



1. Application details

1.1. Permit application details

Permit application No.: 383/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Harmony Big Bell Gold Operations

1.3. Property details

Property: M20/22
M20/21
M20/301
M20/202
M20/171
M20/256
M20/299
M20/354
M20/252
M20/78

Local Government Area:

Colloquial name: Cuddingwarra tenements

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard 18: Low woodland; mulga (<i>Acacia aneura</i>) (Shepherd et al. 2001).	The vegetation of the site comprises of a small section of association 18, located in the southern portion of the area under application. The proposed clearing (as identified by the proponent) is not within this association (TRIM REF: GD277).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The proposal is within a mining lease area, so is either currently subject to or surrounded by significant disturbance.
Vegetation association Beard 313: Succulent steppe with open scrub; scattered <i>Acacia sclerosperma</i> & <i>A. victoriae</i> over bluebush (Shepherd et al. 2001).	Vegetation under application (50ha) is located in mining tenement M20/252 within the Cuddingwarra mining area which is situated in the Murchison Mineral Field (Trim ref GD277). The nearest township is Cue, approximately 10km to the southeast (Harmony, 2002). The area under application occurs in the Austin Botanical District of the Murchison Region (Beard, 1990). The wider area primarily consists of low chenopod and mulga shrublands. No declared rare or threatened flora species were located during a Harmony Flora survey (2002). One habitat	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The proposal is within a mining lease area, so is either currently subject to or surrounded by significant disturbance. Observed during site visit: photograph of the area provided by the proponent (TRIM ref GD277), and confirmed by DoE site inspection (by Craig Scott and Nanette Schapel) with photographs on 30 November 2004 confirm the severe extent of historical disturbance including mining and pastoral grazing. (TRIM ref GD270, GD271, GD272, GD273, GD274 and GD275). Pastoral Leases - DOLA 10/01

type persisted in the area to be cleared, alluvial plain snakewood chenopod shrubland. The dominant species are *Acacia eremaea* (Snakewood) and *A. masliniana* (Spiny Snakewood) interspersed with *Atriplex bunburyana* (Silver Saltbush), *Maireana pyramidata* (Sago Bush), *Senna artemisioides* subsp. *helmsii* (Crinkled Senna) and *Scaevola spinescens* (Currant Bush). A rare flora database search by CALM (2000a) revealed no declared rare species, although 20 Priority Flora listed species are expected to occur in the Cue region.

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 Cuddingwarra site has been extensively mined and grazed (Austin Downs Station lease number 600) and is degraded. Site visit 30 November 2004 with DoE officers Craig Scott and Nanette Schapel, with Harmony officer Paul Rokich confirm (Harmony, NOI, 2002) the extent of historical disturbance (TRIM ref GD270, GD271, GD272, GD273, GD274 and GD275). Given this history, this site does not represent an area of significant biodiversity.

Methodology TRIM REF's GD270, GD271, GD272, GD273, GD274 and GD275.
Harmony NOI, 2002 (L160/88)
GIS Databases: Pastoral Leases-DOLA 10/01, Pre-European Vegetation-DA01/01.
Shepherd et al., 2001

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments **Proposal is not likely to be at variance to this Principle**

Harmony (2002) sought CALM advice on any specially protected or priority fauna that may occur in the area. CALM advice detailed *Macrotis lagotis*, *Leipoa ocellata* and *Egernia stokesii badia* (Schedule 1), *Falco peregrinus* (Schedule 4). Priority Taxa included *Burhinus grallarius* (P4), *Ardeotis australis* (P4) and *Lerista eupoda* (P1). Harmony (2002) conducted a fauna survey which did not encounter any of these species.

Methodology Harmony NOI, 2002
GIS Databases: Threatened Ecological Communities-CALM 15/07/03
CALM, 2002b

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, significant flora.

Comments **Proposal is not likely to be at variance to this Principle**

Harmony environmental officers carried out a flora survey that found no declared rare or priority flora species within the proposed area. The survey was conducted via foot traverses and a total of 23 species was identified in the subject area (Harmony NOI, 2002). CALM correspondence, dated April 2002 also showed that no records of rare flora were known from the location. Harmony (2002) states that 'any rare, threatened or priority flora found in the immediate and surrounding areas of the project area will be conserved where possible and ground traversed searches for further populations conducted. Any rare flora found will be reported to CALM to ensure their ongoing management'.

Methodology GIS Databases: Declared Rare and Priority Flora - CALM 13/08/04.
CALM, 2002a
Harmony NOI, 2002.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant ecological community.

Comments **Proposal is not likely to be at variance to this Principle**

No significant ecological communities occur within the Cuddingwarra project area (Harmony, 2002).

Methodology GIS Databases: Threatened Ecological Communities- CALM 15/07/2003, (Data pertaining to outlying mining tenements is limited and does not necessarily constitute a comprehensive listing of significant ecological communities of the area in question).

(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

The vegetation under application is part of Beard vegetation associations 313 and 18, which lies in the Shire of Cue in the Murchison Bioregion. There is greater than 50% of associations 313 and 18 remaining in Western Australia making it of least concern by the Bioregional Conservation Status standards.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation status**	Reserves/CALM-managed land,
%					
IBRA Bioregion - Murchison	28,206,195	28,206,195	100	Least concern	0
Shire - Cue	0	0	0	N/a	0
Beard Veg Type – 18	24,675,970	24,659,110	99.9	Least concern	4.8
Beard Veg Type - 313	77,838	77,838	100	Least concern	0

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

Methodology GIS Databases: Interim Biogeographic Regionalisation of Australia-EA 18/10/00, Local Government Authorities-DLI 08/07/04, Pre-European Vegetation-DA 01/01, Shepherd et al, 2001.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is not likely to be at variance to this Principle

The area under application lies within the Murchison River Catchment and Basin. There is one Wash Area and six minor, non-perennial watercourses as described by DoE, 2004.

Surface flow in the City of Chester area generally occurs after heavy rainfall and has sheet flow characteristics. There are no major drainage channels running through the area that will be impacted upon, with the closest channel being Wyah Pool and its associated drainage pathway, stretching from Milly Soak in the north to Lake Austin in the south (Harmony, 2002).

The historical landuse of the site would suggest that these minor watercourses would not represent an ecosystem of significant environmental value. Therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases: Hydrographic Catchments-Catchments DoE 03/04/03, Hydrography linear DoE 01/02/04. Harmony NOI, 2002.

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

Comments Proposal is not at variance to this Principle

The proponent intends to rehabilitate in accordance with Notice of Intent section 4.8 rehabilitation procedures. Given the extensive mining and grazing history of the land (Austin Downs Station lease number 600), the proposed clearing is not likely to increase land degradation of this site.

Methodology Harmony NOI, 2002.
GIS Databases: Salinity Risk LM 25-Dola 00, Acid Sulphate Soil Risk Map SC-DOE 01/02/04, Soils Statewide-DA 11/99, Pastoral Leases -DOLA 10/01.

(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 at variance to this Principle

The Cuddingwarra project area is not adjacent to any existing or proposed conservation areas.

Methodology GIS Databases: CALM Regional Parks-CALM 12/04/02, WRC Estates-WRC 5/99, Proposed National Parks FMP-CALM, 19/03/03, Register of National Estate-EA 28/01/03.

(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 at variance to this Principle

The area under application lies within the Murchison River basin and catchment.

There are 8 WRL bores within a the project area used by the proponent for mining activities. There are no proclaimed, gazetted or declared areas or catchments that this proposal may impact upon. The local water table appears to be around 10m below ground level (measured from the standing water tables in adjacent drill holes). The groundwater in this area is suitable for livestock (i.e less than 6000mg/L TDS). Water quality monitoring, using handheld salinity meters, will be conducted regularly to ensure that water quality remains below recommended levels for livestock. The groundwater in the Cuddingwarra area is typical of groundwater on the western side of Wyah Pool, with salinities in the region of 3,000 mg/L TDS(Harmony NOI, 2002).

Methodology GIS Databases: WRL Drawpoints-DOE, PWDSA data sets (priority areas gazetted WRC 24/05/02, priority areas-policy-WRC 01/11/02, protection zones-WRC 01/11/02, gazetted-WRC 01/11/02 and policy-WRC 01/11/02) and Public Drinking Water Source Areas (PWDSAs)DOE 01/06/04. Harmony NOI, 2002.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Comments **Proposal is not at variance to this Principle**
 Surface flow in the Cuddingwarra area generally occurs after heavy rainfall and has sheet flow characteristics. The project area has a semi-arid climate and an average annual rainfall of 225mm. Given the area of vegetation to be cleared is small, the land's history of pastoral grazing and mining, with the revegetation commitments, the proposed clearing is unlikely to increase the risks associated with flooding.

Methodology GIS Databases: FMD ARI Extent of Flooding and Floodway Limit-DOE 02/03, FMD Floodplain Map Index-DOE 02/03.

Planning instrument or other matter.

Comments **Proposal is not at variance to this Principle**
 The Shire of Cue have not indicated that there are any planning requirements/approvals that would affect the clearing. The concern of the Yamatji Marlpa Barna Baba Maaja Aboriginal Corporation is clarified by advice received from the State Solicitor's Office that indicate the granting of the permit would not be invalidated by the Native Title Act 1993.

Methodology Yamatji Marlpa Barna Baba Maaja Aboriginal Corporation, 2004 (TRIM Ref: IN19940)

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mining	Mechanical Removal	50	Grant	<p>50 ha within these tenements for Open cuts and infrastructure.</p> <p>The concern of the Yamatji Marlpa Barna Baba Maaja Aboriginal Corporation clarified by advice received from the State Solicitor's Office that indicate the granting of the permit would not be invalidated by the Native Title Act 1993.</p> <p>The assessing officer therefore recommends that the permit should be granted. The department provides the following advice:</p> <ol style="list-style-type: none"> 1) all sites affected by mining should be returned to a stable, non-erodible, and safe condition. 2) all sites should be restored to biologically sustainable ecosystems requiring minimum long term management. 3) rehabilitation should commence as soon as possible. 4) all topsoil of insignificant auriferous grade should be removed from the areas affected by mining and stored on temporary dumps. 5) stockpiled topsoil should be re-spread over disturbed areas at the completion of mining. 6) the area should then be contoured, ripped and revegetated with species native to the area or appropriate to the prevailing conditions. 7) rehabilitation progress should be monitored annually through Ecosystem Function Analysis techniques to determine revegetation success and remedial work undertaken as required.

5. References

- CALM (2002a) Declared Rare and Priority Flora advice. Advice to Harmony. Department of Conservation and Land Management, Western Australia. DoE TRIM ref GD251.
- CALM (2002b) Fauna advice. Advice to Harmony. Department of Conservation and Land Management, Western Australia. DoE TRIM ref GD251.
- Department of Environment (2004). Site visit to Cuddingwarra Project Area, example of disturbance (TRIM REF: GD270, GD271, GD272, GD273, GD274 and GD275).
- 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.
- Harmony, 2002 Big Bell Gold Operations Notice of Intent City of Chester Open-cut and Cuddingwarra Operations (TRIM REF: GD243).
- Harmony, 2004 Project Plan Rheingold, City of Chester (TRIM REF: GD277)
- Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, 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. Department of Agriculture, Western Australia.
- Yamatji Marlpa Barna Baba Maaja Aboriginal Corporation, 2004 Comments Regarding Application To Clear Native Vegetation – CPS362/1 (Trim Ref: IN19940)