



**1. Application details**

**1.1. Permit application details**

Permit application No.: 328/1  
 Permit type: Area Permit

**1.2. Proponent details**

Proponent's name: PMR Quarries P/L

**1.3. Property details**

Property: M70/715  
 M70/636  
 M70/239  
 Local Government Area: Town Of Kwinana

**1.4. Application**

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
10		Mechanical Removal	Mineral Production

**2. Site Information**

**2.1. Existing environment and information**

**2.1.1. Description of the native vegetation under application**

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Heddlie Vegetation Complex: - Cottlesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on the Limestone outcrops. (Heddlie et al, 1980)	The proposal includes clearing of 10 hectares of native vegetation for sand and limestone extraction.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Clearing description and vegetation condition obtained from site inspection conducted by DEC officers on 19 August 2005 and 20 February 2007. (DOC15884) The total amount of vegetation is not likely to amount to 10 hectares due to the numerous cleared areas within the approved area.
Beard vegetation association: - 998: Medium Woodland; Marri (Shephard et al. 2001)	Vegetation in the southern area under application Eucalyptus calophylla with scattered E. gomphocephala regrowth over an understorey comprising Banksia sp., Dryandra sp. Acacia sp. Hibbertia hypericoides and Xanthorrhoea sp. The vegetation in this portion of the applied area was burnt in the summer of 2005/2006 and therefore condition ratings are likely to be affected. Given the overstorey has generally remained intact and the regrowth of understorey species, vegetation is considered to be in good condition.		
	Vegetation in the remaining two applied areas has been recently cleared, however regrowth of Eucalyptus sp., Acacia sp., Macrozamia riedlei and Xanthorrhoea sp. is present. An accurate condition rating is unable to be obtained due to the recent clearing; at this time the condition is degraded, however given time the vegetation may have the		

ability to regenerate back to good condition.

### 3. Assessment of application against clearing principles

#### ~~(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.~~

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

Although a portion of the vegetation under application has been recently burnt, the overstorey has generally remained intact and understorey species are regrowing, and it is therefore considered to be in good condition. The remainder of the vegetation under application has been cleared, and with both understorey and overstorey species regrowing it has the potential to regenerate over time back to good condition.

The vegetation under application has been identified as containing habitat that could potentially support a range of native fauna species, including fauna of conservation significance. The vegetation is also considered to provide an important buffer and corridor that assists in the protection and maintenance of biological diversity by preventing the fragmentation of important conservation areas such as the Loda Nature Reserve and the nearby Bush Forever sites.

Given that the vegetation under application is in good condition, has the potential to support a range of native fauna species and provides ecological corridors it is considered that it may represent an area of high biological diversity.

**Methodology**      Site visit 19/08/05

#### ~~(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 at variance to this Principle**

During the site inspection, DoE officers identified mature Eucalyptus spp. within the applied area that had a range of hollows that could potentially provide suitable significant nesting habitat for avian or mammalian fauna species. A portion of these hollows may have been present in areas that have been recently cleared, and therefore the number of hollows present in the applied area may be less. Understorey vegetation within the area under application is in good condition and may provide habitat for a range of fauna, and therefore the proposed clearing may have an impact on the availability of fauna habitat in the local area. CALM (2005) advise that the database indicates there are no priority listed fauna species have been identified within the local area (5km radius of the application).

Western Wildlife (2006) conducted a Level 1 fauna assessment (desk-top study and site visit) for the uncleared areas and concluded that the 'native vegetation is likely to support a range of native fauna species including a number of species of Conservation Significance.' The native fauna that have the potential to occur within the applied area include up to 6 frog species, 37 reptile species, 79 bird species and 14 mammal species. Of the species potentially occurring within the applied area 40 are of conservation significance, and seven were observed during the fauna survey (Western Wildlife 2006). The applied vegetation is also part of an ecological link between the Bush Forever sites to the north and south, and also to other nearby vegetated remnants (Western Wildlife 2006).

During the fauna survey 7 bird species were observed, including 3 Priority fauna species (Harewood 2007). Carnaby's Black Cockatoo (EPBC Act Endangered) was recorded during the fauna survey is therefore highly likely to forage within the applied area. However, few large trees that may have potential nest hollows were observed and therefore this species is not likely to utilise the site for breeding (Western Wildlife 2006). Western Wildlife (2006) advised that the EPBC listed migratory Rainbow Bee-eater (*Merops ornatus*) is likely to be a common breeding visitor to the site, nesting in burrows dug into sandy ground or banks, however no active burrows were observed. Baudin's Black Cockatoo (EPBC Act Vulnerable), and the Fork-tailed Swift (EPBC Act Migratory) are also likely to visit the area for foraging.

The Quenda (Priority 5) is also likely to be common in areas with dense understorey, with most of the site likely to be suitable habitat for this species and the Brush Wallaby is likely to utilise the applied area as part of a larger range (Western Wildlife 2006).

Given that the vegetation under application has the potential to support a range of native fauna, with species of conservation significance observed during the fauna survey, and provides an ecological linkage between conservation reserves. It is therefore considered that the vegetation under application comprises significant habitat for indigenous fauna.

Conditions have been imposed on the permit requiring trapping and relocation of Quenda, and determination of hollow utilisation by fauna listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2005 and relocation of fauna if necessary.

**Methodology**      CALM (2005)

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

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

A review of the declared rare flora (DRF) and priority flora database has identified that there are no known significant flora recorded on-site or within the same vegetation complex in the local area (defined as a 5km radius). The nearest rare and priority flora species approximately 4-5km away within the Heddle et al (1980) vegetation Bassendean Complex - Central and South.

The site inspection confirmed that although the vegetation was in a good condition the understorey appeared to have evidence of impact from past land use practises. When considering the grazing and general absence of DRF and priority flora being identified in the local area it is considered unlikely that DRF or priority flora would be present in the area under application.

**Methodology** Heddle et al (1980)  
GIS Database - Declared Rare and Priority Flora List - CALM 01/07/05

**(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**

The area under application is within the same vegetation complex, approximately 900 metres from the Threatened Ecological Community (TEC). This TEC has been described as 26a Melaleuca huegellii - Melaleuca acerosa shrublands on limestone ridges (Government of Western Australia 2000). During the site inspection no Melaleuca species, which are the indicator species of TEC 26a, were observed. In addition the vegetation under application is Tuart dominated, and it is therefore not considered likely that this TEC would be present in the area under application.

**Methodology** Government of Western Australia (2000)  
GIS Database - Threatened Ecological Communities - CALM 12/4/05

**(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**

Heddle et al (1980) defines the vegetation under application as 'Cottesloe Complex - Central and South', of which there is 41.1% of pre-European vegetation remaining and which is considered to be depleted (Department of Natural Resources and Environment 2002). The vegetation under application is also classified as vegetation association 998 (Shephard et al. 2001), of which there is 35.9% of the pre-European extent and which is also considered to be depleted (Department of Natural Resources and Environment 2002).

The identified vegetation types have representations above the recommended minimum level of 30%, as recognised by both the EPA and the State Government (EPA, 2003; Department of Natural Resources and Environment, 2002). The vegetation under application is therefore not considered likely to be significant as a remnant in an area that has been extensively cleared.

	Pre-European area (ha)	Current extent (ha)	Conservation status***% in reserves/DEC- managed land	Remaining %
Swan Coastal Plain	1,529,235	657,450	43.0*	Depleted
Town of Kwinana	11,980	4760	39.7*	Depleted
Local Area (~10km radius)	~13,300	~7000	~53%	Least concern
Heddle vegetation complex				
Cottesloe Complex - C&S	44,995	18,474	41.1**	Depleted
Beard vegetation associations - 998				
	51,094	18,320	35.9*	Depleted

\* (Shephard et al. 2001)

\*\* (EPA, 2003)

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

**Methodology** Heddle et al. (1980)  
JANIS (1997)  
Shepherd et al. (2001)  
EPA (2003)  
(Kelghery 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 likely to be at variance to this Principle**

The area under application is located approximately 1000 metres south of a Resource Enhancement Wetland and is located 2700 metres west of another CCW. The nearest watercourse to the proposal is the Peel Main Drain which is located approximately 3500m to the east. Due to the distance to the nearest watercourse or wetland the area under application is not considered to be an environment associated with a wetland or watercourse.

**Methodology GIS Databases:**

Hydrography, linear (hierarchy) - DOE 13/4/05

Geomorphic Wetlands (Management Categories), Swan Coastal Plain - DOE 15/9/04

**(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**

There is a high risk of wind erosion of the Spearwood Dune system (State of Western Australia 2005) following the clearing of native vegetation on this site. The high erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation.

The proposed land use of area under application is a sand and limestone mine, therefore the above mentioned issues should be addressed and managed through the extractive Industries licence.

**Methodology State of Western Australia (2005)**

**(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 at variance to this Principle**

The area under application is 1km north of Bush forever site 349 and approximately 3km south of Bush forever site 346. Bush forever site 349 includes the Leda Nature Reserve 5km south of the area under application.

When considering Bush Forever sites are relatively small parcels of land, corridors to other conservation areas are critically important to reduce fragmented ecosystems (Government of Western Australia 2000). The area under application is considered part of a regionally significant 'continuously or largely continuous corridor' identified in the Bush Forever Study (Government of Western Australia, 2000). The vegetation under application was also identified through the Perth Biodiversity Project (Del Marco et al. 2004) as regionally significant as a Regional Ecological Linkage (Ecological Linkage #76). These types of regionally significant corridors are acknowledged as important in maintaining the environmental values of adjacent or nearby conservation areas.

The Cottesloe Complex - Central and South' currently has only (8.8%) vegetation (Heddlie et al 1980) in secure tenure with JANIS (1997) recommended that 15% of the pre-1750 distribution of each vegetation ecosystem should be protected in a comprehensive, adequate and representative reserve system.

Conditions have been imposed on the permit requiring the clearing be conducted in a staged approach, and the preparation and implementation of a rehabilitation management plan prior to clearing.

**Methodology Del Marco et al. (2004)**

Government of Western Australia (2000)

**(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**

Groundwater salinity in the local area is 500-1000 mg/L and there is a nil risk of Acid Sulphate Soils. The area under application is not located within a Public Drinking Water Source Area (PDWSA). Watercourses in the area include the Spectacles Wetlands and the Peel Main Drain, located approximately 2.8km to the east of the applied area.

The clearing of native vegetation from the site may result in a local rise in the groundwater table due to increased direct infiltration of rainwater; however the extractive industry licence issued by the Town of Kwinana requires a 2 metre vertical separation between the extractive works and the water table. Therefore it is not considered likely that the removal of native vegetation from site would result in a deterioration of surface water or groundwater quality.

**Methodology GIS Databases:**

**(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**  
 The area under application is located approximately 1000 metres south of a Resource Enhancement Wetland and is located 2.7km west of a Conservation Category Wetland (CCW). The nearest watercourse to the proposal is the Peel Main Drain which is located approximately 3.5km to the east. Due to the distance to the nearest watercourse or wetland is not considered likely that the removal of vegetation would cause or exacerbate the incidence of flooding.

**Methodology** GIS Databases:  
 GIS Databases:  
 Hydrography, linear (hierarchy) - DOE 13/4/05  
 Geomorphic Wetlands (Management Categories), Swan Coastal Plain - DOE 15/9/04

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

**Comments**  
 A current licence is held under Part V of the Environmental Protection Act for a mobile screening plant that can be moved to the location.  
 The Town of Kwinana had no objection to the proposal subject to the vegetation not being burnt after clearing.  
 A flora survey was conducted within the area under application; however the vegetation condition as described in the flora report is not consistent with observations made by DEC officers during the site visits. In addition, the flora survey does not appear to have been conducted in accordance with the EPA Guidance Statement 51; however a flora survey was not recommended by the DEC for this site.  
 The fauna survey appears to have been conducted in accordance with EPA Guidance Statement 58.  
 A portion of the applied area was cleared prior to the clearing permit being finalised, however regrowth native vegetation within these areas means that a clearing permit is still required.  
 The area of the clearing is part of the mining leases registered as numbers M70/239, M70/636, M70/715. Therefore, to the extent that the clearing is authorised under this lease, it is not a future act, regardless of whether or not native title has been partly or wholly extinguished by the grant of this lease.

**Methodology**

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Mineral Production	Mechanical Removal	10	The assessable criteria have been assessed and the clearing as proposed is at variance to Principle b and h. In addition, the clearing as proposed may be at variance to Principle a and g.  The assessing officer therefore recommends that the permit be granted with conditions requiring trapping and relocation of Quenda; determination of the presence of Rainbow Bee-eaters and burrows on site; and determination of hollow utilisation by fauna listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2005 and relocation of fauna if necessary. The assessing officer also recommends conditions requiring the clearing be conducted in a staged approach, and the preparation and implementation of a rehabilitation management plan prior to clearing.

**5. References**

DEC (2006) Biodiversity advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DolR), received DATE. Biodiversity Coordination Section, Department of Environment and Conservation, Western Australia.  
 Del Marco, A., Taylor, R., Clarke, K., Savage, K., Cullity, J. and Milos, C. (2004) Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region. Perth Biodiversity Project, Western Australian Local Government Association, Perth.  
 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 (2003) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the

Environmental Protection Act 1986. No 10 WA.  
 Government of Western Australia (2000) Bush Forever Volumes 1 and 2, Western Australian Planning Commission, Perth WA.  
 Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.  
 JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.  
 Kelghery, B.J. (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.  
 Site Visit 19/8/05, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC15884.  
 Smith, R., pers. comm. Senior Hydrologist, DoE.  
 State of Western Australia (2005) Agmaps Land Manager CD ROM.  
 Western Wildlife (2006) Abercrombie Road Quarry Extension Fauna assessment. DOC9647.

## 6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)