proposed clearing is not likely to be at variance to this Principle. Methodology Ninox (1994) Ninox (2005) DEC (2007 -) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, (c) rare flora. Comments Proposal is not likely to be at variance to this Principle According to available databases, there are no Threatened Flora within the application area (GIS Database). The flora survey undertaken by Mattiske (2013) did not identify any Threatened Flora species within the application area. Based on the above the proposed clearing is not likely to be at variance to this Principle. Methodology Mattiske (2013) GIS Database: -Threatened and Priority Flora (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 According to available databases there are no Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 260 kilometres northwest of the application area (GIS Database). No TECs were identified during the flora and vegetation survey conducted by Mattiske (2013). Based on the above, the proposed clearing is not likely to be at variance to this Principle. Methodology Mattiske (2013) GIS Database: - Threatened Ecological Sites Buffered Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area (e) that has been extensively cleared. Comments Proposal is not at variance to this Principle The application area is located within the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 99.73% of pre-European vegetation remains within the Murchison bioregion (Government of Western Australia, 2013). The vegetation within the application area has been broadly mapped as Beard vegetation associations (GIS Database): 18: Low woodland; mulga (Acacia aneura) 389: Succulent steppe with open low woodland; mulga over saltbush More than 99% of these two Beard vegetation associations remain within the Murchison bioregion (see below) (Government of Western Australia, 2013).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Murchison	28,120,587	28,044,823	~99.73	Least Concern	1.05
Beard vegetation as - State	sociations				
18	19,892,305	19,843,727	~99.76	Least Concern	2.13
389	642,357	640,469	~99.71	Least Concern	0.32
Beard vegetation as - Bioregion	sociations				
18	12,403,173	12,363,252	~99.68	Least Concern	0.37
389	493,977	492,089	~99.62	Least Concern	0.42

At a local context, the proposed clearing is adjacent to an existing TSF. It does not appear to be a remnant of native vegetation or form a linkage between areas of significant vegetation (GIS Database).

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

- Methodology Government of Western Australia (2013)
  - GIS Database:
  - IBRA WA (Regions Subregions)
  - Lake Carey 50CM Orthomosaic ? Langate 2006

## (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 permanent watercourses or wetlands mapped within the application area (GIS Database).

Some minor creek channels exist within the application area but only flow following sporadic rainfall events (Mattiske, 2013). Mattiske (2013) has advised that vegetation occurring within these creek channels only form a small part of the application area, and that there are larger areas of creek line vegetation in the surrounding areas. The potential impacts to creek line vegetation are not considered to be significant.

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

Methodology Mattiske (2013) GIS Database: - Hydrography - Linear

# (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

### **Comments** Proposal may be at variance to this Principle

The application area intersects the Carnegie, Gundockerta, Kirgella and Rainbow land systems (GIS Database):

Carnegie Land System - salt lakes with fringing saline flats and dunes. Lack of slope renders most of this system generally not susceptible to soil erosion (Van Vreeswyk et al., 1994).

Gundockerta Land System - extensive gently undulating plains on deeply weathered greenstone with stony lag, less extensive alluvial plains with duplex soil profiles and occasional rises of greenstone. May be susceptible to water erosion, particularly in areas where perennial shrub cover is substantially reduced and/or the soil surface is disturbed (Van Vreeswyk et al., 1994).

Kirgella Land System - extensive sandplain, with scattered granite outcrop, supporting mainly spinifex hummock grasslands and mulga and mallee shrublands. Sands may become unstable immediately following fires; regrowth after rains usually restores stability (Van Vreeswyk et al., 1994).

Rainbow Land System - hardpan plains supporting mulga shrublands. This system is generally not susceptible to soil erosion (Van Vreeswyk et al., 1994).

	Of these land systems, Gundockerta is the most likely to be susceptible to soil erosion. The potential impacts of soil erosion may be minimised by the implementation of a staged clearing condition.			
	Based on the above the proposed clearing may be at variance to this Principle.			
Methodology	Van Vreeswyk et al. (1994) GIS Database: - Rangeland Land Systems			
	regetation should not be cleared if the clearing of the vegetation is likely to have an impact on ironmental values of any adjacent or nearby conservation area.			
Comments	<b>Proposal is not likely to be at variance to this Principle</b> The proposed clearing is not located within a conservation area (GIS Database). The nearest conservation area is an unnamed C Class Nature Reserve (Crown Reserve 46847), which is located approximately 103 kilometres to the west of the application area (GIS Database).			
	Based on the above the proposed clearing is not likely to be at variance to this principle			
Methodology	GIS Database: - DEC Tenure			
(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 application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).			
	There are no permanent watercourses or water bodies within the application area (GIS Database). There are some minor creek channels but these only flow following sporadic rainfall events (Mattiske, 2013). Given the infrequent flow of these drainage lines, the proposed clearing is not likely to significantly impact surface slow.			
	The application area is approximately one kilometre east of Lake Carey, a naturally occurring salt lake. The Lake is approximately 75,000 hectares in area and for months at a time forms a dry, hypersaline lake bed (AngloGold, 2004). The proposed clearing is for the extension of an existing TSF and associated infrastructure. The TSF will be expanded to the south, south-east and east. There is only marginal clearing proposed that is closer to Lake Carey then the existing cleared areas. It is therefore considered unlikely that the proposed clearing would have a significant impact on the water quality of Lake Carey.			
	Based on the above, the proposed clearing is not likely to be at variance to this Principle.			
Methodology	AngloGold (2004) Mattiske (2013) GIS Database: - Public Drinking Water Source Areas			
	regetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the ce or intensity of flooding.			
Comments	<b>Proposal is not likely to be at variance to this Principle</b> The application area is located within the Lake Carey catchment area (GIS Database). Given the size of the area to be cleared (275 hectares) in relation to the size of the catchment area (11,378,213 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.			
	The application area experiences an arid climate with mainly winter rainfall (200 millimetres) (CALM, 2002). Based on an average annual evaporation rate of 3,200 millimetres (GIS Database), there is likely to be little surface flow during normal seasonal rains.			
	Based on the above the proposed clearing is not likely to be at variance to this Principle.			
Methodology	CALM (2002) GIS Database: - Evaporation Isopleths - Hydrographic Catchments			
Planning ins	strument, Native Title, Previous EPA decision or other matter.			
Comments	There is one Native Title Claim (WC2010/018) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining Page 5			

tenure has been granted in accordance with the future act regime of the Native Title Act 1993 and the nature of the act (i.e. 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 several Aboriginal Sites of Significance located within the application area. It is the proponent's responsibility to comply with the Aboriginal Heritage Act 1972 and ensure that no sites of Aboriginal significance are damaged though the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation (formerly the Department of Environment and Conservation) and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The amendment was advertised on 2 December 2013 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology GIS Database: - Native Title Claims - Registered with the NNTT

#### 4. References

AngloGold (2004) 04 Report to Society: Case Studies Australia, Biodiversity research at Lake Carey.

http://www.anglogold.com/subwebs/InformationForInvestors/reporttosociety04/values\_bus\_principles/environment/e\_ cs\_aus\_7\_2.htm (accessed 30 December 2013).

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

DEC (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx (accessed 23 December 2013).

Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Ninox Wildlife Consulting (Ninox) (1995) Survey Report - A Vertebrate Fauna Assessment of the Sunrise Dam Project Area. Unpublished Internal Document.

Ninox Wildlife Consulting (Ninox) (2005) Vertebrate Fauna Survey Results 2004 Sunrise Dam Gold Mine. Unpublished Internal Document.

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (1994) Technical Bulletin - An Inventory and Condition Survey of the North-eastern Goldfields, Western Australia, No. 87. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

### 5. Glossary

### Acronyms:

ВоМ	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community
	David O

### **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 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 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 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 Priority Five: Taxa in need of monitoring**: 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 Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- **EX(W)** Extinct in the wild: A native species which:

- (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
- (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.
- **CR Critically Endangered:** 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 Endangered: A native species which:

- (a) is not critically endangered; and
- (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU Vulnerable: A native species which:
  - (a) is not critically endangered or endangered; and
    - (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- **CD Conservation Dependent:** 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.