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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5697/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: *Iron Ore (Hamersley Range) Agreement Act 1963* – Mineral Lease 4SA (AML70/4)
Local Government Area: Shire of Ashburton
Colloquial name: Caliwingina Creek Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.5		Mechanical Removal	Mineral Exploration and Hydrogeological Investigations

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 September 2013

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 vegetation associations have been mapped for the entirety of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database): • 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*.	Hamersley Iron Pty Ltd has applied to clear 3.5 hectares within an application area approximately 8.4 hectares in size. Clearing will be undertaken to facilitate mineral exploration activities and hydrogeological investigations. Raised blade clearing will be undertaken where possible, with blade down clearing undertaken in areas of steep or rough terrain. The application area is located approximately 88 kilometres north northwest of the town of Tom Price.	The vegetation of the application area appears to be in good condition with only minor disturbance from past mineral exploration activities evident in the application area.	Vegetation condition assessed using aerial photographs of the application area.

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 is situated within the Hamersley subregion (PIL03) of Pilbara bioregion as described in the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This subregion is characterised by mountainous areas of Proterozoic sedimentary ranges and plateaux, dissected by gorges (Department of Conservation and Land Management, 2002). Mulga low woodland occurs over bunch grasses on fine textured soils in valley floors, with *Eucalyptus leucophloia* occurring over *Triodia brizoides* on the skeletal soils of the ranges (Department of Conservation and Land Management, 2002).

No targeted fauna surveys have been undertaken for the application area (Rio Tinto, 2010). Rio Tinto completed a desktop review and field survey of the Caliwingina Project Area, an 871.3 hectare exploration prospect which includes the application area, in 2009. This assessment determined that the fauna habitats present within the application area were widespread in nature (Rio Tinto, 2010). Whilst conservation significant fauna species could utilise the application area, it is unlikely the application area supports a high level of faunal diversity due to the widespread nature of the habitat types and the application areas small size.

No Threatened Ecological Communities or Priority Ecological Communities were recorded in the surveyed area (Rio Tinto, 2010). A total of 306 native vascular plant taxa from 142 genera belonging to 50 families were recorded within the survey area (Rio Tinto, 2010). *Acacia* was the most common genus within the survey area

with other species rich genera including *Ptilotus*, *Sida*, *Senna* and *Goodenia* (Rio Tinto, 2010). The suite of flora species recorded within the survey area was considered typical of the Pilbara region (Rio Tinto, 2010). No Threatened flora species were recorded within the survey area (Rio Tinto, 2010). Two Priority listed flora species; *Rhynchosia bungarensis* (Priority 4) and *Goodenia nuda* (Priority 4) were recorded within the survey area (Rio Tinto, 2010). No occurrences of *Rhynchosia bungarensis* and *Goodenia nuda* were recorded within the application area (Rio Tinto, 2010). Both species enjoy widespread distributions within the Pilbara region and it is unlikely the clearing of a 3.5 hectare area will adversely impact the conservation status or distribution of either species (Western Australian Herbarium, 2013).

Ten species of weed were recorded in the survey area; Ruby Dock (*Acetosa vesicaria*), Mexican Poppy (*Argemone ochroleuca*), Buffel Grass (*Cenchrus ciliaris*), Pie Melon (*Citrullus lanatus*), Couch Grass (*Cynodon dactlyon*), Prickly Lettuce (*Lactuca serriola*), Spiked Malvastrum (*Malvastrum americanum*), Stinking Passion Flower (*Passiflora foetida*), Whorled Pigeon Grass (*Setaria verticillata*) and Mimosa Bush (*Vachellia farnesiana*) (Rio Tinto, 2010). No occurrences of weed species were recorded within the application area (Rio Tinto, 2010). Care must be taken to ensure clearing activities do not introduce weed species to non-infested areas. Potential impacts to biodiversity 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 Department of Conservation and Land Management (2002)
Rio Tinto (2010)
Western Australian Herbarium (2013)
GIS Database:
-IBRA WA (Regions – Sub Regions)

(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.**

The following broad fauna habitat types occur in the survey area; Plains of *Corymbia hamersleyana* woodland over *Acacia* shrublands over *Triodia* hummock grasslands, Stony slopes of *Eucalyptus leucophloia* over *Acacia* scrubs over *Triodia wiseana* hummock grasslands and Major, moderate sized and minor flow lines supporting open woodland and scrubland riparian vegetation. The fauna habitats present within the survey area are generally widespread and abundant (Rio Tinto, 2010). The desktop review determined that 18 fauna species of conservation significance could occur in the survey area. While fauna species of conservation significance could utilise the application area, this area is unlikely to constitute significant fauna habitat for any conservation significant fauna species owing to the widespread nature of the identified fauna habitats and the small size of the application area.

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

Methodology Rio Tinto (2010)

(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 available databases determined that no occurrences of Threatened flora have been recorded within a 20 kilometre radius of the application area (GIS Database). No occurrences of Threatened flora were recorded in the surveyed area (Rio Tinto, 2010).

Two threatened flora species are known to occur within the Pilbara region; *Lepidium catapycnon* and *Thryptomene wittweri*. *Lepidium catapycnon* occurs in skeletal soils on hillsides and *Thryptomene wittweri* occurs in skeletal red stony soil, breakaways and stony creek beds (Western Australian Herbarium, 2013). A review of the application area using aerial photography and topographic contour mapping found that no suitable habitat for *Lepidium catapycnon* or *Thryptomene wittweri* appeared to exist in the application area (GIS Database). Therefore, it is not anticipated that these species will occur in the application area.

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

Methodology Rio Tinto (2010)
Western Australian Herbarium (2013)
GIS Database:
-Millstream 1.4m Orthomosaic – Landgate 2000
-Topographic contours, statewide properties

(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.**

A review of available databases determined that the closest Threatened Ecological Community (TEC) to the application area is the Themeda Grasslands on Cracking Clays TEC, which is situated approximately 47 kilometres to the southeast of the application area (GIS Database). No vegetation communities matching the description of a TEC have been recorded in the application area (Rio Tinto, 2010).

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

Methodology Rio Tinto (2010)
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 situated within the Hamersley sub-region of the Pilbara bioregion as defined within the IBRA (GIS Database). The application area is contained within Beard vegetation association 82 (GIS Database). This Beard vegetation association retains more than 99% of its pre-European extent for the Hamersley sub-region (see table below). Hence, the application areas vegetation does not represent a significant remnant of vegetation within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Land
IBRA Bioregion – Hamersley	5,634,726.83	5,610,205.04	~99.6	Least Concern	12.9
Beard veg assoc. – State					
82	2,565,901.27	2,553,217.02	~99.5	Least Concern	10.25
Beard veg assoc. – Bioregion					
82	2,177,573.9	2,165,235.04	~99.4	Least Concern	12.04

* 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 Properties

(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.**

Several ephemeral watercourses traverse through the application area (GIS Database). Consequently, it is expected that the proposed clearing activities will impact on riparian vegetation communities associated with these watercourses. Based on the above, the proposed clearing is at variance to this Principle.

The proposed activities will result in the clearing of only small areas of riparian vegetation, therefore it is considered unlikely the clearing activities will result in adverse impacts to the conservation status and distribution of riparian vegetation communities or the integrity of watercourses

Methodology GIS Database:
-Hydrography, linear properties

(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 is situated within the Newman and Boolgeeda land systems (GIS Database). The Newman land system is described as consisting of rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al, 2004). The Boolgeeda land system is described as consisting of stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al, 2004). The Boolgeeda land system is not prone to erosion and the Newman land system has experienced little erosion to date (Van Vreeswyk et al, 2004). The clearing of 3.5 hectares of vegetation is not expected to increase the incidence of erosion within these land systems given their inherent resilience to erosion and the small size of the area to be cleared.

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 not situated within or in close proximity to any conservation areas (GIS Database). The closest conservation area to the application area is the Class A Millstream Chichester National Park, which is situated approximately 47 kilometres to the north west of the application area (GIS Database).

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

Methodology GIS Database:
-DEC Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

A review of available databases determined that the application area is situated within the Priority 1 Millstream Water Reserve (GIS Database). Written advice from the Department of Water (DoW) indicated that clearing 3.5 hectares of native vegetation for the purpose of mineral exploration and hydrogeological investigation activities is unlikely to have an impact on groundwater quality, provided clearing activities are conducted in accordance with DoW guidelines and advice (DoW, 2013).

The application area intercepts several ephemeral watercourses (GIS Database). These watercourses would only be expected to flow during severe rainfall events, when the water flowing through these watercourses would be carrying a sediment load. Whilst the cleared areas might contribute additional sediment to surface water flows during significant rainfall events, it is not anticipated that adverse impacts to surface water quality would result from the proposed clearing activities. In addition, the proposed activities are temporary in nature and all ground disturbance associated with these activities will be rehabilitated at the end of the exploration programme's life. Therefore any additional sediment contribution to surface water flows caused by the clearing activities will be temporary in nature.

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

Methodology GIS Database:
-Public Drinking Water Source Areas
-Hydrography, linear properties

(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 is situated within the Fortescue River Catchment (GIS Database). The Fortescue River Catchment has an area of approximately 1,860,184 hectares and would experience flooding during significant rainfall events and cyclonic conditions. Considering the catchment areas natural propensity for flooding, it is unlikely the clearing of a 3.5 hectare area will increase the incidence or intensity of flooding within this catchment area.

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

Methodology GIS Database:
-Hydrographic catchments

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

Comments

There are two Native Title Claims (WC03/3 and WC99/14) over the area under application (GIS Database). These claims have been registered with the National Native Title Tribunal on behalf of the claimant group. 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 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 Regulation (formerly the Department of Environment and Conservation) and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

This clearing permit application was advertised on 22 July 2013 inviting submissions from the public. No submissions were received.

Methodology GIS Database:
-Aboriginal sites of significance
-Native Title Claims – Registered with the NNTT
-Native Title Claims – Determined by the Federal Court.

4. References

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

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 (2013) 2012 State-wide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

Rio Tinto (2010) Flora and Vegetation Survey for Exploration Drilling at Caliwingina Creek and Native Vegetation Clearing Permit Supporting Report.

Western Australian Herbarium (2013) Florabase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> Accessed July 2013.

Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) Technical Bulletin 92: An inventory and condition survey of the Pilbara region, 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.