



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 6544/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Pilbara Sands Holdings Pty Ltd

### 1.3. Property details

Property: Mining Lease 45/1210  
Local Government Area: Town of Port Hedland  
Colloquial name: Pindan Sands Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
26.41		Mechanical Removal	Mineral Production and Associated Activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 11 June 2015

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation association are located within the application area (GIS Database):

**Beard vegetation association 647** : Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex.

**Beard vegetation association 589**: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.

A level 1 flora and vegetation survey was been conducted over the northern half of the application area by Coffey Environments (2011) and one broad vegetation type was recorded:

Scattered Shrubs to Open Shrubland of *Acacia colei* var. *colei* and *A. Tumida* var. *pilbarensis* to 2m over Low Open Shrubland to Low Shrubland of *A. stellaticeps* to 1m over Mid-dense Hummock Grassland of *Triodia epactia* to 1m on red/brown medium-grained sandy loam (Pindan Soils).

However, the vegetation type present within the application area is considered to be altered from its natural state due to its close location to the unmade gravel road and the frequent water spillage from dust suppression trucks (Coffey Environments, 2011).

Coffey Environments (2011) considers that based on a visual assessment of unburnt adjoining vegetation and an assessment of the burnt vegetation within the application area, the broad vegetation type expected to occur over much of the study area is:

Open Shrubland of *Acacia stellaticeps* over Mid-dense Hummock Grassland of *Triodia epactia* on red/brown medium to fine-grained sandy loams (Pindan Soils).

**Clearing Description** Pindan Sands Project  
Pilbara Sands Holdings Pty Ltd proposes to clear up to 26.41 hectares of native vegetation within a total boundary of approximately 26.414 hectares, for the purpose of mineral production and associated activities. The project is located approximately 12 kilometres south east of Port Hedland, in the Town of Port Hedland.

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

To:

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Note: There are small areas in the north west corner and north east corner of the application area that are completely degraded.

**Comment** The vegetation condition was derived from aerial imagery and a report prepared by Coffey Environments (2011) A flora survey was undertaken in September 2011 which was not the most appropriate time of the year (i.e. six weeks after summer rain) for conducting flora and vegetation surveys in the Pilbara. As a result approximately 60% of the species expected to occur within the application area were identified (Coffey Environments, 2011). The application area was also severely burnt by a wildfire

approximately one week before the survey and only small pockets of vegetation were still intact. These areas of remaining native vegetation were sampled, as well as adjoining areas that were considered to have intact native vegetation that would be representative of the fire affected areas, prior to the fire.

### 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 application area occurs within the Roebourne (PIL4) subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *Acacia pyriformis* and *Acacia inaequilatera*. Uplands are dominated by *Triodia* hummock grasslands (CALM, 2002). Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands (CALM, 2002). Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas (CALM, 2002).

A level 1 flora and vegetation survey has been conducted over the northern half of the application area by Coffey Environments (2011) in September 2011. The vegetation is likely to be consistent throughout the application area. A total of 38 flora species were recorded within the application area (Coffey Environments, 2011). The application area was subject to a wild fire a week prior to the flora survey being conducted, which could explain the low species diversity recorded (Coffey Environments, 2011).

According to available databases there are no threatened or priority ecological communities or Threatened flora species located within the application area (GIS Database; DPaW, 2014). Two Priority 1 flora species are known to occur within the local area (10 km radius); *Heliotropium muticum* and *Rothia indica* subsp. *australis*. *Eragrostis crateriformis*, a Priority 3 listed species, is also known from the local area (DPaW, 2014).

*Heliotropium muticum* was recorded from 23 locations and approximately 245 individual plants were recorded from within the application area (Coffey Environments, 2011). This species is a disturbance opportunist and is commonly recorded after fire or other disturbance (DEC, 2012). Given that the proponent has committed to rehabilitation activities following clearing, it is highly likely that this species will recover and any impacts will be temporary. No other priority flora species were recorded within the application area, however as the survey took place in September following a wildfire, only ~ 60% of the expected number of flora species were recorded (Coffey Environments, 2011). This being considered, the application area is adjacent to an existing operational mine site that is highly disturbed and areas of more suitable/potential habitat persist throughout the local area. Significant impacts to Priority flora species remain unlikely.

There are four invasive species (weed species) that may potentially occur within the application area; *Cenchrus ciliaris*, *Parkinsonia aculeata*, *Prosopis* sp. and *Salvinia molesta* (Coffey Environments, 2011). 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.

The Beard vegetation units present within the application area are well represented, as is the fauna habitat. The region has been well-surveyed in previous fauna assessments and the fauna assemblage predicted to occur within the application area is expected to be typical of the region (Coffey Environments, 2011). In addition to this, no core habitat for any species of conservation significance is present within the application area (Coffey Environments, 2011).

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

**Methodology**      CALM (2002)  
Coffey Environments (2011)  
DEC (2012)  
DPaW (2014)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Pre-European vegetation  
- Threatened Ecological Sites Buffered

#### (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 level 1 fauna survey has been conducted over the northern half of the application area by Coffey Environments (2011).

Coffey Environments (2011) identified one fauna habitat; Spinifex on Sandy Plain, which consists of Spinifex, dominated grassland on a sandy plain with scattered shrubs and it is highly likely that the vegetation is consistent throughout the entire application area.

The application area is adjacent to an existing operational mine site that is highly disturbed and areas of better quality vegetation persist throughout the local area (GIS Database).

A total of 12 conservation significant fauna species have been identified as potentially occurring within the application area, however, no core habitat for any of these species is present (Coffey Environments, 2011).

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

**Methodology** Coffey Environments (2011)  
GIS Database  
- Imagery

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

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

According to available databases, there are no Threatened Flora species known to occur within the local area (GIS Database; DPaW, 2014).

In addition to this, a flora survey of the northern half of the application area was conducted by Coffey Environments (2011) in September 2011 and no Threatened flora species were recorded (Coffey Environments, 2011). While this survey did occur following a wild fire, only two Threatened flora species are known to occur in the Pilbara; *Thryptomene wittweri* and *Lepidium catapycnon*. These species occur high in the Hamersley Ranges and are not expected to occur within the coastal plain of Port Hedland (Coffey Environments, 2011).

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

**Methodology** DPaW (2014)  
Coffey Environments (2011)  
GIS Database  
- Threatened and Priority Flora List

**(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 at variance to this Principle**

According to available datasets, there are no Threatened Ecological Communities (TECs) within the application area. There are only two known TECs in the Pilbara region. The study area is not expected to represent a TEC based on the vegetation composition of adjacent unburnt areas and other available sources of information obtained regarding the two known TECs from the Pilbara region (Coffey Environments, 2011).

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

**Methodology** Coffey Environments (2011)  
GIS Database:  
- Threatened Ecological Sites Buffered  
- Threatened and Priority Ecological Communities Buffers  
- Threatened and Priority Ecological Communities Boundaries

**(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 application area occurs within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 99.6% of the pre-European vegetation remains (see table below) (GIS Database; Government of Western Australia, 2013).

The vegetation within the application area has been mapped as Beard vegetation associations 647 and 589 (GIS Database). Both of which retain more than 97% of pre-European level of vegetation at a state and bioregional level respectively (Government of Western Australia, 2013). Given the amount of vegetation remaining in the local area and bioregion, the 500 hectares of vegetation under application is not considered to be significant as a remnant within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Pilbara	17,808,657	17,733,584	99.6	Least Concern	~ 8.4
Beard veg assoc. - State					

647	195,861	191,711	97.9	Least Concern	0.00
Beard veg assoc. – Bioregion					
647	195,860	191,711	97.9	Least Concern	0.00
Beard veg assoc. – State					
589	807,699	802,713	99.4	Least Concern	~ 1.6
Beard veg assoc. – Bioregion					
589	806,985	802,647	99.5	Least Concern	~ 1.6

\* Government of Western Australia (2013)

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

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

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2013)  
GIS Database:  
- IBRA WA (regions - subregions)  
- Pre-European Vegetation

**(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**  
According to available databases there are no permanent or perennial wetlands or watercourses mapped within the application area (GIS Database).

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

**Methodology** 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 is not likely to be at variance to this Principle**  
The application area intersects the Uaroo land system (GIS Database). This land system is characterised by broad sandy plains supporting shrubby hard and soft spinifex grasslands. This land system occasionally has some erosion evident in drainage tracts, however this land system is generally not susceptible to erosion (Van Vreeswyk et al., 2004). According to available databases there are no drainage tracts within the application area, therefore it is considered unlikely that the proposed clearing will cause appreciable land degradation (GIS Database).

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

**Methodology** Van Vreeswyk et al. (2004)  
GIS Database:  
- IBRA WA (Regions – Sub Regions)  
- Soils, statewide

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

**Comments** **Proposal is not likely to be at variance to this Principle**  
The proposed clearing is not located within a conservation area (GIS Database). The nearest conservation area is Mungaroona Range Nature Reserve, located approximately 115 kilometres south west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the environmental values of any conservation areas.

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**  
According to available databases, the application area is not located within a Public Drinking Water Source

Area (PDWSA) (GIS Database). The nearest PDWSA is the De Grey River Water Reserve which is located approximately 38 kilometres east of the application area (GIS Database).

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the De Grey River Water Reserve which is located approximately 38 kilometres east of the application area (GIS Database).

The groundwater salinity within the application area is between 1,000 – 3,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the proposed clearing is for 21.41 hectares within the Pilbara Groundwater Province (5,557,665 hectares); the proposed clearing is unlikely to result in any significant adverse impacts to groundwater quality.

There are no permanent wetlands or watercourses within the application area (GIS Database). It is therefore considered unlikely that the proposed clearing will impact on the quality of any surface water.

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

**Methodology** GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrography, linear  
- Public Drinking Water Source Areas (PDWSAs)  
- RIWI Act, Groundwater Areas

**(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**

Mean annual rainfall for Port Hedland (nearest recording site) is approximately 318 mm (BoM, 2015). The local area experiences a semi-desert-tropical climate with the highest rainfall falling between January to March (CALM, 2002; BoM, 2015). Much of this precipitation comes from local thunderstorms and cyclonic activity (Van Vreeswyk, et.al. 2004).

Based on an average annual evaporation rate of 3,400 millimetres (GIS Database), any surface water resulting from normal rainfall events is likely to be relatively short lived.

The application area is within the Port Hedland Coast catchment area which covers approximately 744,301 hectares (GIS Database). Given the size of the area to be cleared (78.43 hectares) in relation to the size of the catchment area, the proposed clearing is not likely to increase the incidence or intensity of flooding.

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

**Methodology** BoM (2015)  
CALM (2002)  
Vreeswyk et al. (2004)  
GIS Database:  
- Hydrographic Catchments – Catchments

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

**Comments**

There is one native title claim over the application area (WC2009/003) (GIS Database; DAA, 2015). However, the mining 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 no registered Sites of Aboriginal Significance located in the area applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, the Department of Parks and Wildlife 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 clearing permit application was advertised on 11 May 2015 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

**Methodology** DAA (2015)  
GIS Database:  
- Aboriginal Sites of Significance

## 4. References

- BoM (2015) Climate Statistics for Australian Locations. A Search for Climate Statistics for Port Hedland, Australian Government Bureau of Meteorology, Viewed 25 May 2015  
< [http://www.bom.gov.au/climate/averages/tables/cw\\_004032.shtml](http://www.bom.gov.au/climate/averages/tables/cw_004032.shtml)>.  
<<http://www.bom.gov.au/watl/evaporation/>>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- Coffey Environments (2011) Desktop Fauna, Flora and Vegetation Assessment, M45/1210 Great Northern Highway, Port Hedland. Coffey Environments Australia Pty Ltd, Burswood, Western Australia.
- DAA (2015) Aboriginal Heritage Inquiry System, Department of Aboriginal Affairs, Perth, viewed 6 March 2015  
< <http://maps.dia.wa.gov.au/AHIS2/>>.
- DEC (2012) CPS 5098/1 - Advice for Priority 1 Flora species *Heliotropium muticum* received from Department of Environment and Conservation, Species and Communities Branch - Advice received 20 July 2012.
- 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.
- DPaW (2014) NatureMap, Department of Parks and Wildlife, viewed 25 May 2015 <<http://naturemap.dec.wa.gov.au>>.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report) Current as of October 2012. 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.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia, Department of Agriculture, Western Australia.

## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DPaW and DER)
<b>DER</b>	Department of Environment Regulation, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DRF</b>	Declared Rare Flora
<b>DotE</b>	Department of the Environment, Australian Government
<b>DoW</b>	Department of Water, Western Australia
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia
<b>DSEWPaC</b>	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<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>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>s.17</b>	Section 17 of the <i>Environment Protection Act 1986</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

<b>T</b>	<b>Threatened species:</b> Specially protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora). Threatened Fauna and Flora are further recognised by the Department according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo <i>Calyptorhynchus latirostris</i> is specially protected under the <i>Wildlife Conservation Act 1950</i> as a threatened species with a ranking of Endangered. <u>Rankings:</u> CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild. EN: Endangered - considered to be facing a very high risk of extinction in the wild. VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
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- X Presumed Extinct species:**  
Specially protected under the Wildlife Conservation Act 1950, listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
- IA Migratory birds protected under an international agreement:**  
Specially protected under the Wildlife Conservation Act 1950, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.  
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
- S Other specially protected fauna:**  
Specially protected under the Wildlife Conservation Act 1950, listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P1 Priority One - Poorly-known species:**  
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
- P2 Priority Two - Poorly-known species:**  
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
- P3 Priority Three - Poorly-known species:**  
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
- P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:**
- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
  - (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
  - (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
- P5 Priority Five - Conservation Dependent species:**  
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.