Government of **Western Australia**
Department of **Mines and Petroleum**

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 5391/1
**Permit type:** Purpose Permit

### 1.2. Proponent details

**Proponent's name:** **Hamersley Iron Pty Ltd**

### 1.3. Property details

**Property:** Exploration Licence 47/1490
**Local Government Area:** Shire of Ashburton
**Colloquial name:** Gorge Bore Project

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 7.2 | | Mechanical Removal | Mineral Exploration and Associated Activities |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 24 January 2013

## 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 associations have been mapped within the application area (GIS Database):

29: Sparse low woodland; mulga, discontinuous in scattered groups; and

111: Hummock grasslands, shrub steppe; *Eucalyptus gamophylla* over hard spinifex.

A flora and vegetation survey of the application area was conducted by Pilbara Flora (2011) in May 2011. This survey identified the following five vegetation communities within the application area:

**Plains**

- Buffel Grass Plains with Scattered Low Trees;
- Buffel Grass Plains with Low Woodland;
- Spinifex Plains with Open Shrubland and Buffel Grass Infestation; and
- Spinifex Plains with Open Shrublands.

**Watercourse**

- Broad Creek (<30m wide) with Vegetated Creekbed; and
- Broad Creek (>50m wide) with Defined Creekbed.

**Clearing Description**

Hamersley Iron Pty Ltd has applied to clear up to 7.2 hectares of native vegetation within a 249 hectare boundary. The purpose of the proposed clearing is to conduct an exploration drilling program at Gorge Bore.

**Vegetation Condition**

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994);

To

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

**Comment**

The application area is located within the Pilbara region of Western Australia and is situated approximately 12 kilometres east south-east of Wittenoom.

## 3. Assessment of application against clearing principles

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

**Comments**

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

The proposed clearing is located approximately 12 kilometres east south-east of Wittenoom within the Fortescue subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by extensive salt marsh, mulga bunch grass, and short grass communities on alluvial plains in the east; River Gum woodlands fringing drainage lines; and extensive stands of River Gum and cadjeput *Melaleuca* woodlands around numerous permanent wetlands in the central Fortescue (CALM, 2002).

A flora and vegetation survey of the application area was conducted by Pilbara Flora (2011) in May 2011. This survey identified 79 plant taxa within the application area (Pilbara Flora, 2011). Pilbara Flora (2011) conducted a survey of a nearby, smaller area, which identified 81 plant taxa. The low number of plant taxa recorded within the application area is likely to be due to a large Buffel Grass infestation within the application area that bordered on being a lower strata monoculture in areas (Pilbara Flora, 2011).

According to available databases there are no Threatened or Priority Flora species within the application area (GIS Database). A flora and vegetation survey of the application area did not identify any Threatened or Priority Flora species (Pilbara Flora, 2011).

According to available databases there are no Threatened or Priority Ecological Communities within the application area (GIS Database).

One introduced flora species, *Cenchrus ciliaris*, was recorded within the application area during the Pilbara Flora (2011) flora and vegetation survey. Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. 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 conducted by Pilbara Flora (2011) in May 2011 identified three fauna habitats within the application area. These three habitats are widespread throughout the Pilbara and are not considered to be highly specialised habitat types (Pilbara Flora, 2011). The application area contains an extensive Buffel Grass infestation which is considered to be of low conservation value (Pilbara Flora, 2011). It is therefore considered unlikely that the application area will hold a great level of faunal biodiversity than other areas within the Pilbara.

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

**Methodology**

CALM (2002)
Pilbara Flora (2011)
GIS Database:
- IBRA WA (regions – subregions)
- Threatened Ecological Sites Buffered
- Threatened and Priority Flora

### (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 of the application area was conducted by Pilbara Flora (2011) in May 2011. This survey identified the following three fauna habitats within the application area (Pilbara Flora, 2011):

- Large roosting trees;
- Scree slopes with pebblestones of suitable size for the Western Pebble-mound Mouse; and
- Loamy sandy soils.

A desktop survey of the application area was conducted and, based on the habitats present, the following 12 conservation significant fauna species were identified as potentially occurring (Pilbara Flora, 2011):

- Peregrine Falcon (*Falco Peregrinus* – Schedule 4);
- Un-named blind snake (*Ramphotyphlops ganei* – Priority 1);
- Spectacled Hare-wallaby (*Lagorchestes conspicillatus* subsp. *leichardti* – Priority 3);
- Western Pebble-mound Mouse (*Pseudomys chapmani* – Priority 4);
- Un-named Skink (*Notoscincus butleri* – Priority 4);
- Striated Grass Wren (*Amytornis striatus* subsp. *striatus* – Priority 4);
- Australian Bustard (*Ardeotis australis* – Priority 4);
- Bush Stone-curlew (*Burhinus grallarius* – Priority 4);
- Grey Falcon (*Falco hypoleucos* – Priority 4);
- Star Finch (Western) (*Neochmia ruficauda* subsp. *clarescens* – Priority 4);
- Fork-tailed Swift (*Apus pacificus* – Migratory); and

- Rainbow Bee-eater (*Merops ornatus* – Migratory).

The majority of these conservation significant species are highly mobile and, should they occur within the area, are likely to egress away from any disturbance (Pilbara Flora, 2011). Additionally, all habitats within the application area are common locally and regionally (Pilbara Flora, 2011). It is therefore considered unlikely that the proposed clearing of 7.2 hectares of native vegetation will impact on the conservation of any conservation significant fauna species.

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

**Methodology** Pilbara Flora (2011)

**(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 within the application area (GIS Database).

A flora and vegetation survey of the application area conducted by Pilbara Flora (2011) 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** Pilbara Flora (2011)
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**
There are no known records of Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 50 kilometres west of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

**Methodology** GIS Database:
- Threatened Ecological Sites Buffered

**(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 is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 99.58% of the pre-European vegetation remains within the Pilbara bioregion (Government of Western Australia, 2011).

The vegetation within the application area has been broadly mapped as Beard vegetation associations (GIS Database):

29: Sparse low woodland; mulga, discontinuous in scattered groups; and

111: Hummock grasslands, shrub steppe; *Eucalyptus gamophylla* over hard spinifex.

Approximately 99.98% and 99.99% of Beard vegetation associations 29 and 111, respectively, remain within the Pilbara bioregion (see table on next page) (Government of Western Australia, 2011).

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in IUCN Class I-IV Reserves |
|---|---|---|---|---|---|
| IBRA Bioregion - Pilbara | 17,804,427 | 17,729,352 | ~99.58 | Least Concern | ~6.32 |
| Beard vegetation associations - State | | | | | |
| 29 | 7,903,991 | 7,900,200 | ~99.95 | Least Concern | ~0.29 |
| 111 | 762,964 | 762,326 | ~99.92 | Least Concern | ~5.46 |
| Beard vegetation associations - Bioregion | | | | | |
| 29 | 1,133,220 | 1,132,929 | ~99.98 | Least Concern | ~1.91 |
| 111 | 550,287 | 550,232 | ~99.99 | Least Concern | ~1.28 |

* Government of Western Australia (2011)
** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of vegetation in an area that has been extensively cleared.

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 (2011)
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 at variance to this Principle**
According to available databases there are no permanent wetlands or watercourses within the application area, however there are numerous minor non-perennial watercourses (GIS Database).

A flora and vegetation survey by Pilbara Flora (2011) identified two vegetation communities associated with non-perennial watercourses. These communities account for approximately 8.92% (22.2 hectares) of the application area (Pilbara Flora, 2011). While there may be some impact to these communities, the small scale (7.2 hectares) and low impact nature of the proposed clearing renders it unlikely to significantly impact upon vegetation associated with non-perennial watercourses. Potential impacts to natural water flow and vegetation growing in association with non-perennial watercourses may be minimised by the implementation of a watercourse management condition.

Based on the above, the proposed clearing is at variance to this Principle.

**Methodology** Pilbara Flora (2011)
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**
According to available databases the application area intersects the Boolgeeda and Urandy land systems (GIS Database).

The Boolgeeda land system is characterised by stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Urandy land system is characterised by stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex (Van Vreeswyk et al., 2004). Most of this land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

Due to the small scale and low impact nature of the proposed clearing, it is considered unlikely to cause appreciable land degradation.

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:
- Rangeland Land System Mapping

**(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 application area is located within the Hamersley Range National Park (1977 boundary) on the Register of National Estate (Non-statutory archive) and approximately 85 metres north east of Karijini National Park (GIS Database). The Munjina-Wittenoom Road acts as a barrier between the application area and Karijini National Park and, given the small scale (7.2 hectares) and low impact nature of the proposed clearing, the conservation values of Karijini National Park are considered unlikely to be impacted by the proposed clearing. However, high vehicle movement within the application area may increase the potential for spread of weeds in nearby areas and in to the National park. Potential weed spread as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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

**Methodology** GIS Database:
- DEC Tenure
- Register of National Estate

**(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 Marandoo Water Reserve located approximately 50 kilometres south west of the application area (GIS Database). At this distance it is considered unlikely that the proposed clearing will impact on the quality of water within the Marandoo Water Reserve.

The groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the small scale (7.2 hectares within a 249 hectare boundary) and the non-contiguous nature of the proposed clearing, it is considered unlikely that the proposed clearing will cause salinity levels within the application area to alter significantly.

There are no permanent wetlands or watercourses within the application area (GIS Database). The annual average rainfall for the application area is approximately 461.7 millimetres while the annual average evaporation rate is approximately 3,400 millimetres (BoM, 2013; GIS Database). Therefore, any water pooling on the surface as a result of cyclonic activity is likely to be relatively short lived. 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** BoM (2013)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

**(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 application area experiences a semi-desert tropical climate with an average annual rainfall of approximately 461.7 millimetres and an average annual evaporation rate of approximately 3,400 millimetres (CALM, 2002; BoM, 2013; GIS Database). Any water pooling within the application area is likely to be short lived and the proposed clearing of 7.2 hectares of native vegetation is considered unlikely to cause or exacerbate the incidence or intensity of flooding within the local area.

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

**Methodology** BoM (2013)
CALM (2002)
GIS Database:
- Evaporation Isopleths

### Planning instrument, Native Title, Previous EPA decision or other matter.

**Comments**

There is one Native Title Claim (WC11/6) over the area under application (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group. However, the 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 Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with 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 clearing permit application was advertised on 10 December 2012 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

**Methodology** GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Registered with the NNTT

## 4. References


BoM (2013) BoM Website - Climate Averages by Number, Averages for WITTENOOM www.bom.gov.au/climate/averages/tables.shtml (Accessed 10 January 2013)

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

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.

Government of Western Australia (2011) 2011 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.

Pilbara Flora (2011) Flora and Vegetation Survey for RC Drilling Areas at George Bore on E47/1490 and Native Vegetation Clearing Permit Supporting Information. Unpublished Report prepared for Rio Tinto Iron Ore dated August 2011.

Van Vreeswyk AME, Payne AL, Leighton KA & Hennig P, (2004). Technical Bulletin No. 92: An inventory and condition survey of the Pilbara region, Western Australia. Department of Agriculture, Western Australia.


## 5. Glossary

### Acronyms:

| | |
|---|---|
| **BoM** | 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 |

## Definitions:

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

**P1** **Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**P2** **Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**P3** **Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

**P4** **Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

**R** **Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

**X** **Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

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

**Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.

**Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.

**Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

**Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

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

**P1** **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

**P2** **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

**P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

**P4** **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

**P5** **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.