



Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the Environmental Protection Act 1986.

PURPOSE OF THIS FORM

Section 38(1) of the Environmental Protection Act 1986 (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPA's General Guide on Referral of Proposals [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) of the EP Act by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats – hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

CHECKLIST

Before you submit this form, please check that you have:


Table with 3 columns: Description, Yes, No. Rows include: Completed all the questions in Part A (essential), Completed all applicable questions in Part B, Included Attachment 1 – location maps, Included Attachment 2 – additional document(s) the proponent wishes to provide (if applicable), Included Attachment 3 – confidential information (if applicable), Enclosed an electronic copy of all referral information, including spatial data and contextual mapping but excluding confidential information.

Following a review of the information presented in this form, please consider the following question (a response is optional).

Do you consider the proposal requires formal environmental impact assessment?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not sure
If yes, what level of assessment?	
<input type="checkbox"/> Assessment on Proponent Information	<input type="checkbox"/> Public Environmental Review

PROPONENT DECLARATION (to be completed by the proponent)

I, Andrew Thomson, declare that I am authorised on behalf of Mount Gibson Mining Limited to submit this form and further declare that the information contained in this form is true and not misleading.

Signature 	Name (print) Andrew Thomson
Position Chief Operating Officer	Company Mount Gibson Mining Limited
Date	14 th August 2014

PART A - PROPONENT AND PROPOSAL INFORMATION

(All fields of Part A must be completed for this document to be treated as a referral)

1 PROPONENT AND PROPOSAL INFORMATION

1.1 Proponent

Name	Mount Gibson Mining Limited (MGX)
Joint Venture parties (if applicable)	Not applicable
Australian Company Number (if applicable)	074 575 885
Postal Address (where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State)	Mount Gibson Mining Limited Level 1 2 Kings Park Road WEST PERTH WA 6005 Mount Gibson Mining Limited PO Box 55 WEST PERTH WA 6872
Key proponent contact for the proposal: <ul style="list-style-type: none">• name• address• phone• email	Mr Troy Collie Project Director - Environmental Approvals Mount Gibson Mining Limited Phone: 9426 7500 / 0437 816 209 Email: Troy.Collie@MtGibsonIron.com.au
Consultant for the proposal (if applicable): <ul style="list-style-type: none">• name• address• phone• email	Mr Stuart Hawkins Director / Consulting Scientist Globe Environments Australia Pty Ltd Phone: 0400 455 554 Email: Stuart.Hawkins@MtGibsonIron.com.au Stuart.Hawkins@GlobeEnvironments.com.au

1.2 Proposal

Title	Mount Gibson Iron Ore Mine & Infrastructure Proposal - Iron Hill Deposit
Description	<p>The Iron Hill deposit (the "Proposal") is proposed for mine development of the Iron Hill Deposit, located within the Mt Gibson Ranges in the Shire of Yalgoo, approximately 270km east-south-east of the City of Geraldton in Western Australia.</p> <p>The regional location of the Proposal is identified at Attachment 1 (Figures 1 and 2). The Proposal would operate as a satellite of the existing Extension Hill</p>

mining operations as part of the approved Mount Gibson Iron Ore Mine & Infrastructure project.

Development of the Proposal is expected to yield approximately 5 to 7 million tonnes of high-grade hematite iron ore.

The Proposal will occupy a spatial area of 75ha comprising the following mine infrastructure components:

- (a) Mine Pit for the excavation of the mineral resource;
- (b) Waste Rock Landform for the disposal of waste rock excavated from the Mine Pit; and
- (c) Support Infrastructure including rehabilitation stockpiles (vegetation, topsoil and subsoil for post-mining rehabilitation), internal mine roads, water storage dams, administration facilities, fuel storage, and workshop and maintenance facilities.

The location of the mine infrastructure components of the Proposal are identified at Attachment 1 (Figure 3).

The Proposal will continue to operate as an extension to the existing mining operations approved for the Mount Gibson Iron Ore Mine & Infrastructure project by Statement 753(WA Minister for Environment 2007). The excavated ore will be transported on the road and rail infrastructure approved for the Mt Gibson Ranges operations under the Statement 786 (WA Minister for Environment 2009). The existing infrastructure and facilities approved under Statement 753 and Statement 786 will be used to the extent necessary to support the development of the Iron Hill Proposal. The location of the existing infrastructure footprint approved under the Statement 753 is identified at Attachment 1 (Figure 2).

To avoid doubt, the following matters do not form part of this Proposal (i.e. exclusions):

- (a) the components of the Mt Gibson Iron Ore Mine & Infrastructure and Hematite Haulage Road & Rail Siding operations under Statement 753 and Statement 786 approvals;
- (b) any survey and/or investigation of a geological or geotechnical or environmental or hydrological or planning or heritage nature (including any potential impacts associated with

	<p>such surveys and/or investigations);</p> <p>(c) changes in asset ownership or land tenure; and</p> <p>(d) any approval, consent or agreement associated with mining and transport operations under the Statement 753 and Statement 786 approvals, surveys or investigations, or ownership or tenure.</p>
Extent (area) of proposed ground disturbance.	75ha
Timeframe in which the activity or development is proposed to occur (including start and finish dates where applicable).	2016 to 2018 (estimated)
Details of any staging of the proposal.	Not applicable
Is the proposal a strategic proposal?	No
<p>Is the proponent requesting a declaration that the proposal is a derived proposal?</p> <p>If so, provide the following information on the strategic assessment within which the referred proposal was identified:</p> <ul style="list-style-type: none"> • title of the strategic assessment; and • Ministerial Statement number. 	No
<p>Please indicate whether, and in what way, the proposal is related to other proposals in the region.</p>	<p>The Proposal will continue the existing Mt Gibson Ranges iron ore mine and infrastructure operations, as originally approved under Statement 753 (WA Minister for Environment 2007), for which MGX and Extension Hill Pty Ltd (EHPL) are joint Proponents. The potential and residual environmental impacts of those approved Mt Gibson Ranges mining operations are outlined in ATA (2006a), and assessed in EPA (2006a). The Proposal, as a satellite to the existing mining infrastructure, would be developed consistent with that under Statement 753, which includes ore processing facilities, workshop and maintenance facilities, administration facilities and a mine camp. No changes to the Statement 753 approval are considered necessary to enable the Proposal and more specifically on the approved MS753 development area as follows. MGM considers that its own and the requirements of EHPL can be accommodated within the Iron Hill proposal. This may include a proposal to relocate MGM's infrastructure if EHPL's final mine design requires it and on the basis that EHPL would conduct mining operations contemporaneously with MGM's hematite mining operations.</p> <p>The Proposal is also related to the road and rail</p>

	<p>infrastructure for the Mt Gibson Ranges mining operations under the Statement 786 approval (WA Minister for Environment 2009), for which MGX is the Proponent. The ore from Iron Hill will also be transported on the existing road and rail infrastructure developed under Statement 786. No changes to the Statement 786 approval are considered necessary to enable the Proposal.</p> <p>Additionally, the conditions of the Statement 753 approval were amended by Statement 889 (WA Minister for Environment 2012). Statement 889 amended Condition 13 (Fauna Management) and deleted Condition 15 (Performance Bond) of the Statement 753 approval. Statement 889 does not affect the area or activity of the Proposal authorised by the Statement 753 approval.</p>
<p>Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?</p>	<p>The Proposal occurs within Tenements M59/338, M59/454, M59/455, M59/526, M59/609 and G59/50 granted to EHPL under the <i>Mining Act 1978</i> (WA). MGX and EHPL have a commercial agreement which provides MGX access to the land for hematite mining and mineral exploration purposes.</p>
<p>What is the current land use on the property, and the extent (area in hectares) of the property?</p>	<p>The land tenure for the area of the Proposal is Mining Leases overlying a combination of Unallocated Crown Land and a Crown Reserve.</p> <p>The current land use for the area of the Proposal is mineral exploration and mining operations. There are no other current land uses for the area of the Proposal.</p> <p>The spatial extent of the Tenements M59/338, M59/454, M59/455, M59/526, M59/609 and G59/50 is 1,570ha.</p>

1.3 Location

Name of the Shire in which the proposal is located.	Shire of Yalgoo
For urban areas: <ul style="list-style-type: none"> • street address; • lot number; • suburb; and • nearest road intersection. 	Not applicable
For remote localities: <ul style="list-style-type: none"> • nearest town; and • distance and direction from that town to the proposal site. 	Tenements M59/338, M59/454, M59/455, M59/526, M59/609 and G59/50, located at the Mt Gibson Ranges approximately 90km east-south-east of the town of Perenjori.
Electronic copy of spatial data - GIS or CAD, geo-referenced and conforming to the following parameters: <ul style="list-style-type: none"> • GIS: polygons representing all activities and named; • CAD: simple closed polygons representing all activities and named; • datum: GDA94; • projection: Geographic (latitude/longitude) or Map Grid of Australia (MGA); • format: Arcview shapefile, Arcinfo coverages, Microstation or AutoCAD. 	Enclosed?: <input checked="" type="checkbox"/> Yes / No

1.4 Confidential Information

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	Yes / No <input checked="" type="checkbox"/>
If yes, is confidential information attached as a separate document in hard copy?	Yes / No Not applicable

1.5 Government Approvals

Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.		Yes / No <input checked="" type="checkbox"/>	
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, please complete the table below.		<input checked="" type="checkbox"/> Yes / No	
Agency/ Authority	Approval required	App'n lodged Yes / No	Agency/Local Authority contact(s) for proposal
Department of Mines and Petroleum (DMP)	Mining Proposal under s82A(2) of the <i>Mining Act 1978</i> (WA). Project Management Plan approval (amendment) under r3.13 of the <i>Mines Safety and Inspection Regulations 1995</i> (WA).	No	Contact: Mr Daniel Endacott Team Leader, Environment Division Phone: 9222 3204 Email: Daniel.Endacott@dmp.wa.gov.au Postal Address: 100 Plain Street EAST PERTH WA 6004
Department of Parks and Wildlife (DPaW)	Licence to Take Rare Flora under s23F of the <i>Wildlife Conservation Act 1950</i> (WA) and Licence to Take Specially Protected Fauna under r17(1) of the <i>Wildlife Conservation Regulations 1970</i> (WA)	No	Contact: Mr Murray Baker A/Area Manager, EMB Phone: 9219 9000 Email: Murray.Baker@dpaw.wa.gov.au Postal Address: Locked Bag 104 BENTLEY DELIVERY CENTRE WA 6983
Department of the Environment (DoE)	Approval of a Controlled Action under s133(1) of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (C'th)	No	Contact: Ms Panna Patel Phone: 1800 803 772 Postal Address: GPO Box 787 CANBERRA ACT 2601
Department of Water (DoW)	Amendment to Licence GWL166067 (DoW 2013) under s5C the <i>Rights in Water and Irrigation Act 1914</i> (WA) to include the Proposal area. * Licence to construct a groundwater well under	No	Contact: Ms Carolyn Hills A/Director Regions Phone: 6364 7600 Postal Address: PO Box K822

	s26D of the <i>Rights in Water and Irrigation Act 1914 (WA)</i> .		PERTH WA 6842
Department of Environmental Regulation (DER)	* Amendment to Licence 8495 (DER 2014) under the <i>Environmental Protection Act 1986 (WA)</i> for Category 64 Putrescible Landfill Site.	No	Contact: Ms Caroline Conway-Physick Environmental Officer Phone: 9964 0901 Postal Address: PO Box 72 GERALDTON WA 6531
Department of Aboriginal Affairs (DAA)	* Consent under s18 of the <i>Aboriginal Heritage Act 1972 (WA)</i>	No	Contact: Mr Peter Facey Director Advice and Approvals Phone: 1300 651 077 Postal Address: PO Box 3153 EAST PERTH WA 6892
Shire of Yalgoo	* Planning Approval under the Shire of Yalgoo Local Planning Scheme No. 2	No	Contact: Dr Ross Theedom Chief Executive Officer Phone: 9962 8042 Postal Address: 37 Gibbons Street YALGOO WA 6635

* Indicates that further consultation with the responsible authority may be necessary to determine if approval is required.

PART B - ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, by answering the questions contained in Sections 2.1-2.11:

- 2.1 flora and vegetation;
- 2.2 fauna;
- 2.3 rivers, creeks, wetlands and estuaries;
- 2.4 significant areas and/ or land features;
- 2.5 coastal zone areas;
- 2.6 marine areas and biota;
- 2.7 water supply and drainage catchments;
- 2.8 pollution;
- 2.9 greenhouse gas emissions;
- 2.10 contamination; and
- 2.11 social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

- (a) the source of the information; and
- (b) the currency of the information.

2.1 Flora and Vegetation

2.1.1 Do you propose to clear any native flora and vegetation as a part of this proposal?

[A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act (Environmental Protection (Clearing of Native Vegetation) Regulations 2004)]. Please contact the Department of Environment and Conservation (DEC) for more information.

(please tick) Yes **If yes**, complete the rest of this section.

No **If no**, go to the next section

2.1.2 How much vegetation are you proposing to clear (in hectares)?

The Proposal area contains 70ha of native vegetation that will require clearing to enable implementation of the Proposal. A further 5ha area has previously been cleared by mineral exploration approved under the *Mining Act 1978* (WA).

2.1.3 Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

Yes No **If yes**, on what date and to which office was the application submitted of the DEC?

2.1.4 Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

Yes

No

If yes, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

The area of the Mt Gibson Ranges have been subject to numerous flora and vegetation surveys/assessments over more than a decade, the combination of which form a sound basis to assess the potential environmental impacts of the Proposal to flora and vegetation.

The reports listed below are provided on the compact disc appended to this referral document:

- (a) ATA Environmental (2004) *Targeted Search at Mt Gibson for the Declared Rare Flora Darwinia masonii*. Report to Mount Gibson Mining Limited. Report 2004/227. Version 1. December 2004.
- (b) ATA Environmental (2006b) *Targeted Survey at Mt Gibson for a new Lepidosperma sp. Mt Gibson*. Report to Mount Gibson Mining Limited. Report 2006/090. Version 2. August 2006.
- (c) ATA Environmental (2006c) *Mt Gibson Magnetite Project Supplementary Vegetation and Flora Surveys*. Report to Mount Gibson Mining Limited. Report 2005/149. Version 2. March 2006.
- (d) Bennett Environmental Consulting Pty Ltd (2000) *Flora and Vegetation of Mt Gibson*. Report prepared for Mt Gibson Iron Limited. December 2000.
- (e) Botanic Gardens and Parks Authority (2010) *Darwinia masonii and Lepidosperma gibsonii Conservation and Restoration Research*. Report prepared by Miller B and Barrett M of Botanic Gardens and Parks Authority for Mount Gibson Mining Limited and Extension Hill Pty Ltd. October 2010.
- (f) Borger J and Nicholls I (2013) *Survey of Proposed Drill Lines in Tenement M59/339 at Extension Hill*. Report prepared for Extension Hill Pty Ltd. August 2013.
- (g) Coffey Environments Pty Ltd (2008) *Location of Darwinia masonii (DRF) Associated with Phase 1 Drill Pads – Extension Hill*. Report prepared by de Kock PL and Scheltma M of Coffey Environments Pty Ltd for Asia Iron Australia Pty Ltd. February 2008.
- (h) E. A. Griffin & Associates (2005) *Numerical Analysis of Floristic Data in Mt Gibson Area*. Report to ATA Environmental. December 2005.
- (i) Globe Environments Australia Pty Ltd (2014) *Iron Hill Deposit Assessment of the Threatened Taxa Category for Darwinia masonii using IUCN (2012) Criteria*. Report prepared by Hawkins S of Globe Environments Australia Pty Ltd for Mount Gibson Mining Limited. Revision D. July 2014.
- (j) Maia Environmental Consultancy Pty Ltd (2014) *Mt Gibson ranges Targeted Darwinia masonii Survey*. Report prepared by Haycock R and Cox C of Maia Environmental Consultancy Pty Ltd for Mount Gibson Mining Limited. Revision 2. February 2014.
- (k) MBS Environmental (2013) *Targeted Flora Survey: Extension Hill Hematite Project, Midwest Region, Western Australia - Iron Hill and Gibson Hill Prospect Areas*.

Report prepared by Wiseman K of MBS Environmental for Mount Gibson Mining Limited. July 2013.

- (l) Mount Gibson Mining Limited and Extension Hill Pty Ltd (2014a) *Mason's Darwinia (Darwinia masonii) Recovery Plan*. Revision 0. June 2014.
- (m) Mount Gibson Mining Limited and Extension Hill Pty Ltd (2014b) *Lepidosperma gibsonii Recovery Plan*. Revision 0. June 2014.

2.1.5 Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site?

Yes

No

If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

A search of DPaW records for the Proposal area has been undertaken as part of the flora and vegetation surveys referred to above.

2.1.6 Are there any known occurrences of rare or priority flora or threatened ecological communities on the site?

Yes

No

If yes, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

The EPA's objective for Flora and Vegetation is to maintain the representation, diversity, viability and ecological function at the species, population and community level (EPA 2013a).

Flora surveys undertaken in the area of the Mt Gibson Ranges have identified the following conservation significant flora taxa declared as either "Rare Flora" under the *Wildlife Conservation Act 1950 (WA)* (WA Minister for Environment 2013a) or classified by DPaW as "priority" (DPaW 2013a):

- (a) *Darwinia masonii* (Rare Flora);
- (b) *Eucalyptus synandra* (Rare Flora);
- (c) *Lepidosperma gibsonii* (Rare Flora);
- (d) *Acacia cerastes* (P1);
- (e) *Allocasuarina tessellata* (P1);
- (f) *Chamelaucium* sp. Yalgoo (P1);
- (g) *Grevillea scabrida* (P3);
- (h) *Micromyrtus trudgenii* (P3);
- (i) *Podotheca uniseta* (P3); and
- (j) *Persoonia pentasticha* (P3).

Mapping identifying the recorded locations of the above conservation significant flora taxa in the vicinity of the Mt Gibson Ranges are identified at Attachment 1 (Figures 4 and 5).

Of the above conservation significant flora taxa, the Proposal coincides with records of:

- (a) *Darwinia masonii* (Rare Flora); and
- (b) *Lepidosperma gibsonii* (Rare Flora).

An assessment of the potential impact of the Proposal to each of the above conservation significant flora taxa is summarised below:

***Darwinia masonii* (Rare Flora)**

Darwinia masonii is a shrub that has been recorded only from the area of the Mt Gibson Ranges, with a recorded population of 17,818 individuals (ATA 2004; Coffey 2008; Maia 2014; MBS 2013; Globe Environments 2014). *Darwinia masonii* has been assessed by DPaW as meeting the threat category of "Vulnerable" using the criteria of the International Union for Conservation of Nature (IUCN) (DPaW 2008a). *Darwinia masonii* is also listed as a "Threatened Species" of flora under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th) (DoE 2014a). The *Darwinia masonii* Interim Recovery Plan (IRP) (DEC 2008a) reported that the total recorded population when the IRP was prepared in 2008 comprised 14,315 mature plants.

The impact of the Proposal to *Darwinia masonii* is unavoidable as it coincides with the proposed area of the Mine Pit, which cannot be relocated as the ore resource is in a fixed location. Based on the most recent records (Globe Environments; Attachment 4), the Proposal may affect up to 1,262 individual plants. The reduced abundance and distribution related to development of the Proposals would equate to a cumulative reduction estimated at 22% of the total recorded population, noting that Statement 753 approves the clearing of 15% of the total recorded *Darwinia masonii* population. However, as part of the IRP, a population census of the species is currently being conducted and all plant records made in 2014 would be used during any future environmental assessment.

Whilst the Proposal would result in an increase in the proportion of the known population of *Darwinia masonii* taken, as outlined by Globe Environments (2014), the effect of the Proposal would not be significant to an extent that it would change the threat category of "Vulnerable" currently applying to *Darwinia masonii* under the IUCN (2012) criteria. Whilst the Proposal is not expected to increase its threatened taxa category ranking for *Darwinia masonii* under the IUCN (2012) criteria, the impact of the Proposal to *Darwinia masonii* may require the consideration of environmental offsets as outlined within relevant Government guidance documents (Government of Western Australia 2011; EPA 2008; EPA 2006b).

The EPA's objectives for the key environmental factor of Flora and Vegetation can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Darwinia masonii*.

***Lepidosperma gibsonii* (Rare Flora)**

Lepidosperma gibsonii is a sedge that has been recorded only from the area of the Mt Gibson Ranges and the surrounding plains. Recent surveys have increased the recorded population of *Lepidosperma gibsonii*, from the previously recorded 17,615 individuals (as outlined in EPA 2006a) to approximately 60,000 individuals (DPaW 2014a). *Lepidosperma gibsonii* has been assessed by DPaW as meeting the threat category of "Vulnerable" using the IUCN criteria (DPaW 2008b).

The impact of the Proposal to *Lepidosperma gibsonii* is unavoidable as it coincides with the area of the Mine Pit, which cannot be relocated as the mineral resource is in a fixed

location. The Proposal will reduce the abundance of *Lepidosperma gibsonii* by approximately 1% of the total population records (MGX & EHPL, 2014b).

Currently, it is estimated that the effect of the Proposal, along with the approved Mt Gibson Ranges mining operations, would reduce the plant's abundance by an amount from 9,029 individuals (15% of the total population records) to 9,892 individuals (16% of the total population records). However, the cumulative impact by the full development of the approved Mt Gibson Ranges mining operations and the Proposal is not expected to be environmentally significant to *Lepidosperma gibsonii*, noting that the total reduction is notably less than the original magnitude estimated at approximately 47% of the known population records, as outlined in EPA (2006a). The effect of the Proposal would not be expected to change the threat category of "Vulnerable" applying to *Lepidosperma gibsonii* when assessed using the IUCN (2012) criteria.

Consequently, whilst *Lepidosperma gibsonii* is an environmentally significant flora taxon, the effect of the Proposal to *Lepidosperma gibsonii* is not expected to be environmentally significant. The EPA's objectives for the key environmental factor of Flora and Vegetation can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Lepidosperma gibsonii*.

The Proposal would also clear a variety of other flora taxa which are not of listed conservation significance due to their broad regional distributions. Having regard to the broad regional distributions of such flora taxa, the impact of the Proposal to other flora taxa is not expected to be environmentally significant.

The 75ha area of the Proposal contains 70ha of native vegetation, comprising four vegetation units that will require clearing to enable its implementation. The remaining 5ha has previously been cleared by historical and recent mineral exploration approved under the *Mining Act 1978* (WA). The Proposal would extend the clearing of native vegetation by the Mt Gibson Ranges mining operations to 1,405ha, representing a 6% increase in the total area of clearing. The broader area of the Mt Gibson Ranges is covered by native vegetation, with the greater balance of the Mt Gibson Ranges being outside the area of the existing Mt Gibson Ranges mining operations and the Proposal. The Proposal will clear parts of each of the mapped areas of these four vegetation units with each vegetation unit having a broader distribution across the Mt Gibson Ranges (i.e. not restricted to the Proposal and the existing Mt Gibson Ranges mining operations).

The cumulative reduction caused by the Proposal and the existing Mt Gibson Ranges mining operations will be less than a total of 15% of the mapped area for three of those vegetation units (M1, T3, W4), with the cumulative effect to the remaining vegetation unit (T9) being up to approximately 73% (from 68% to 73%). Whilst the increased proportional impact to vegetation unit T9 may be further considered, this vegetation unit has a broad regional spatial extent (approximately 400ha) with more than 100ha to be retained within areas not approved or planned for disturbance. Having regard to the extent of native vegetation across the broader Mt Gibson Ranges, and the distribution of vegetation units beyond the area of the Proposal, the EPA's objectives for the key environmental factor of Flora and Vegetation can be met to the extent that the Proposal is not expected to result in a significant detrimental effect to the representation or ecological function of native vegetation.

The Proposal area does not coincide with any Threatened Ecological Community listed under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th).

The Proposal coincides with 72ha of the DPaW-classified "priority ecological community" (PEC) for the "Mount Gibson Range vegetation complexes (banded ironstone formation)" (DPaW 2014b). The DPaW-classified PEC covers a total land area of 2,732ha, of which 933ha (34%) coincides with the area of the approved Mt Gibson Ranges mining operations. The DPaW-classified PEC does not correlate to any defined environmental values (e.g. vegetation unit boundaries) and, as such, the significance to the PEC area can only be considered in terms of the land area proposed to be cleared. The Proposal would increase the land area that coincides with the DPaW-classified PEC by 72ha from 933ha (34%) to 1,005ha (37%). Having regard to the extent of the PEC across the Mt Gibson Ranges, the Proposal is not expected to result in a significant detrimental effect to the representation or ecological function of the DPaW-classified PEC.

2.1.7 If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site? (You will need to contact the Bush Forever Office, at the Department for Planning and Infrastructure)

Yes

No

If yes, please indicate which Bush Forever Site is affected (site number and name of site where appropriate).

2.1.8 What is the condition of the vegetation at the site?

As outlined by ATA (2006c) the vegetation of the Proposal area is generally considered to be in a "Good" to "Excellent" condition.

2.2 Fauna

2.2.1 Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick)

Yes

If yes, complete the rest of this section.

No

If no, go to the next section.

2.2.2 Describe the nature and extent of the expected impact.

The EPA's objective for Terrestrial Fauna is to maintain the representation, diversity, viability and ecological function at the species, population and assemblage level (EPA 2013a).

Fauna surveys undertaken in the area of the Mt Gibson Ranges (refer Section 2.2.3 below) have identified the following conservation significant fauna taxa declared as either "Specially Protected Fauna" under the *Wildlife Conservation Act 1950* (WA) (WA Minister for Environment 2013b) or classified by DPaW as "priority" (DPaW 2013b):

- (a) *Idiosoma nigrum* (Specially Protected Fauna);
- (b) *Leipoa ocellata* (Specially Protected Fauna);
- (c) *Cacatua leadbeateri* (Specially Protected Fauna);
- (d) *Egernia stokesii* (Specially Protected Fauna);
- (e) *Falco peregrinus* (Specially Protected Fauna);
- (f) *Aganippe castellum* (P4);

- (g) *Hylacola cauta whitlock* (P4);
- (h) *Oreoica gutturalis gutturalis* (P4); and
- (i) *Pomatostomus superciliosus ashbyi* (P4).

Mapping identifying the recorded locations of the above conservation significant fauna taxa in the vicinity of the Mt Gibson Ranges are identified in Attachment 1 (Figure 6).

Of the above conservation significant fauna taxa, the Proposal coincides with records of:

- (a) *Idiosoma nigrum* (Specially Protected Fauna);
- (b) *Leipoa ocellata* (Specially Protected Fauna);
- (c) *Cacatua leadbeateri* (Specially Protected Fauna); and
- (d) *Falco peregrinus* (Specially Protected Fauna).

An assessment of the expected impact of the Proposal to each of the above conservation significant fauna taxa is summarised below:

***Idiosoma nigrum* (Specially Protected Fauna)**

Idiosoma nigrum (Shield-backed Trapdoor Spider) has a linear distribution greater than 700km, extending from south of Perth to north of Geraldton (DPaW 2014c). Assessment by DoE using the IUCN (2012) criteria identified that *Idiosoma nigrum* meets the category of "Vulnerable" due to its restricted area of occupancy (<20km²) (DoE 2013), however, the distribution data identified by DPaW (2014c) identifies a much broader area of occupancy. *Idiosoma nigrum* is also listed "Threatened Species" of fauna under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th) (DoE 2014b).

The Proposal is expected to impact a limited number of *Idiosoma nigrum*. The Proposal coincides with sixteen records of active *Idiosoma nigrum* burrows (i.e. 16 burrows each containing a live individual). A total of 86 active burrows of *Idiosoma nigrum* have been recorded at the Mt Gibson Ranges (Biologic 2014a). Noting the Biologic (2014a) survey area focussed only on part of the Mt Gibson Ranges (including the area of the Proposal) and the inconspicuous nature of the burrows, it is likely that *Idiosoma nigrum* has a broader distribution than currently recorded, both within the area of the Proposal and across the Mt Gibson Ranges.

As outlined by Biologic (2014a), the density of *Idiosoma nigrum* burrows was noted to be low compared to other recorded locations in the mid-west region, indicating that the Mt Gibson Ranges is not a key habitat for this taxon.

The Proposal can be expected to increase the cumulative impact to *Idiosoma nigrum*, however, the extent of impact from the existing and approved Mt Gibson Ranges mining operations was not previously quantified.

Having regard to the recently recorded low density of *Idiosoma nigrum* burrows at the Mt Gibson Ranges, and the distribution of this taxon across the Mt Gibson Ranges and the broader region, the impact of the Proposal to *Idiosoma nigrum* individuals and its habitat is not expected to be environmentally significant, so the Proposal would not change the threat category of "Vulnerable" applying to *Idiosoma nigrum* when assessed using the IUCN (2012) criteria. The EPA's objectives for the key environmental factor of Terrestrial Fauna can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Idiosoma nigrum*.

***Cacatua leadbeateri* (Specially Protected Fauna)**

The Proposal coincides with two records of the Specially Protected Fauna taxon *Cacatua leadbeateri* (Major Mitchell's Cockatoo, a bird).

DPaW (2014d) identifies *Cacatua leadbeateri* as having a linear distribution within Western Australia at more than 1,500km, extending from its western coast to the South Australia border. The broader distribution of *Cacatua leadbeateri* also includes South Australia, Northern Territory, Queensland, New South Wales and Victoria (IUCN 2014a).

A total of 27 records of *Cacatua leadbeateri* have been recorded at the Mt Gibson Ranges and the surrounding plains, with most records being from the plains to the east of the Mt Gibson Ranges.

The records within the area of the Proposal (from Terrestrial Ecosystems 2012) indicates *Cacatua leadbeateri* may be a visitor to the area during the survey period, rather than resident to the area (i.e. not identified as a nesting site). Based on these records, and the mobility of this taxon, the Proposal is not expected to impact any live individuals of *Cacatua leadbeateri*. The Proposal would clear certain vegetation that may be potentially suitable for foraging and nesting habitat for *Cacatua leadbeateri*, with the 70ha proposed for clearing to increase the maximum permissible clearing for the Mt Gibson Ranges mining operations by approximately 6% to 1,405ha.

Having regard to the broad distribution of potential *Cacatua leadbeateri* habitat recorded across the Mt Gibson Ranges and the wider region, whilst *Cacatua leadbeateri* is an environmentally significant fauna taxon, the effect of the Proposal to *Cacatua leadbeateri* is not expected to be environmentally significant. The EPA's objectives for the key environmental factor of Terrestrial Fauna can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Cacatua leadbeateri*.

***Falco peregrinus* (Specially Protected Fauna)**

The Proposal coincides with one record of the Specially Protected Fauna taxon *Falco peregrinus* (Peregrine Falcon, a bird). DPaW (2014e) identifies *Falco peregrinus* as having a linear distribution within Western Australia of more than 2,500km. Within Australia, *Falco peregrinus* occurs within all states and territories, and at the global level has been recorded on all continents (IUCN 2014b).

A total of four records of *Falco peregrinus* have been recorded at the Mt Gibson Ranges, of which one record coincides with the area of the Proposal (from Terrestrial Ecosystems 2014). The record from within the area of the Proposal indicates this taxon to be a visitor to the area during the survey period, rather than resident to the area (i.e. not a nesting/roosting site), noting this taxon was not recorded within the Proposal area previously (Terrestrial Ecosystems 2012). The Proposal is therefore not expected to affect any live individuals of *Falco peregrinus*.

Having regard to the broad distribution of potential *Falco peregrinus* habitat recorded across the Mt Gibson Ranges and the wider region, whilst *Falco peregrinus* is an environmentally significant fauna taxon, the effect of the Proposal to *Falco peregrinus* is not expected to be environmentally significant. The EPA's objectives for the key environmental factor of Terrestrial Fauna can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Falco peregrinus*.

***Leipoa ocellata* (Specially Protected Fauna)**

The Proposal coincides with two inactive nest mounds of the Specially Protected Fauna taxon *Leipoa ocellata* (Malleefowl, a bird). The Proposal does not coincide with any record of active *Leipoa ocellata* nest mounds.

Leipoa ocellata has been recorded across all mainland states of Australia except Queensland, with an estimated 100,000 breeding individuals (DoE 2014d). *Leipoa ocellata* has been classified as meeting the threat category of "Vulnerable" when assessed using the IUCN (2012) criteria (DoE 2014d) due to a population size reduction (DEHSA 2007). *Leipoa ocellata* is also listed "Threatened Species" under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th) (DoE 2014b).

A total of 319 *Leipoa ocellata* nest mounds have been recorded at the Mt Gibson Ranges and the surrounding plains (ATA 2005a; ATA 2005b; MGX & EHPL 2013; Biologic 2014b; Maia 2014). As there are no known active nest mounds, the Proposal is not expected to affect any live individuals of *Leipoa ocellata*.

Having regard to the broad distribution of its potential habitat recorded across the Mt Gibson Ranges and the wider region, whilst *Leipoa ocellata* is an environmentally significant fauna taxon, the effect of the Proposal to *Leipoa ocellata* is not expected to be environmentally significant. The EPA's objectives for the key environmental factor of Terrestrial Fauna can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of *Leipoa ocellata*.

The Proposal can also be expected to remove potential habitat for other fauna taxa (e.g. birds, reptiles, etc.) which are not of listed conservation significance. Having regard to the broad regional distributions of such fauna, the Proposal is not expected to result in a significant detrimental effect to the representation, diversity, viability or ecological function of other fauna taxa.

The Proposal would require clearing of 70ha of vegetation which provides habitat for an array of fauna (including the Specially Protected Fauna taxa addressed above). The Proposal would increase the approved vegetation clearing of the Mt Gibson Ranges mining operations by approximately 6% from 1,330ha to 1,405ha. Having regard to the broad distribution of potential fauna habitat recorded across the Mt Gibson Ranges and the wider region, the effect of the Proposal to fauna habitat is not expected to be environmentally significant. The EPA's objectives for the key environmental factor of Terrestrial Fauna can therefore be met, noting the Proposal is not expected to result in a significant detrimental effect to the representation or ecological function of fauna habitat in the region.

2.2.3 Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

Yes

No

If yes, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

The mining tenements and the area of the Mt Gibson Ranges have been subject to numerous fauna surveys over more than a decade, the combination of which form a sound basis to assess the potential environmental impacts of the Proposal to fauna.

The reports listed below are provided on the compact disc appended to this referral document:

- (a) ATA Environmental (2005b) *Fauna Assessment Mt Gibson*. Report to Mount Gibson Mining Limited. Report 2004/51. Version 5. December 2005.
- (a) Biologic Environmental Survey Pty Ltd (2014a) *Mt Gibson Ranges Targeted *Idiosoma nigrum* Survey*. Report prepared by Durrant B of Biologic Environmental Survey Pty Ltd for Mount Gibson Mining Limited. Revision 3. June 2014.
- (b) Biologic Environmental Survey Pty Ltd (2014b) *Mt Gibson Ranges Targeted Malleefowl Survey*. Report prepared by Brooks C and Durrant B of Biologic Environmental Survey Pty Ltd for Mount Gibson Mining Limited. Revision 3. June 2014.
- (c) Ecologia Environmental Consultants Pty Ltd (2014) *Extension Hill Magnetite Project Conservation Significant Fauna Monitoring 2013*. Report prepared by Jackett N and Greatwich B and of Ecologia Environmental Consultants Pty Ltd for Asia Iron Australia Pty Ltd. Revision 0. January 2014.
- (d) Hart, Simpson and Associates Pty Ltd (2000) *Mt Gibson Iron Pellet Project Fauna Survey*. Report to Mt Gibson Iron Limited. October 2000.
- (e) Mount Gibson Mining Limited (2011) *Extension Hill Hematite Operation Annual Malleefowl Mound Monitoring November 2010*. May 2011.
- (f) Mount Gibson Mining Limited (2012) *Extension Hill Annual Malleefowl Monitoring December 2011*. October 2012.
- (g) Terrestrial Ecosystems (2012) *Terrestrial Vertebrate Fauna Monitoring Results for the Mount Gibson Iron Ore Mine and Infrastructure Project*. Report prepared by Thomson G (Dr.) of Terrestrial Ecosystems for Mount Gibson Mining Limited and Extension Hill Pty Ltd. Revision 2. February 2012.
- (h) Terrestrial Ecosystems (2014) *Terrestrial Vertebrate Fauna Monitoring Results for the Mount Gibson Iron Ore Mine and Infrastructure Project*. Report prepared by Thompson G (Dr.) of Terrestrial Ecosystems for Mount Gibson Mining Limited. Revision 2. January 2014.
- (i) University of Western Australia (2005) *The Mygalomorph spiders from the Mt Gibson region, Western Australia, including species apparently endemic to the area*. Report prepared by Main BY for ATA Environmental. October 2005.
- (j) Western Australian Museum (2005) *The Short-Range Endemic Invertebrate Fauna from the Mt Gibson region, Western Australia: The millipedes*. Report by Harvey M S for ATA Environmental. August 2005.
- (k) Western Australian Museum (2006) *The Invertebrate Fauna of the Mt Gibson region, Western Australia: The land snails*. Report prepared by Slack-Smith S for ATA Environmental. March 2006.

2.2.4 Has a search of DEC records for known occurrences of Specially Protected (threatened) fauna been conducted for the site?

Yes No (please tick)

A search of DPaW records for the Proposal area has been undertaken as part of the fauna surveys referred to above.

2.2.5 Are there any known occurrences of Specially Protected (threatened) fauna on the site?

Yes No **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

Refer to Section 2.2.2 above.

2.3 Rivers, Creeks, Wetlands and Estuaries

2.3.1 Will the development occur within 200 metres of a river, creek, wetland or estuary?

(please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section.

2.3.2 Will the development result in the clearing of vegetation within the 200 metre zone?

Yes No **If yes**, please describe the extent of the expected impact.

2.3.3 Will the development result in the filling or excavation of a river, creek, wetland or estuary?

Yes No **If yes**, please describe the extent of the expected impact.

2.3.4 Will the development result in the impoundment of a river, creek, wetland or estuary?

Yes No **If yes**, please describe the extent of the expected impact.

2.3.5 Will the development result in draining to a river, creek, wetland or estuary?

Yes No **If yes**, please describe the extent of the expected impact.

2.3.6 Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories? (please tick)

Conservation Category Wetland	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Perth's Bush Forever site	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
The management area as defined in s4(1) of the <i>Swan River Trust Act 1988</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure

2.4 Significant Areas and/ or Land Features

2.4.1 Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

Yes No **If yes, please provide details.**

2.4.2 Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

Yes No **If yes, please provide details.**

Iron Hill and the area of the Proposal contains flora taxa declared as Rare Flora under the *Wildlife Conservation Act 1950* (WA) (refer Section 2.16 above). Areas of native vegetation within fifty metres of Rare Flora are classified as Environmentally Sensitive Areas by virtue of r6(1)(d) of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (WA).

2.4.3 Are you aware of any significant natural land features (e.g. caves, ranges etc) that will be impacted by the proposed development?

Yes No **If yes, please provide details.**

The Proposal would disturb land which is part of the Mt Gibson Ranges at elevations between approximately 330mAHD to 420mAHD. The Proposal will involve the removal of part of the Iron Hill ridge to construct a Mine Pit (a depression), and the construction of an adjacent Waste Rock Landform (an elevated land mass). The effect of the Proposal to the Mt Gibson Ranges will be minimised through rehabilitation of the Waste Rock Landform and the Support Infrastructure following the completion of mining.

The area of the Proposal is not considered to have significant landform values in context with other parts of the Mt Gibson Ranges including Extension Hill (445mAHD) and Gibson Hill (445mAHD), as well in context with the surrounding regional landforms which include Mt Singleton (660mAHD), Warriedar Hill (545mAHD), Wylacoopin Hill (540mAHD), Milgoo Peak (530mAHD), Windaning Hill (510mAHD), Chulaar Hill (495mAHD), Mt Kenneth (490mAHD), Murrungnalgo Hill (490mAHD), Pinyalling Hill (490mAHD), Watheragabbing Hill (475mAHD) and Yadhanoo Hill (470mAHD).

2.5 Coastal Zone Areas (Coastal Dunes and Beaches)

2.5.1 Will the development occur within 300metres of a coastal area?

- (please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section.

2.5.2 What is the expected setback of the development from the high tide level and from the primary dune?

2.5.3 Will the development impact on coastal areas with significant landforms including beach ridge plain, cusplate headland, coastal dunes or karst?

- Yes No **If yes**, please describe the extent of the expected impact.

2.5.4 Is the development likely to impact on mangroves?

- Yes No **If yes**, please describe the extent of the expected impact.

2.6 Marine Areas and Biota

2.6.1 Is the development likely to impact on an area of sensitive benthic communities, such as seagrasses, coral reefs or mangroves?

- Yes No **If yes**, please describe the extent of the expected impact.

2.6.2 Is the development likely to impact on marine conservation reserves or areas recommended for reservation (as described in *A Representative Marine Reserve System for Western Australia*, CALM, 1994)?

- Yes No **If yes**, please describe the extent of the expected impact.

2.6.3 Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

Yes

No

If yes, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

2.7 Water Supply and Drainage Catchments

2.7.1 Are you in a proclaimed or proposed groundwater or surface water protection area?

(You may need to contact the Department of Water (DoW) for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

Yes

No

If yes, please describe what category of area.

The Proposal is situated in the East Murchison groundwater management area proclaimed under the *Rights in Water and Irrigation Act 1914* (WA) (DoW 2009). MGX currently undertakes groundwater abstraction for its Mt Gibson Ranges mine operations in accordance with Groundwater Licence GWL166067 granted to EHPL by the Department of Water under s5C of the *Rights in Water and Irrigation Act 1914* (WA) (DoW 2013).

Consistent with the existing Mt Gibson Ranges mine operations, the Proposal will require groundwater abstraction to supply water for dust suppression and other mining activities. The Proposal does not require groundwater dewatering as mine development will occur above the groundwater table. The volume of groundwater abstraction required for implementation of the Proposal can be managed within the allocation limit currently provided for under Groundwater Licence GWL166067.

2.7.2 Are you in an existing or proposed Underground Water Supply and Pollution Control area?

(You may need to contact the DoW for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

Yes

No

If yes, please describe what category of area.

2.7.3 Are you in a Public Drinking Water Supply Area (PDWSA)?

(You may need to contact the DoW for more information or refer to the DoW website. A proposal to clear vegetation within a PDWSA requires approval from DoW.)

Yes

No

If yes, please describe what category of area.

2.7.4 Is there sufficient water available for the proposal?

(Please consult with the DoW as to whether approvals are required to source water as you propose. Where necessary, please provide a letter of intent from the DoW)

Yes No (please tick)

MGX currently draws groundwater for its Mt Gibson Ranges mining operations in accordance with Groundwater Licence GWL166067 granted to EHPL by the Department of Water under s5C of the *Rights in Water and Irrigation Act 1914* (WA) (DoW 2013). The volume of groundwater abstracted for the Proposal can be managed within the allocation limit currently provided for under Groundwater Licence GWL166067.

2.7.5 Will the proposal require drainage of the land?

Yes No **If yes**, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

2.7.6 Is there a water requirement for the construction and/ or operation of this proposal?

(please tick) Yes **If yes**, complete the rest of this section.
 No **If no**, go to the next section.

2.7.7 What is the water requirement for the construction and operation of this proposal, in kilolitres per year?

The Proposal would require groundwater abstraction to supply water for dust suppression and other mining activities. The Proposal would not require groundwater dewatering as mine development would occur above the groundwater table. The groundwater requirement for the Proposal has not been estimated, however, is expected to be consistent with the groundwater requirement of the current Mt Gibson Ranges mine operations and manageable within the allocation limit currently provided for under Groundwater Licence GWL166067 (DoW 2013).

2.7.8 What is the proposed source of water for the proposal? (e.g. dam, bore, surface water etc.)

The proposed water source for the Proposal is groundwater.

2.8 Pollution

2.8.1 Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

(please tick) Yes **If yes, complete the rest of this section.**

No **If no, go to the next section.**

Consistent with the existing Mt Gibson Ranges mine operations, discharges to the environment from the Proposal are expected to include the following:

- (a) noise – from mining equipment and blasting;
- (b) vibration – from mining equipment and blasting;
- (c) gaseous emissions – from hydrocarbon fuels used in mining equipment and power generation;
- (d) dust – from activities including land clearing, drilling, blasting, excavation, loading and unloading of ore and waste rock, vehicle movements on unsealed roads, and from wind passing over cleared land areas;
- (e) liquid effluent – wastewaters from administration facilities, and groundwater used in dust suppression activities; and
- (f) solid waste - excavated waste rock from the Mine Pit to the Waste Rock Landform, and putrescible wastes from administration facilities.

For context, because of active and effective site management and monitoring, the above types of discharges from the existing Mt Gibson Ranges mining operations have not resulted in any significant environmental effects. Similarly, potential discharges of this nature to the environment from the Proposal will be controlled by implementation of established site based procedures to manage the emissions or risk of undue effects.

2.8.2 Is the proposal a prescribed premise, under the Environmental Protection Regulations 1987?

(Refer to the EPA's *General Guide for Referral of Proposals to the EPA under section 38(1) of the EP Act 1986* for more information)

Yes No **If yes, please describe what category of prescribed premise.**

The existing Mt Gibson Ranges mining operations include Prescribed Premises under Schedule 1 of the *Environmental Protection Regulations 1987* (WA) through Licence 8495 (DER 2014) for "Category 5 – Processing or beneficiation of metallic or non-metallic ore", "Category 64 – Class II putrescible landfill site" and "Category 85 – Sewage facility".

Consistent with the existing Mt Gibson Ranges mining operations, the Proposal may include a putrescible landfill site co-located within the area of the Waste Rock Landform, such that part of the Proposal may constitute a Prescribed Premises for "Category 64 – Class II putrescible landfill site". An operational decision has yet to be made as to whether a landfill is required for the Proposal, or alternatively, whether the existing landfill at the Mt Gibson Ranges mine operations will be used to support the Proposal. A change to Licence 8495 (DER 2014) regulated by the Department of Environmental Regulation (DER) may be necessary if a landfill is required within the area of the Proposal.

2.8.3 Will the proposal result in gaseous emissions to air?

Yes No **If yes, please briefly describe.**

Consistent with the existing Mt Gibson Ranges mining operations, the Proposal is expected to result in gaseous emissions to air from the burning of hydrocarbon fuels in mining equipment and power generation facilities. The mass of gaseous emissions is not expected to be significant, based on the emissions of the existing Mt Gibson Ranges mining and infrastructure operations, with relevant regulatory limits and air quality standards predicted not to be exceeded because of the Proposal.

2.8.4 Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

Yes No **If yes, please briefly describe.**

2.8.5 Will the proposal result in liquid effluent discharge?

Yes No **If yes, please briefly describe the nature, concentrations and receiving environment.**

Consistent with the existing Mt Gibson Ranges mining operations, the Proposal is expected to result in liquid effluent discharges to the environment from administration facilities (ablutions), with the treated liquid effluent discharged to the environment through soil infiltration. The volume of treated liquid effluent discharge would not be significant, noting the administration facilities will be small in size, with the existing administration facilities for the Mt Gibson Ranges mine operations remaining the primary facilities used by the mine operations. No regulatory water quality limits or standards are expected to be exceeded by treated liquid effluent discharges.

2.8.6 If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

Yes No **If yes, please describe.**

2.8.7 Will the proposal produce or result in solid wastes?

Yes No **If yes, please briefly describe the nature, concentrations and disposal location/ method.**

Consistent with the existing Mt Gibson Ranges mining operations, solid wastes produced from the Proposal are expected to include:

- (a) Excavated waste rock from the Mine Pit, to be disposed of to the Waste Rock Landform; and
- (b) Putrescible wastes from administration facilities, to be disposed of either to the landfill used by the existing Mt Gibson Ranges mine operations under Licence 8495 (DER 2014) (located beyond the Proposal area), or to a landfill within the Proposal area (refer to Section 2.8.2 above).

For context, solid waste produced from existing Mt Gibson Ranges mine operations have not resulted in a significant environmental impact. Similarly, solid wastes produced by the Proposal are not expected to result in a significant environmental impact.

2.8.8 Will the proposal result in significant off-site noise emissions?

Yes No **If yes**, please briefly describe.

2.8.9 Will the development be subject to the Environmental Protection (Noise) Regulations 1997?

Yes No **If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations?

Please attach the analysis.

Noise emissions from the Proposal will be subject to the provisions of the *Environmental Protection (Noise) Regulations 1997* (WA). As the noise emissions from the Proposal are expected to be consistent with the noise emissions from the existing Mt Gibson Ranges mine operations, an analysis of the noise emissions from the Proposal has not been considered necessary given key characteristics of its remote and operational setting.

2.8.10 Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other “sensitive premises” such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?

Yes No **If yes**, please describe and provide the distance to residences and other “sensitive premises”.

The Proposal is not located in the vicinity of any “sensitive premises”.

2.8.11 If the proposal has a residential component or involves “sensitive premises”, is it located near a land use that may discharge a pollutant?

Yes No Not Applicable

If yes, please describe and provide the distance to the potential pollution source

2.9 Greenhouse Gas Emissions

2.9.1 Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?

Yes

No

If yes, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.

2.9.2 Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

2.10 Contamination

2.10.1 Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?

Yes

No

Unsure

If yes, please describe.

2.10.2 Has any assessment been done for soil or groundwater contamination on the site?

Yes

No

If yes, please describe.

2.10.3 Has the site been registered as a contaminated site under the *Contaminated Sites Act 2003*? (on finalisation of the CS Regulations and proclamation of the CS Act)

Yes

No

If yes, please describe.

2.11 Social Surroundings

2.11.1 Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?

Yes

No

Unsure

If yes, please describe.

The area of the Proposal has been subject to ethnographic and archaeological surveys and reports for Aboriginal heritage since 2004, as outlined in Tehnas (2010) and identified by the mapping provided at Attachment 1 (Figure 7).

Based on the survey data outlined by Tehnas (2010) and review of data held by the Department of Aboriginal Affairs (DAA 2014), the Proposal does not coincide with any registered Aboriginal Heritage sites within the meaning of s5 or s6 of the *Aboriginal Heritage Act 1972* (WA).

The Proposal does coincide with DAA record 25293 "Extension Hill", which is recorded by DAA as an "other heritage place" (i.e. not a registered Aboriginal Heritage site). The DAA record 25293 covers most of the Mt Gibson Ranges, extending for a distance of approximately 7km, with its purpose listed as "ceremonial, mythological". The DAA record 25293 was submitted by the Widi Mob in 2004 (Tehnas 2010), however since that time, the

Widi Mob have changed the area of Native Title claim to exclude the Mt Gibson Ranges. Further consultation with DAA will be undertaken to determine if DAA record 25293 is of Aboriginal heritage significance (or not) and, consequently, whether consent (approval) under s18 of the *Aboriginal Heritage Act 1972* (WA) may be required.

2.11.2 Is the proposal on a property which contains or is near a site of high public interest (e.g. a major recreation area or natural scenic feature)?

Yes No **If yes**, please describe.

2.11.3 Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?

Yes No **If yes**, please describe.

3. PROPOSED MANAGEMENT

Environmental Management

The Proposal will be managed in accordance with the existing environmental management framework applying to and approved for the existing Mt Gibson Ranges Iron Ore mine and infrastructure under Statement 753. The relevant management plans include:

- (a) Mount Gibson Mining Limited and Extension Hill Pty Ltd (2008) *Mt Gibson Iron Ore Mine and Infrastructure Project Environmental Management Plan*. July 2008;
- (b) Department of Parks and Wildlife (2008a) *Mason's Darwinia (Darwinia masonii) Interim Recovery Plan 2008-2012*. Interim Recovery Plan 282; and
- (c) Department of Parks and Wildlife (2008b) *Lepidosperma gibsonii Interim Recovery Plan 2008-2012*. Interim Recovery Plan 283.

The *Environmental Management Plan (MGX & EHPL 2008)* addresses the applicable set of potential environmental aspects and factors specific to the site, including management of:

- Land clearing (including flora species and vegetation);
- Fauna;
- Dust;
- Fire;
- Water;
- Weeds;
- Waste;
- Rehabilitation; and
- Induction and training.

In the future, subject to approval and given the timing of the Proposal, the following species recovery plans would be applied and implemented, instead of the plans stipulated at (b) and (c), being:

- Mount Gibson Mining Limited and Extension Hill Pty Ltd (2014) *Mason's Darwinia (Darwinia masonii) Recovery Plan*. Revision 0. June 2014; and
- Mount Gibson Mining Limited and Extension Hill Pty Ltd (2014) *Lepidosperma gibsonii Recovery Plan*. Revision 0. June 2014.

These plans specifically address future actions targeted at recovery (including restoration) of the two rare flora species known to occur on the land to be disturbed by mining.

The Iron Hill Proposal would operate functionally as a continuation of the existing Mt Gibson Ranges hematite mining operations, and in concert with the Statement 753 approval. As the environmental factors of the Proposal are consistent with the environmental factors of the existing Mt Gibson Ranges mining operations and Statement 753, the current environmental management plans would be the basis on which to manage the construction and operational environmental risks of the Proposal.

MGX has a clear history of environmental compliance with the conditions of the Statement 753 approval for the existing Mt Gibson Ranges mine operations.

Environmental Offsets

The key environmental factor relevant to this Proposal is considered to be Flora and Vegetation and, specifically, to the flora species *Darwinia masonii* (as described by Section 2.1.6 above and Attachment 5).

Whilst the effect of the Proposal would not be expected to change the threat category of "Vulnerable" currently applying to *Darwinia masonii* under the IUCN (2012) criteria (Globe Environments 2014; Attachment 4), any significant residual impact to *Darwinia masonii* by the Proposal may require application of environmental offsets as outlined within relevant Government guidance documents (Government of Western Australia 2011; EPA 2008; EPA 2006b).

Accordingly, environmental offsets - for the effect of the Proposal to *Darwinia masonii* - may be considered as a key integrating factor. Having regard to the existing environmental offsets framework for *Darwinia masonii* previously stipulated in Statement 753, including a substantial component which has been completed (refer BGPA 2010), it may be appropriate to offset any significant residual impact from this Proposal within the existing environmental offsets framework for *Darwinia masonii*. With regard to this Proposal, the environmental offsets that could continue under the existing environmental offsets framework may include:

- (a) Implementation of *Darwinia masonii* research and recovery Plans (Condition 6 of Statement 753), which includes:
 - (i) Monitoring the number of individuals, and indicators of their health and reproduction;
 - (ii) Offset direct impacts by regeneration, re-establishment or translocation (by implementing restoration and recovery actions); and
 - (iii) Future implementation of the *Darwinia masonii* Recovery Plan (MGX & EHPL 2014).
- (b) Financial contribution of \$110,000 per year (Condition 16 of Statement 753) to assist with:
 - (i) Continuation of the implementation of the *Darwinia masonii* Interim Recovery Plan; then once superseded,
 - (ii) Preparation and implementation of the *Darwinia masonii* Recovery Plan (MGX & EHPL 2014); and
 - (iii) Coordinating the management of threatening processes to *Darwinia masonii*.

Continuation of the above environmental offsets under the existing framework for *Darwinia masonii* may be considered appropriate for implementation of the Proposal as a continuation of the life of the hematite mining phase of the project.

It should be noted that the Proposal will also be subject to assessment and management under legislation administered by other government agencies, being:

- (a) *Wildlife Conservation Act 1950* (WA) – assessment and approval by DPaW of applications for a Permit to Take for *Darwinia masonii*, *Lepidosperma gibsonii* and *Idiosoma nigrum*; and
- (b) *Mining Act 1978* (WA) – assessment and approval by DMP of a Mining Proposal and a Mine Closure Plan for the management of the environmental effects of mining and of mine closure.

3.1 Principles of Environmental Protection

3.1.1 Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA website)

- | | | |
|--|---|-----------------------------|
| 1. The precautionary principle. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. The principle of intergenerational equity. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. The principle of the conservation of biological diversity and ecological integrity. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Principles relating to improved valuation, pricing and incentive mechanisms. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. The principle of waste minimisation. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

3.1.2 Is the proposal consistent with the EPA's Environmental Protection Bulletins/Position Statements and Environmental Assessment Guidelines/Guidance Statements (available on the EPA website)?

Yes No

3.2 Consultation

3.2.1 Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

Yes No **If yes**, please list those consulted and attach comments or summarise response on a separate sheet.

A range of stakeholders were consulted regarding the Proposal prior to this referral being made under s38 of the *Environmental Protection Act 1986* (WA). The stakeholders included government agencies, and interested parties who had provided comment on the EPA (2006a) assessment report during the determination of Statement 753.

The stakeholders consulted on this Proposal were (in alphabetical order):

- (a) Australian Bush Heritage Fund;
- (b) Australian Wildlife Conservancy;
- (c) Badimia People Native Title Applicants;
- (d) City of Greater Geraldton;
- (e) Conservation Council of Western Australia;
- (f) Department of Aboriginal Affairs;
- (g) Department of Environmental Regulation;
- (h) Department of Lands;
- (i) Department of Parks and Wildlife (DPaW);
- (j) Department of Mines and Petroleum (DMP);

- (k) Department of Water;
- (l) Department of the Environment;
- (m) Environmental Protection Authority (EPA) / Office of the EPA (OEPA);
- (n) Extension Hill Pty Ltd (Tenement Holder);
- (o) Geraldton Port Authority;
- (p) North Central Malleefowl Preservation Group;
- (q) Pindiddy Aboriginal Corporation;
- (r) Shire of Perenjori;
- (s) Shire of Yalgoo;
- (t) Western Australian Naturalists Club (Inc); and
- (u) Wildflower Society of Western Australia.

The consultation with all stakeholders was undertaken in writing, with the area of the Proposal identified and the environmental effect on clearing vegetation and *Darwinia masonii* described. The stakeholders were invited to provide written comment on the Proposal. Copies of the written consultation to the stakeholders, and copies of any responses received from the stakeholders, can be provided upon request.

In addition to written consultation, meetings regarding the Proposal were also held with OEPA (December 2013; June 2014), DPaW (December 2013, July 2014), DMP (November 2013, June 2014), DAA (May 2014) and the Badimia People Native Title Applicants (May 2014). The purpose of these meetings were to provide further details and allow for open discussion on the aspects of the Proposal, environmental surveys, potential environmental impacts, and the Government assessment and approvals processes.

The key environmental factor identified by the stakeholders was "Flora and Vegetation", and specifically, the effect of the Proposal to *Darwinia masonii* (as described above). Other environmental aspects of the Proposal identified by the stakeholders included the government assessment and approval processes, the content of environmental surveys, the effect to other flora and fauna taxa, environmental offsets, and mine closure.

REFERENCES

All references cited within this document are identified below. Where an organisational name has changed since the original date of publication, the new organisational name has been used and the former organisational name noted.

Subject to the provisions of the *Copyright Act 1968* (C'th), a copy of each reference to which MGX has authority to reproduce is provided on the compact disc attached to this document.

Western Australian legislation cited in this document can be obtained from the State Law Publisher at <http://www.slp.wa.gov.au>. Commonwealth legislation cited in this document can be obtained from the Australasian Legal Information Institute at http://www.austlii.edu.au/au/legis/cth/consol_act/.

ATA Environmental (2004) *Targeted Search at Mt Gibson for the Declared Rare Flora Darwinia masonii*. Report to Mount Gibson Mining Limited. Report 2004/227. Version 1. December 2004.

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- Western Australian Museum (2006) *The Invertebrate Fauna of the Mt Gibson region, Western Australia: The land snails*. Report prepared by Slack-Smith S of the Western Australian Museum for ATA Environmental. March 2006.

ATTACHMENT 1

Location Maps

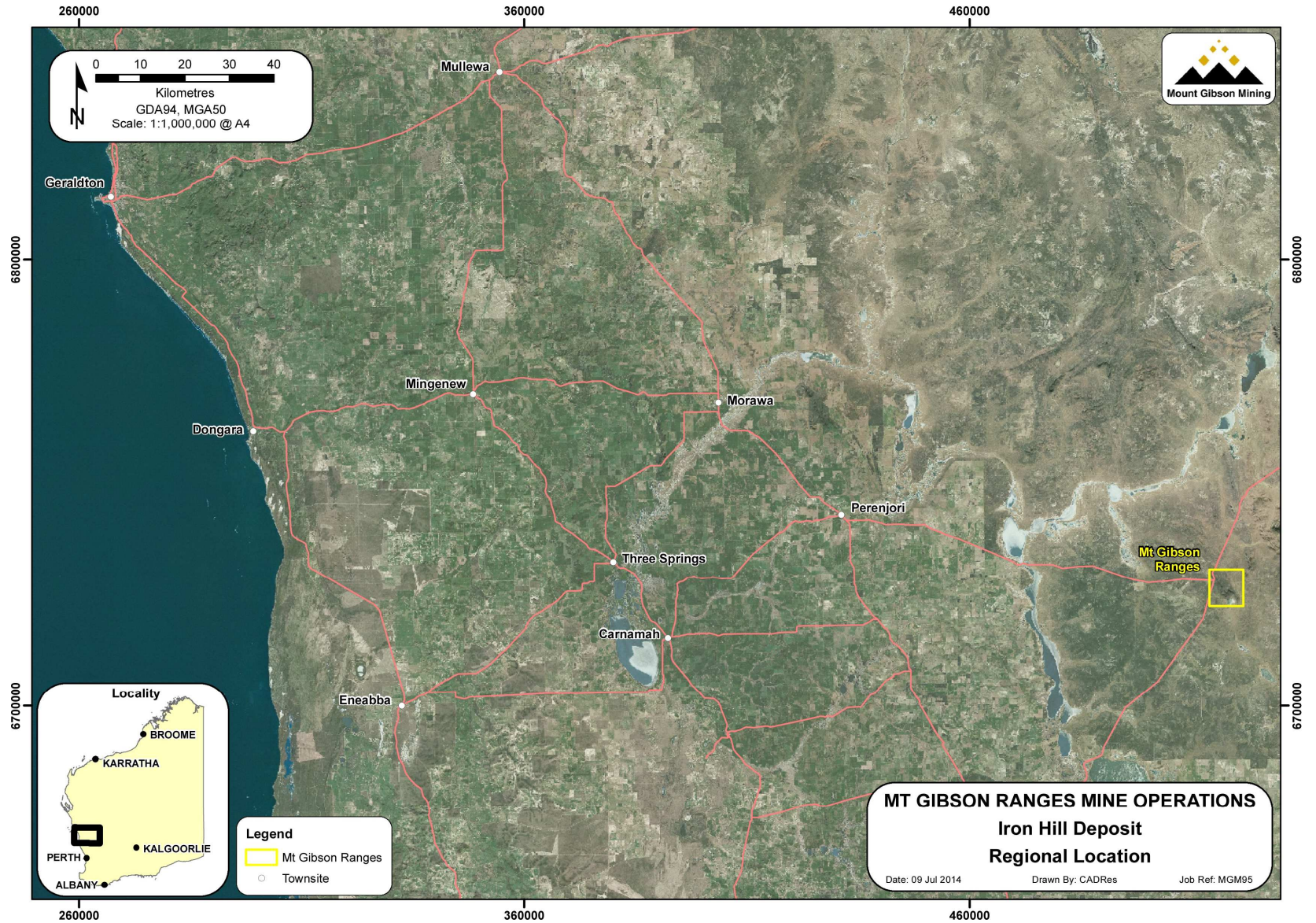


Figure 1: Regional Location of the Proposal. The regional location of the Proposal is identified in yellow. The Proposal is located within the Mt Gibson Ranges in the Shire of Yalgoo, approximately 270km east-south-east of Geraldton.

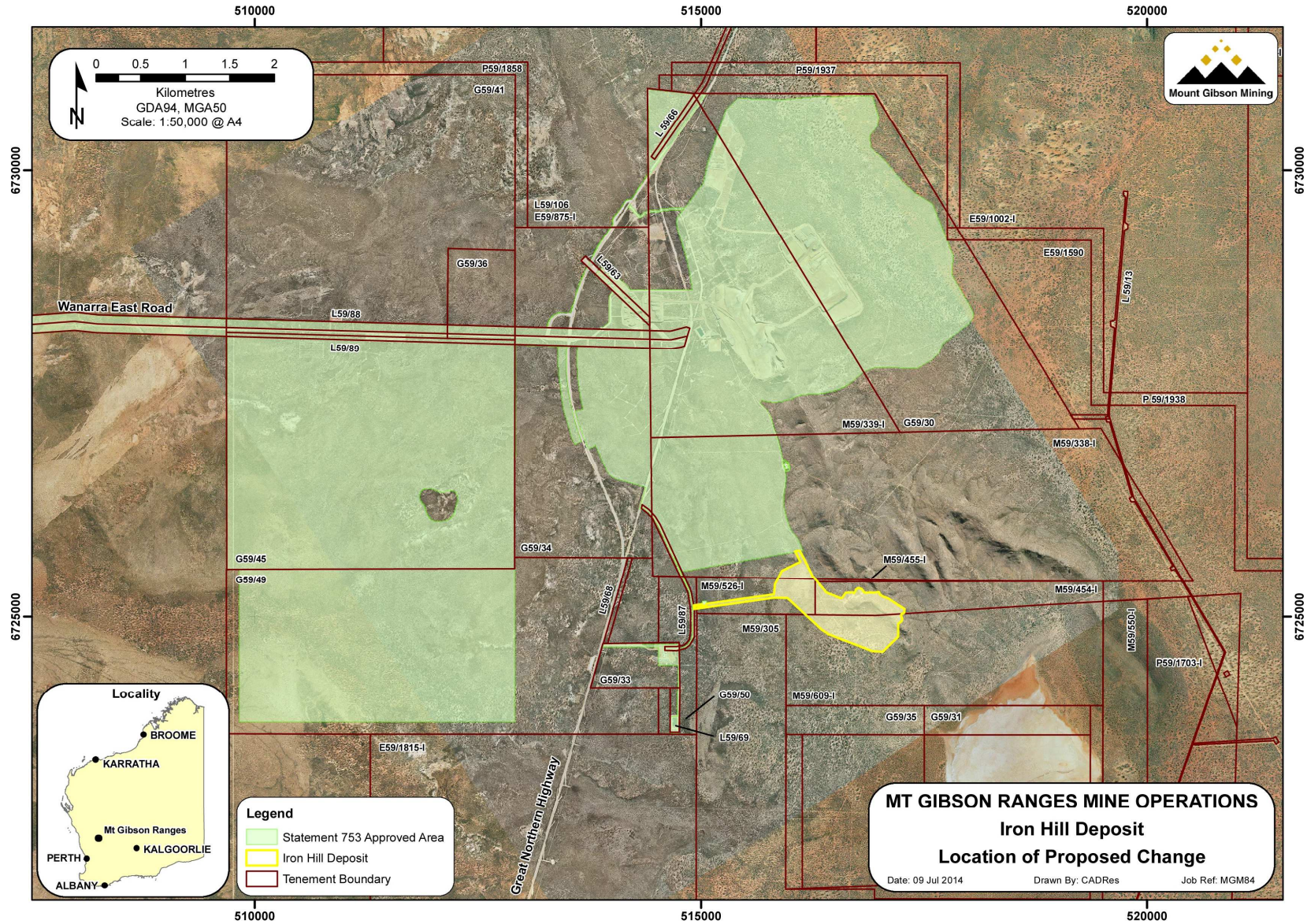


Figure 2: Area of the Proposal referred under s38(1) of the Environmental Protection Act 1986 (WA). The area of the Proposal is identified in yellow. The area of part of the approved Mt Gibson Ranges mine and infrastructure project under the Statement 753 is identified in green. Data Sources: WA Minister for Environment (2007).

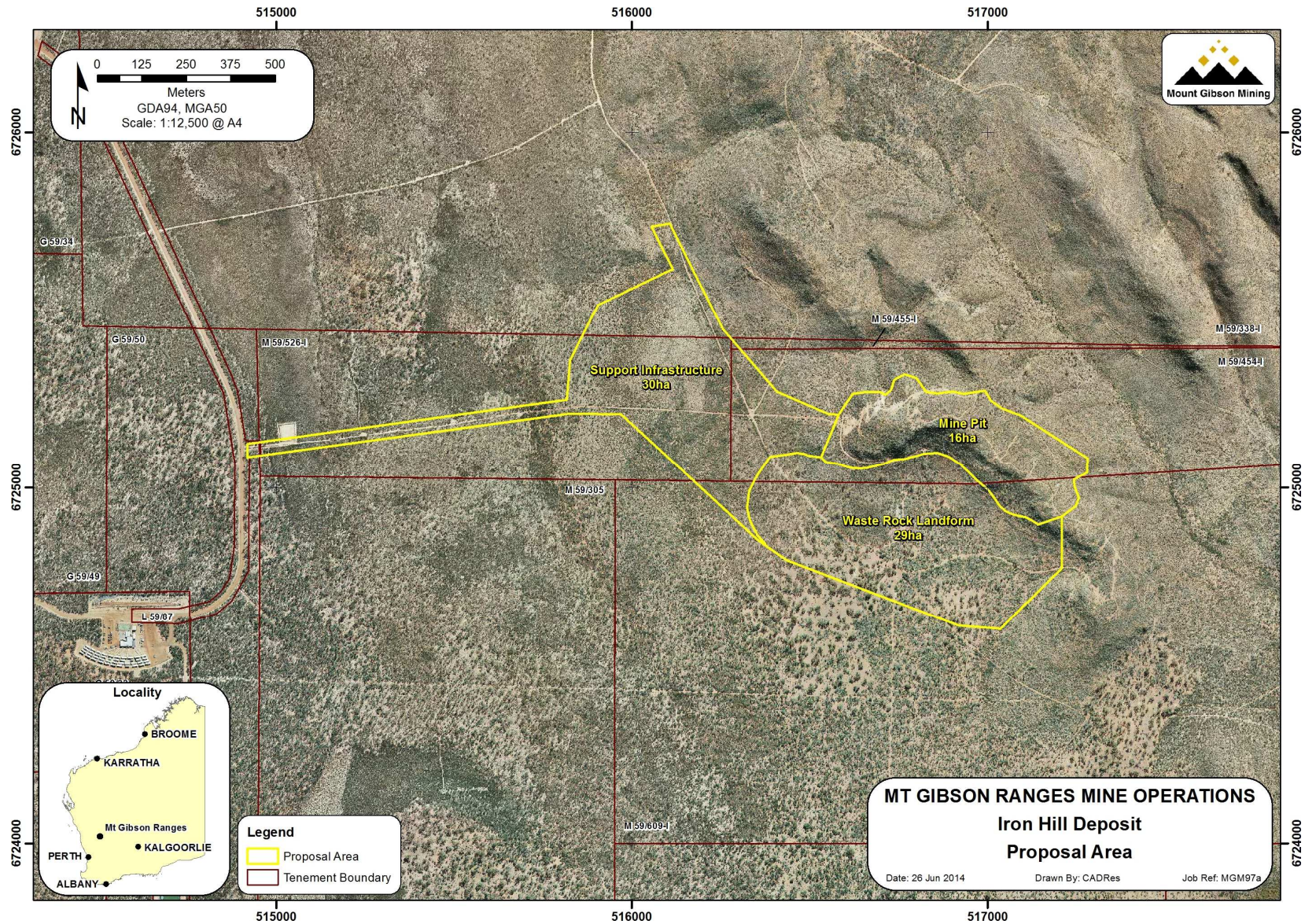


Figure 3: General Mine and Infrastructure Layout for the Proposal. The location and general layout of the Proposal is within the yellow boundary.

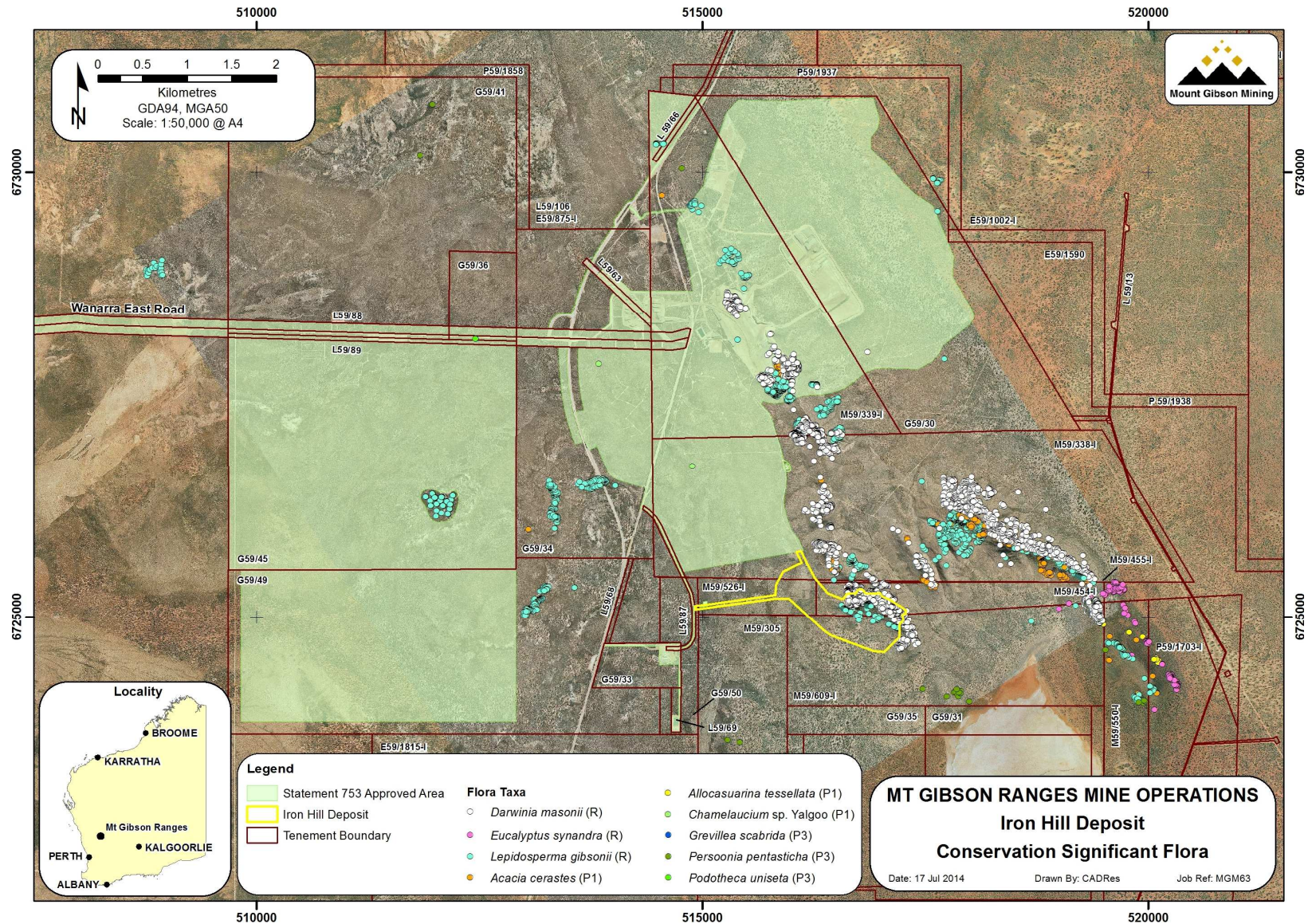


Figure 4: Recorded Locations of Flora Taxa. The area of the Proposal is identified in yellow. The area of the approved Mt Gibson Ranges mine and infrastructure project (part) under the Statement 753 approval is identified in green. Records of Rare Flora (R) taxa under the *Wildlife Conservation Act 1950* (WA) and DPaW-classified "priority" (P) flora taxa are identified. Data Sources: ATA (2004; 2006a; 2006b; 2006c), Coffey (2008), Borger & Nicholls (2013), MBS (2013), Maia (2014), MGX (unpub).

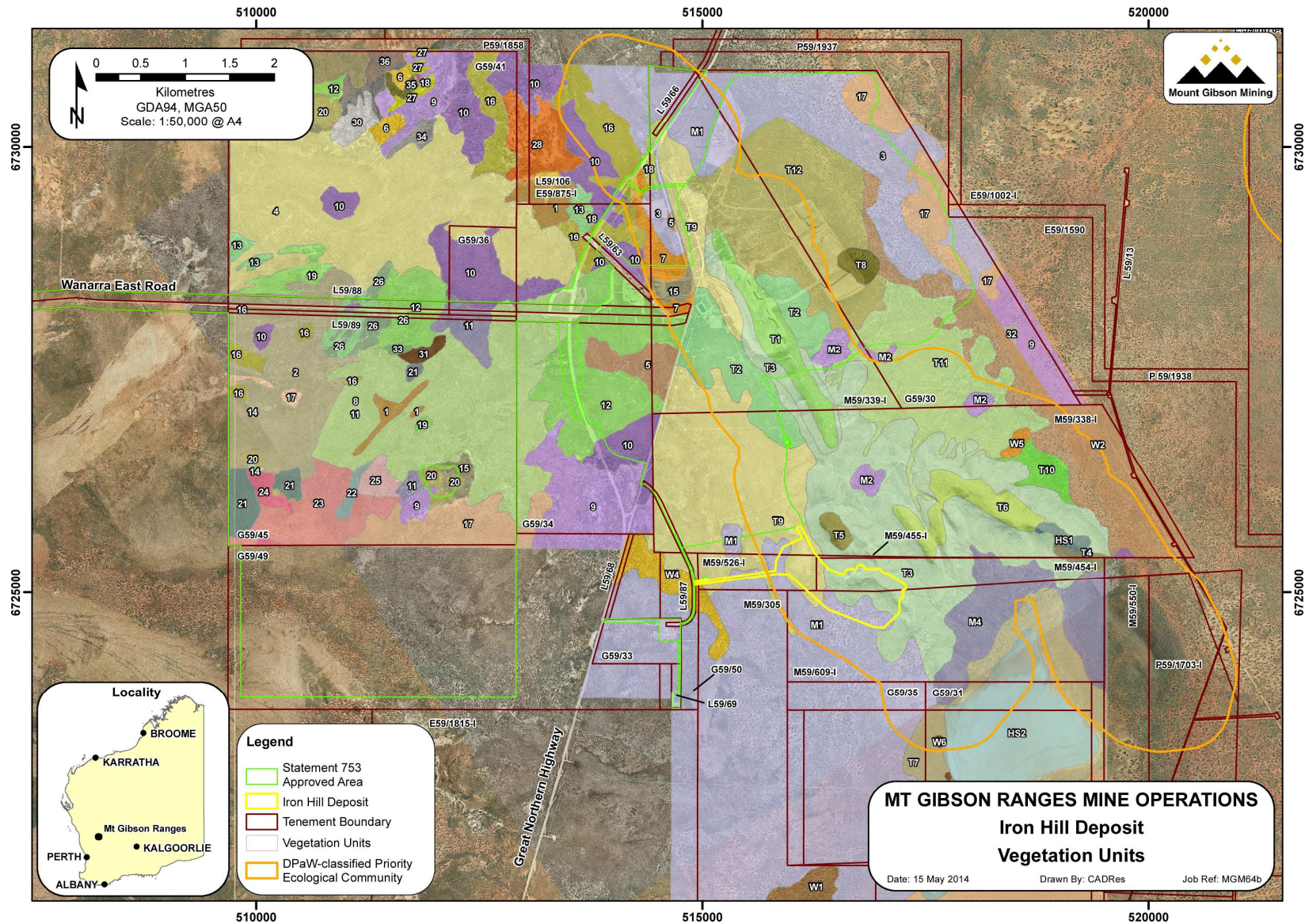


Figure 5: Recorded Vegetation Units. The area of the Proposal is identified in yellow. The area of the approved Mt Gibson Ranges mine and infrastructure project (part) under Statement 753 is outlined in green. Mapped vegetation units are identified. The DPaW-classified “Priority Ecological Community” (PEC) is outlined in orange. Data Sources: Bennett (2000), ATA (2006c), DPaW (2014a).

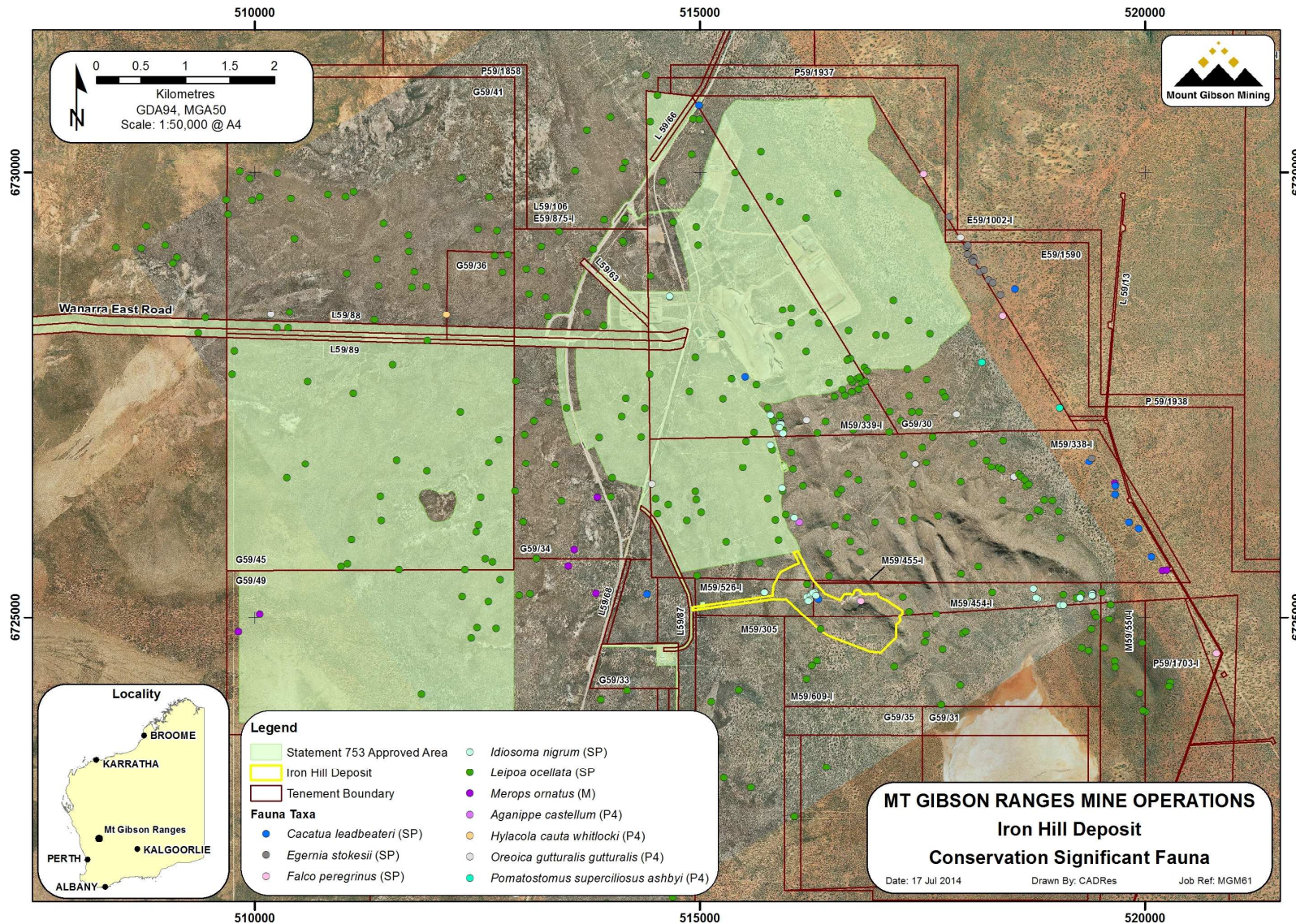


Figure 6: Recorded Locations of Fauna Taxa. The area of the Proposal is identified in yellow. The area of the approved Mt Gibson Ranges mine and infrastructure project (part) under Statement 753 is identified in green. The recorded locations of Specially Protected Fauna (SP) under *Wildlife Conservation Act 1950* (WA), migratory species (M) listed under *Environment Protection and Biodiversity Conservation Act 1999* (C'th), and DPaW-classified "priority" (P) fauna taxa are identified. Data Sources: ATA (2005a; 2005b; 2006a), Biologic (2014a; 2014b), Ecologia (2014), MGX (2012; 2014 unpubl), MGX & EHPL (2008; 2013b), Terrestrial Ecosystems (2012; 2014).

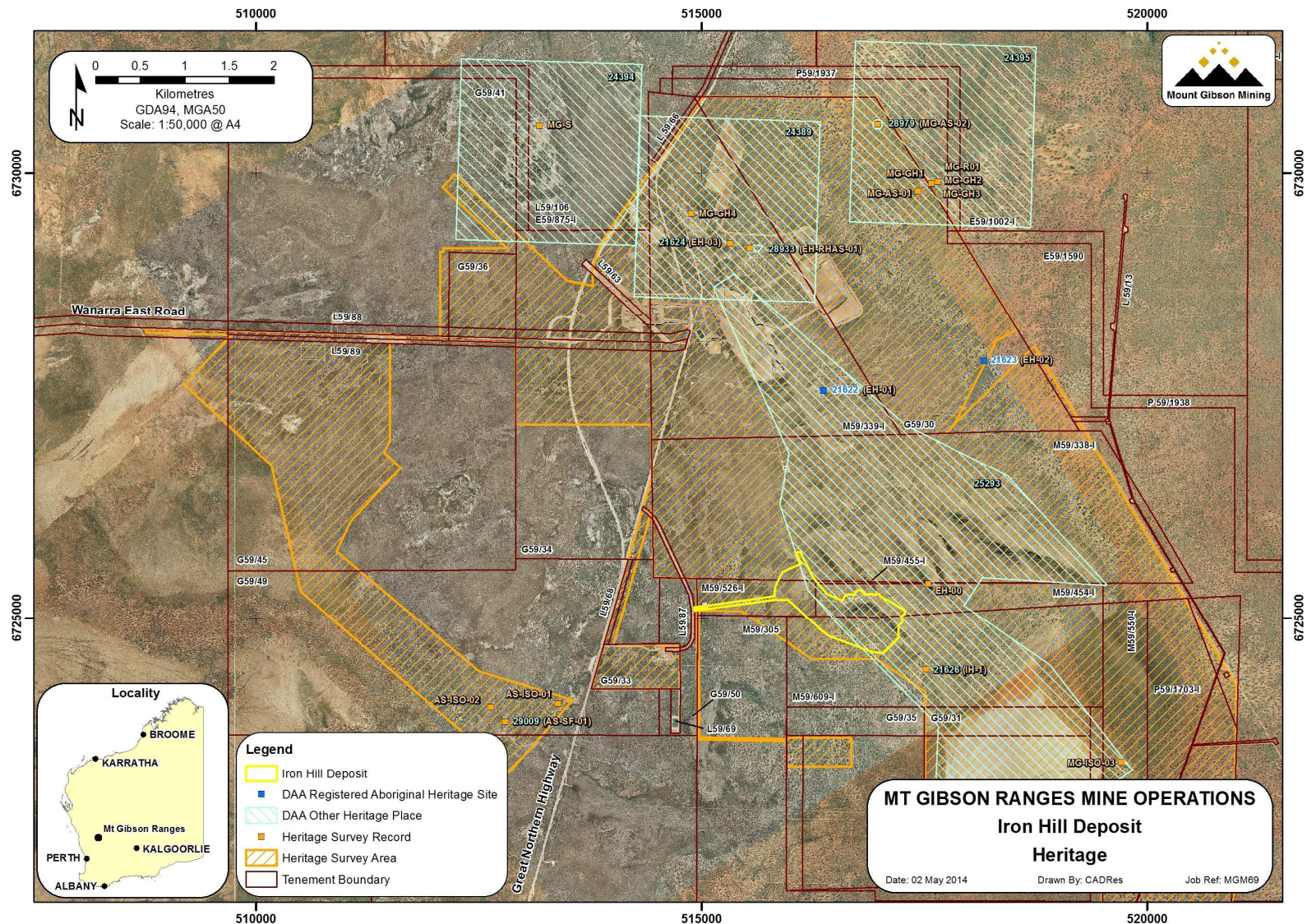


Figure 7: Recorded Locations of Registered Aboriginal Heritage Sites under the *Aboriginal Heritage Act 1972 (WA)* and Other Heritage Places. The location of the Proposal is identified in yellow. The recorded locations of Registered Aboriginal Heritage Sites under the *Aboriginal Heritage Act 1972 (WA)* and Other Heritage Places is identified. The Proposal coincides with DAA record 25293 (not a registered Aboriginal Heritage site). Data Sources: DAA (2014); Tehnas (2010).

ATTACHMENT 2

Supporting Documents

Digital copies of the following key environmental documents are provided on the compact disc attached to the referral document:

ATA Environmental (2004) *Targeted Search at Mt Gibson for the Declared Rare Flora Darwinia masonii*. Report to Mount Gibson Mining Limited. Report 2004/227. Version 1. December 2004.

ATA Environmental (2005a) *Malleefowl Assessment Mt Gibson*. Report to Mount Gibson Mining Limited. Report 2004/188. Version 2. June 2005.

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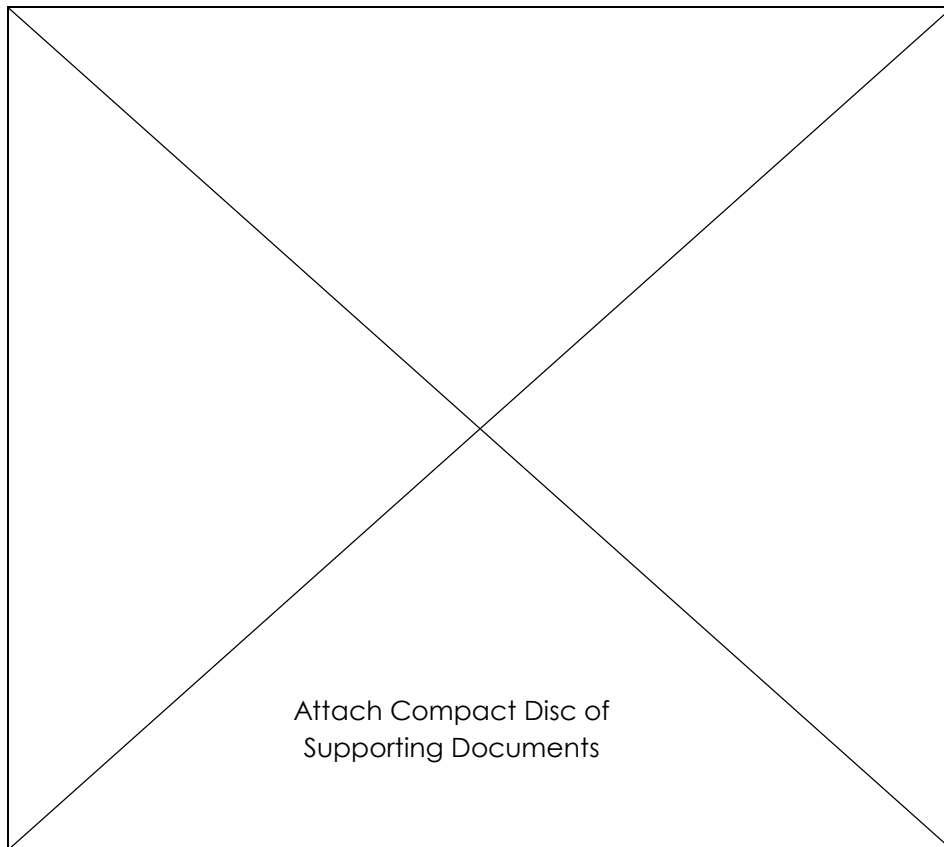
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Western Australian Museum (2006) *The Invertebrate Fauna of the Mt Gibson region, Western Australia: The land snails*. Report prepared by Slack-Smith S of the Western Australian Museum for ATA Environmental. March 2006.



ATTACHMENT 3

Key Proposal Characteristics

(as per EPA 2012)

KEY PROPOSAL CHARACTERISTICS

Summary of the Proposal

Proposal Title	Mount Gibson Iron Ore Mine & Infrastructure - Iron Hill Deposit
Proponent Name	Mount Gibson Mining Limited
Short Description	The Proposal is for the mining of the Iron Hill Deposit, located at the Mt Gibson Ranges approximately 270km east-south-east of Geraldton, in the Shire of Yalgoo, Western Australia. The Proposal includes a mine pit, waste rock landform and support infrastructure.

Physical Elements

Element	Location	Area
Mine Pit	Figure 1 and Figure 2	16ha
Waste Rock Landform	Figure 1	29ha
Support Infrastructure	Figure 1	30ha
Total		75ha

Figures

Figure 1: Proposal Location

Figure 2: Proposal Location and recorded locations of the Rare Flora taxon *Darwinia masonii*

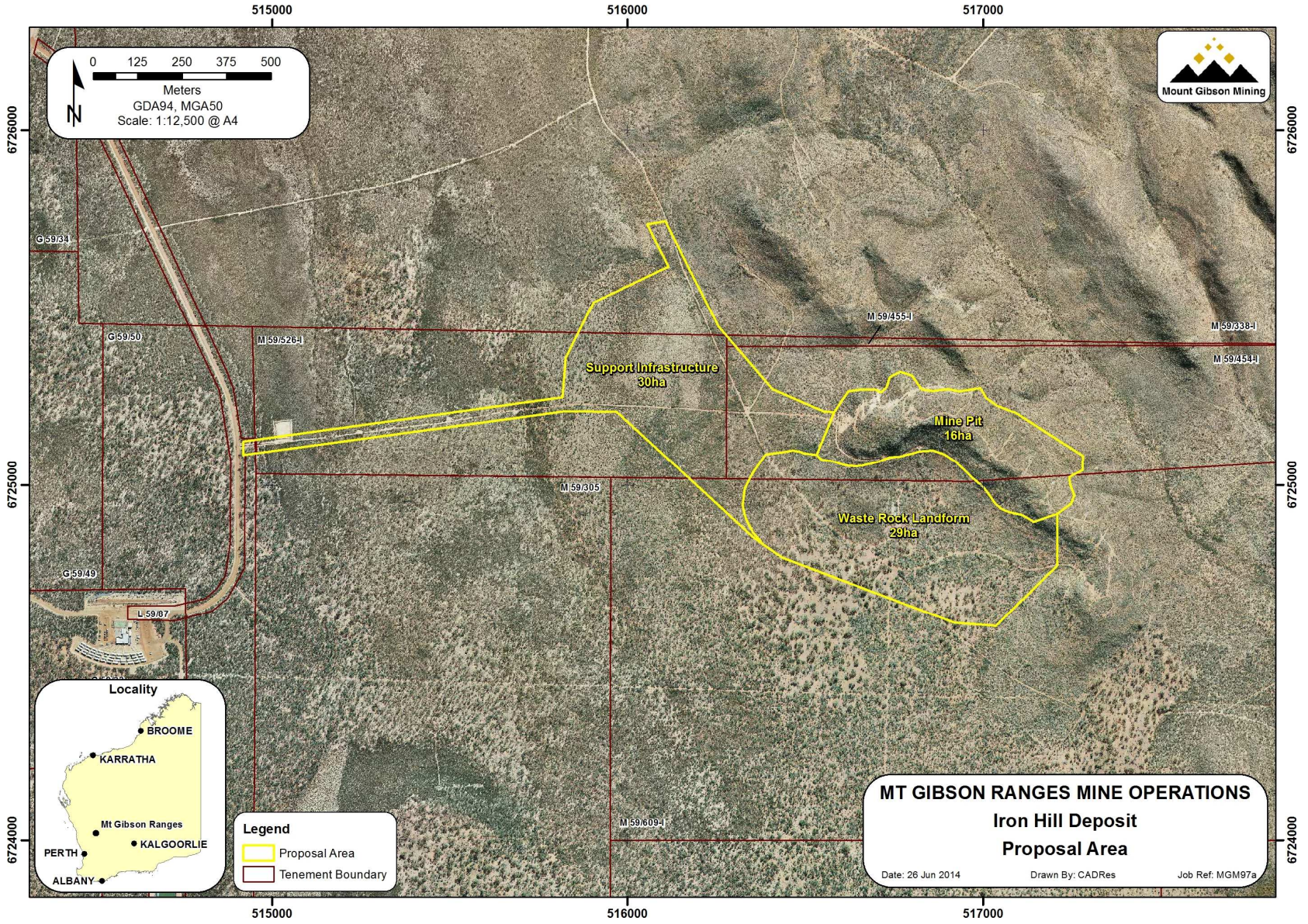


Figure 1 Proposal Location

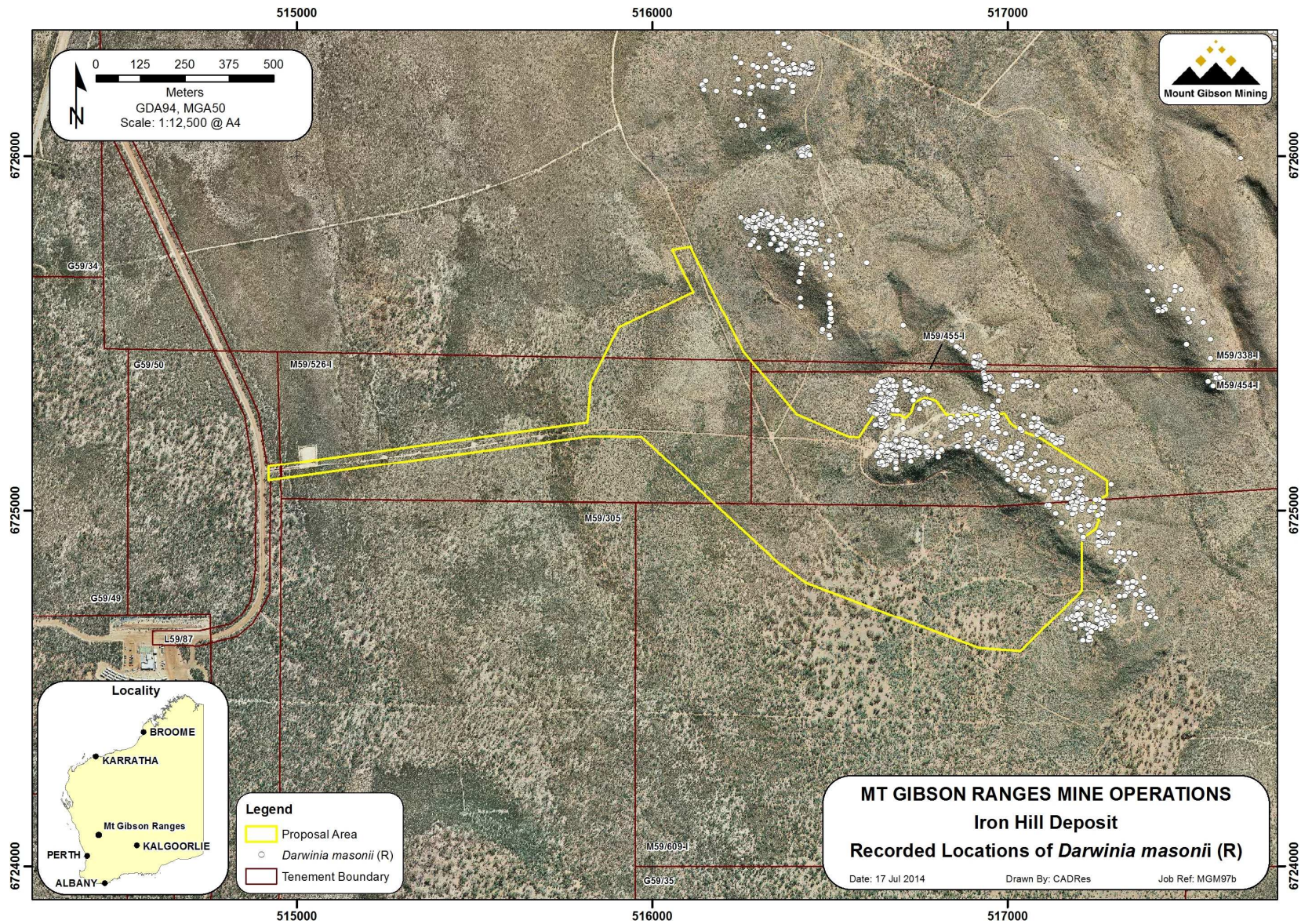


Figure 2 Proposal Location and nearest records of the Rare Flora taxon *Darwinia masonii*

ATTACHMENT 4

Assessment of the Threatened Taxa Category for *Darwinia masonii* using IUCN (2012) Criteria

(Globe Environments 2014)



Iron Hill Deposit

Assessment of the Threatened Taxa Category for
Darwinia masonii using IUCN (2012) Criteria

August 2014

Document History

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The assistance and contributions of staff from Mount Gibson Mining Limited is acknowledged and appreciated.

Limitations

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1 Purpose

Mount Gibson Mining Limited (MGX) is a supplier of Western Australian iron ore, with mine operations at the Mt Gibson Ranges and Tallering Peak in the Mid-West Region, and at Koolan Island in the Kimberley.

MGX proposes to extend its operations at the Mt Gibson Ranges to include development of the Iron Hill Deposit, located approximately 3km south-east of the existing Mt Gibson Ranges mine operations. The Iron Hill Deposit contains high-grade hematite ore with the potential to extend the operational life of the Mt Gibson Ranges mine operations.

Development of the Iron Hill Deposit will impact the flora taxon *Darwinia masonii*, which is currently recorded only from the area of the Mt Gibson Ranges. *Darwinia masonii* has been declared as "Rare Flora" under the *Wildlife Conservation Act 1950 (WA)* and as a "Threatened Species" of flora under the *Environment Protection and Biodiversity Conservation Act 1999 (C'th)* as a result of its restricted distribution.

To assist with the environmental assessment of the Iron Hill Deposit, and having regard to the conservation status of *Darwinia masonii*, it is appropriate to undertake an assessment of the significance of impact of the Iron Hill Deposit to *Darwinia masonii* using the internationally accepted conservation criteria of the International Union for Conservation of Nature (IUCN) (IUCN 2012).

This report has been prepared to assess the potential for any change to the threatened taxa category for *Darwinia masonii* as a result of development of the proposed Iron Hill Deposit using the IUCN (2012) criteria. The IUCN (2012) criteria used in this assessment report is consistent with the approach used by the Department of Parks and Wildlife (DPaW) in assessment under the *Wildlife Conservation Act 1950 (WA)* and by the Department of the Environment (DoE) in assessment under the *Environment Protection and Biodiversity Conservation Act 1999 (C'th)*.

2 Taxon Information

Darwinia masonii is an erect shrub to 3m tall with narrow leaves and distinctive tubular pinkish flowers (DPaW 2008). *Darwinia masonii* is currently recorded only from the ironstone hills of the Mt Gibson Ranges, with a total recorded population of 17,818 individuals within an area of approximately 6km². Based on survey data identified in ATA Environmental (ATA) (2004), Coffey Environments (Coffey) (2008), MBS Environmental (MBS) (2013) and Maia Environmental Consultancy (Maia) (2014), the *Darwinia masonii* population of 17,818 individuals comprises 15,486 mature individuals (87%), 1,790 juveniles (10%), and 542 dead individuals (3%). Table 1 summarises the current population records for *Darwinia masonii*.

Data Source	<i>Darwinia masonii</i> Population			
	Mature	Juvenile	Dead	Total
ATA (2004)	13,931	1,724	541	16,196¹
Coffey (2008)	170 ²	7 ²	0	177³
MBS (2013)	548 ²	23 ²	0	571⁴
Maia (2014)	837	36	1	874
Total	15,486	1,790	542	17,818

Table 1 Population Records for *Darwinia masonii*. Notes: ¹ ATA (2004) records reduced from 16,573 individuals to 16,196 individuals by deletion of 6 records duplicate with Coffey (2008), deletion of 325 records duplicate with Maia (2014) and deletion of 46 records determined to be erroneous by MGX field survey; ² The mature-juvenile proportions for Coffey (2008) and MBS (2013) are estimated based on the mature-juvenile proportions identified by Maia (2014); ³ Coffey (2008) provides data for 177 records rather than 176 records identified within the report text; ⁴ MBS (2013) records reduced from 723 individuals to 571 individuals by deletion of 152 records duplicate with ATA (2004).

Darwinia masonii is one of more than 50 Western Australian species of the genus *Darwinia*, with this genus comprising of a number of taxa considered to be naturally rare due to limiting natural factors such as substrate preferences or breeding biology constraints (MGX & Extension Hill Pty Ltd (EHPL) 2013).

Research on *Darwinia masonii* undertaken on behalf of MGX & EHPL by the Botanic Gardens and Parks Authority (BGPA) (BGPA 2010) has identified the following key information regarding the reproductive biology, population genetics and restoration ecology of *Darwinia masonii*:

- (a) Germination of fresh *Darwinia masonii* seed is naturally low. Results of seed bank trials indicate a complex germination/dormancy strategy combining a requirement for physical seed coat degradation, environmental (seasonal temperature) curing with cycling in-and-out of dormancy, and heat/smoke-related physiological responses. Seedling survival during the first summer has been recorded at approximately 10%. Germination can be improved artificially by a combination of physical treatments and smoke application (mimicking the effect of fire for post-fire seedling recruitment, as described below).
- (b) *Darwinia masonii* are killed by fire, however, fire also results in high post-fire seedling recruitment from long-lived soil-stored seed, with only limited recruitment between fires within older populations.
- (c) Reproduction (i.e. flowering, fruiting) commences in *Darwinia masonii* from 6 years of age, with flowering and seed production taking place over an extended period during spring and early summer. Seed production varies, with between approximately 10 to 60 seeds

per plant per year in mature individuals. Pollination of *Darwinia masonii* is predominantly by a species of Honeyeater (a bird), with seed dispersal predominantly by ants. Reduced seed quality can arise from inbreeding and from predation by moth larvae.

- (d) *Darwinia masonii* enter a period of physical dormancy during summer drought by reducing transpiration and photosynthetic function, with the capacity to restore tissues following rainfall. Roots of *Darwinia masonii* have the capacity to enter large cracks, pores and fissures in the regolith and may achieve considerable root depth (up to 10m). Whilst mortality is rare amongst mature *Darwinia masonii* (with this taxon being long-lived, to approximately 100 years), drought has been observed to contribute to mortality in both mature individuals and juveniles.
- (e) Genetic structuring between groups of *Darwinia masonii* is low, however some groups do not mate randomly, suggesting some weak barriers to gene flow across the Mt Gibson Ranges. Analysis of molecular variance of 7 groups across the Mt Gibson Ranges partitioned approximately 94% of variation within populations, and 6% between populations, indicating weak population structure. Groups sampled in areas of the Mt Gibson Ranges referred to as Extension Hill South and Mt Gibson South were statistically identified as being genetically isolated, in that the *Darwinia masonii* in these groups do not appear to mate randomly with the other groups on the Mt Gibson Ranges, with possible explanations for this including the sampling different generations (due to differing fire histories between the sampled groups).
- (f) Successful propagation of *Darwinia masonii* has been demonstrated using green-stock production from cuttings. Survival of *Darwinia masonii* green-stock cuttings transplanted to field sites averaged approximately 10% after 5 years in unwatered plots, whilst cuttings in plots that were irrigated for the first 2 years (but not after) indicated a survival rate of approximately 90% after 5 years¹. Cuttings that were irrigated were recorded as commencing flowering in the first year.

3 Conservation Status

Darwinia masonii was declared as "Rare Flora" under the *Wildlife Conservation Act 1950* (WA) in November 1980, and listed as a "Threatened Species" of flora under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th) in July 2000 (DPaW 2008).

As outlined by DPaW (2008), assessment using the IUCN (2001) criteria identified *Darwinia masonii* as meeting the category of "Vulnerable" under Criteria D2. The Criteria D2 Vulnerable category applies to taxa with an area of occupancy of <20km² and/or occurs at ≤5 locations, and with a plausible future threat that could drive the taxon to the categories of "Critically Endangered" or "Extinct" in a very short period of time (IUCN 2012; IUCN 2014). The basis for the Criteria D2 determination by DPaW resulted from *Darwinia masonii* having a restricted area of occupancy (<6km² and 1 location) and with mining considered to be a plausible future threat.

As identified by DoE (2008; 2013), the DPaW (2008) assessment has previously been accepted for the purpose of confirming of the listing of *Darwinia masonii* as a Threatened Species of flora under the *Environment Protection and Biodiversity Conservation Act 1999* (C'th).

¹ As an update to BGPA (2010), the survival rate after approximately 9 years (2005 to 2014) is approximately 80% within irrigated plots (irrigated for the first 2 years, but not after), with approximately 90% of measured individuals within the irrigated plots recorded as being reproductive during the 2013 year (pers. com. J Sackmann of MGX, March 2014).

4 Assessment

4.1 *Darwinia masonii* Population Impacts

As outlined above, *Darwinia masonii* is currently recorded only from the ironstone hills of the Mt Gibson Ranges, with a total recorded population of 17,818 individuals comprising 15,486 mature individuals (87%), 1,790 juveniles (10%), and 542 dead individuals (3%).

Based on the current *Darwinia masonii* population records (Table 1) and the operational area outlined by the Statement 753 approval under the *Environmental Protection Act 1986* (WA) (WA Minister for Environment 2007), the approved Mt Gibson Ranges mine operations coincide with 2,694 individuals of *Darwinia masonii*, comprising 2,632 mature individuals, 24 juveniles and 38 dead individuals; equating to approximately 15% of the total *Darwinia masonii* population of 17,818 individuals. The environmental assessment of the Mt Gibson Ranges mine operations (ATA 2006; EPA 2006) identified a similar impact at approximately 16% (being 2,493 individuals of 16,038 mature individuals and juveniles, dead individuals excluded using only the ATA (2004) data).

Based on an assessment of the current aerial imagery of the approved Mt Gibson Ranges mine operations, a total of 1,688 individuals of *Darwinia masonii* have been removed to date from within the area of the approved Mt Gibson Ranges mine operations, comprising 1,639 mature individuals, 22 juveniles and 27 dead individuals; equating to approximately 9% of the *Darwinia masonii* population of 17,818 individuals. A further 1,055 individuals of *Darwinia masonii* have yet to be removed from within the area of the approved Mt Gibson Ranges mine operations; equating to approximately 6% of the *Darwinia masonii* population of 17,818 individuals.

MGX proposes to extend its operations at the Mt Gibson Ranges to include development of the Iron Hill Deposit, located approximately 3km south-east of the existing Mt Gibson Ranges mine operations. Based on the *Darwinia masonii* population records (Table 1) and an assessment of the current aerial imagery, development of the Iron Hill Deposit is expected to impact 1,262 individuals of *Darwinia masonii*, comprising 573 mature individuals, 595 juveniles and 94 dead individuals; equating to approximately 7% of the *Darwinia masonii* population.

Table 2 provides a summary of the *Darwinia masonii* population in relation to the impact of the approved Mt Gibson Ranges mine operations under the Statement 753 approval, the proposed Iron Hill Deposit, and the non-impact areas. As identified by Table 2, the cumulative impact of all mining developments will be 3,956 individuals (22%) of the *Darwinia masonii* population, with the remaining 13,862 individuals (78%) occurring within non-impact areas across the Mt Gibson Ranges.

	<i>Darwinia masonii</i> Population		<i>Darwinia masonii</i> Population Cumulative Impact	
	No. Individuals	% Individuals	No. Individuals	% Individuals
Statement 753	2,694 (2,632 mature, 24 juvenile, 38 dead)	15%	3,956	22%
Iron Hill Deposit	1,262 (573 mature, 595 juvenile, 94 dead)	7%		
Non-impact	13,862 (12,281 mature, 1,171 juvenile, 410 dead)	78%	13,862	78%
Total	17,818	100%	17,818	100%

Table 2 *Darwinia masonii* Population. The total recorded population for *Darwinia masonii* is identified, including the proportional distribution between the areas of the approved Mt Gibson Ranges mine operations, the proposed Iron Hill Deposit, and the non-impact areas.

4.2 *Darwinia masonii* IUCN Population Impacts

This report has been prepared to assess the potential for any change to the threatened taxa category for *Darwinia masonii* as a result of development of the proposed Iron Hill Deposit using the IUCN (2012) criteria. The IUCN criteria are considered to be the international benchmark for assessing the conservation status of flora and fauna taxa, with a summary of the assessment criteria provided in Appendix 1 (IUCN 2014). This assessment report considers the potential for any change to the threatened taxa category for *Darwinia masonii* as a result of the development of the approved Mt Gibson Ranges mine operations and the development of the proposed Iron Hill Deposit.

IUCN (2012) defines a population only by mature individuals, such that non-reproductive juveniles and dead individuals are excluded from assessment. As such, based on the population records identified at Table 1, the *Darwinia masonii* population for the purposes of an assessment using the IUCN (2012) criteria (i.e. live and mature, and herein referred to as the "*Darwinia masonii* IUCN Population") is 15,486 individuals. Consistent with this approach, the approved Mt Gibson Ranges mine operations coincide with 2,632 individuals (17%) of the *Darwinia masonii* IUCN Population of 15,486 individuals, with the development of the Iron Hill Deposit expected to impact 573 individuals (4%) of the *Darwinia masonii* IUCN Population.

Noting the majority of the population data for *Darwinia masonii* is now approximately 10 years old (i.e. ATA 2004), in undertaking this assessment, it is appropriate to contemplate potential changes to the *Darwinia masonii* IUCN Population structure across the Mt Gibson Ranges over this time, specifically, the potential for juveniles to have become mature over this period. This consideration is particularly relevant to the area of the Iron Hill Deposit, for which ATA (2004) noted contained the highest proportion of juveniles as a result of a (then) recent fire. Based on the results of BGPA (2010) which identified a seedling survival rate at approximately 10%, it would be reasonable to expect that approximately 10% of the 1,731 juveniles recorded by both ATA (2004) and Coffey (2008) across the Mt Gibson Ranges (Table 1) may survive to reach maturity (noting the recent MBS (2013) and Maia (2014) survey data does not require this same consideration as the mature-juvenile proportions are considered to be current). Accordingly, to account for juveniles that may have reached maturity, for the purposes of this assessment, the *Darwinia masonii* IUCN Population

is adjusted by 173 individuals (i.e. 10% of 1,731 juveniles recorded by ATA (2004) and Coffey (2008)) from 15,486 to 15,659 individuals. This adjustment to the *Darwinia masonii* IUCN Population applies across the Mt Gibson Ranges, and is most pronounced in the general area of Iron Hill due to the greater proportion of juveniles recorded in this area by ATA (2004). To note, the revised *Darwinia masonii* IUCN Population has not been adjusted to account for mature individuals which may have since died, noting the results of BGPA (2010) which identified *Darwinia masonii* to be long-lived (circa 100 years).

In applying the above adjustments to the *Darwinia masonii* IUCN Population, the impact of the approved Mt Gibson Ranges mine operations is adjusted from 2,632 individuals to 2,634 individuals of *Darwinia masonii* IUCN Population (an addition of 2 individuals [10% of 24 juveniles]); which equates to approximately 17% of the 15,659 individuals of the *Darwinia masonii* IUCN Population. Similarly, the impact of the Iron Hill Deposit is adjusted from 573 individuals to 633 individuals of *Darwinia masonii* IUCN Population (an addition of 60 individuals [10% of 595 juveniles]); which equates to approximately 4% of the 15,659 individuals of the *Darwinia masonii* IUCN Population. The non-impact areas are also similarly adjusted from 12,281 individuals to 12,392 individuals of *Darwinia masonii* IUCN Population (an addition of 111 individuals [10% of 1,107 juveniles]); which equates to approximately 79% of the 15,659 individuals of the *Darwinia masonii* IUCN Population occurring within non-impact areas across the Mt Gibson Ranges.

Table 3 provides a summary of the *Darwinia masonii* IUCN Population used by this assessment in relation to the impact of the approved Mt Gibson Ranges mine operations under the Statement 753 approval, the proposed Iron Hill Deposit, and the non-impact areas.

	<i>Darwinia masonii</i> IUCN Population (MATURE only, ADJUSTED)		<i>Darwinia masonii</i> IUCN Population Cumulative Impact	
	No. Individuals	% Individuals	No. Individuals	% Individuals
Statement 753	2,634 (2,632 mature + 2 [10% of 24 juveniles])	17%	3,267	21%
Iron Hill Deposit	633 (573 mature + 60 [10% of 595 juveniles])	4%		
Non-impact	12,392 (12,281 mature + 111 [10% of 1,107 ¹ juveniles])	79%	12,392	79%
Total	15,659	100%	15,659	100%

Table 3 *Darwinia masonii* IUCN Population. The total population and calculations for the *Darwinia masonii* IUCN Population records are identified, including the proportional distribution between the areas of the approved Mt Gibson Ranges mine operations, the proposed Iron Hill Deposit, and the non-impact areas. The adjustments to the *Darwinia masonii* IUCN Population to account for juveniles reaching maturity are identified.

¹ Of the total 1,171 juveniles of *Darwinia masonii* recorded in non-impact areas (Table 2), 1,107 juveniles were recorded by ATA (2004) and Coffey (2008) within non-impact areas. The *Darwinia masonii* IUCN Population adjustments are only applicable to the ATA (2004) and Coffey (2008) data.

In applying the adjusted *Darwinia masonii* IUCN Population, it is evident that the approved Mt Gibson Ranges mine operations under the Statement 753 approval of 2,634 individuals equates to approximately 17% of the *Darwinia masonii* IUCN Population. The proposed Iron Hill Deposit will impact an additional 633 individuals; equating to approximately 4% of the *Darwinia masonii* IUCN Population. The cumulative impact of the approved Mt Gibson Ranges mine operations and the proposed Iron Hill Deposit will therefore impact 3,267 individuals; equating to 21% of the *Darwinia masonii* IUCN Population. The remaining 12,392 individuals of the *Darwinia masonii* IUCN Population, equating to 79%, occur within non-impact areas across the Mt Gibson Ranges.

Table 4 provides an assessment using the IUCN (2012) criteria of the potential cumulative impact to the *Darwinia masonii* IUCN Population from the approved Mt Gibson Ranges mine operations and development of the proposed Iron Hill Deposit. Table 4 adopts the IUCN (2014) summary format (Appendix 1), which is consistent with the DPaW (2008) format used for assessment under the *Wildlife Conservation Act 1950* (WA). The assessment using the IUCN (2012) criteria has been undertaken consistent with the relevant guidance contained within both IUCN (2012) and IUCN (2014). The threatened taxa criteria considered applicable have been highlighted in yellow, with a description provided in the right-hand column to identify the basis for the assessment outcome.

5 Results

The IUCN (2012) threatened taxa category of "Vulnerable" is applicable to *Darwinia masonii* based on the cumulative impact meeting Criteria D2. As identified by Table 3, the cumulative impact includes both the approved Mt Gibson Ranges mine operations and the proposed Iron Hill Deposit. As identified by Table 4, Criteria D2 is applicable as *Darwinia masonii* has a restricted area of occupancy of $\leq 20\text{km}^2$ and occurs in ≤ 5 locations, with climate (principally extended drought) posing a risk of increasing this threat category.

No other criteria were met.

6 Discussion

Whilst the proposed development of the Iron Hill Deposit is expected to impact *Darwinia masonii*, the cumulative impact to *Darwinia masonii* is not expected to result in a change or increase to the current threatened taxa category of "Vulnerable" under Criteria D2 of IUCN (2012).

The results of this assessment are consistent with the assessment outcomes identified by DPaW (2008), in which the IUCN (2012) Criteria D2 was also considered to be applicable for the Vulnerable category, with no other criteria being met.

Whilst Criteria D2 was identified by both DPaW (2008) and this assessment as being applicable, the risk basis of future mining outlined by DPaW (2008) for a potential increase in the threat category (i.e. to "Critically Endangered" or "Extinct") is not considered to be applicable, with future mining (i.e. development of the Iron Hill Deposit) demonstrated to not increase the threat category. As identified by Table 4, climate (principally extended drought) is considered to be the risk factor relevant to a potential future increase in the threat category, noting that as the population occurs at only a single location, a single climate event could detrimentally affect the entire population.

Table 4 Assessment of Threatened Taxa Categories for *Darwinia masonii* using IUCN (2012) Criteria. The assessment for *Darwinia masonii* includes consideration of the impact of the approved Mt Gibson Ranges mine operations and the development of the proposed Iron Hill Deposit. The assessment has been undertaken consistent with the relevant guidance contained within IUCN (2012) and IUCN (2014), including in the application of defined terms relevant to interpretation of each criteria. The yellow highlighted criteria are considered to be applicable to the *Darwinia masonii* IUCN Population.

IUCN (2012) CRITERIA		ASSESSMENT											
<p>A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4</p> <table border="1"> <thead> <tr> <th></th> <th>Critically Endangered</th> <th>Endangered</th> <th>Vulnerable</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>≥ 90%</td> <td>≥ 70%</td> <td>≥ 50%</td> </tr> <tr> <td>A2, A3 & A4</td> <td>≥ 80%</td> <td>≥ 50%</td> <td>≥ 30%</td> </tr> </tbody> </table> <p>A1. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased, based on any of the following: (a) direct observation (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality (d) actual or potential levels of exploitation (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.</p> <p>A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on any of the following: (a) direct observation (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality (d) actual or potential levels of exploitation (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.</p>		Critically Endangered	Endangered	Vulnerable	A1	≥ 90%	≥ 70%	≥ 50%	A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%	<p>NOT APPLICABLE This criterion relates to past population reduction that is reversible, understood and has ceased. There is no recorded past population reduction known to be applicable to <i>Darwinia masonii</i> that is reversible, understood and has ceased.</p> <p>NOT APPLICABLE This criterion relates to past population reduction that may not have ceased, may not be understood or may not be reversible. The past population reduction of <i>Darwinia masonii</i> of 9% (1,639 of 15,659 individuals) from development of the approved Mt Gibson Ranges mine operations which have not ceased (i.e. impact to date, with some areas of the approved Mt Gibson Ranges mine operations yet to be developed), is less than the ≥30% criteria under A2. The past population reduction of <i>Darwinia masonii</i> (existing impact plus the remaining approved impact) of 17% (2,634 of 15,659 individuals) from development of the approved Mt Gibson Ranges mine operations (to completion) is also less than the ≥30% criteria under A2.</p>
	Critically Endangered	Endangered	Vulnerable										
A1	≥ 90%	≥ 70%	≥ 50%										
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%										

<p>A3. Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years), based on any of the following:</p> <ul style="list-style-type: none"> (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality (d) actual or potential levels of exploitation (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites. <p>A4. An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in the future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on any of the following:</p> <ul style="list-style-type: none"> (a) direct observation (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality (d) actual or potential levels of exploitation (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites. 	<p>NOT APPLICABLE</p> <p>This criterion relates to future population reduction. The projected future population reduction for <i>Darwinia masonii</i> of 21% (3,267 of 15,659 individuals) from development of the approved Mt Gibson Ranges mine operations and the proposed Iron Hill Deposit is less than the ≥30% criteria under A3.</p> <p>NOT APPLICABLE</p> <p>This criterion relates to past and future population reductions that may not have ceased, may not be understood or may not be reversible. The projected future population reduction for <i>Darwinia masonii</i> of 21% (3,267 of 15,659 individuals) from development of the approved Mt Gibson Ranges mine operations and the proposed Iron Hill Deposit is less than the ≥30% criteria under A3.</p>						
<p>B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)</p> <p>B1. Extent of occurrence (EOO)</p> <table border="1" data-bbox="893 840 1236 1787"> <tbody> <tr> <td>Critically Endangered</td> <td>< 100 km²</td> </tr> <tr> <td>Endangered</td> <td>< 5,000 km²</td> </tr> <tr> <td>Vulnerable</td> <td>< 20,000 km²</td> </tr> </tbody> </table>	Critically Endangered	< 100 km ²	Endangered	< 5,000 km ²	Vulnerable	< 20,000 km ²	<p>NOT APPLICABLE</p> <p>This criterion relates to the Extent of Occurrence (EOO) and where the locations are severely fragmented or small, there is a continuing decline or there are extreme fluctuations. Whilst the EOO for <i>Darwinia masonii</i> meets the occurrence area and number of locations applicable to the Critically Endangered category (i.e. EOO <100km² under B1, and 1 location under B2(a)), <i>Darwinia masonii</i> is not subject to a continuing decline (i.e. B2(b)) or extreme fluctuations (i.e. B2(c)) as defined by IUCN (2014).</p>
Critically Endangered	< 100 km ²						
Endangered	< 5,000 km ²						
Vulnerable	< 20,000 km ²						

<p>B2. Area of occupancy (AOO) < 10 km² AND at least 2 of the following 3 conditions: (a) Severely fragmented OR Number of locations = 1 (b) Continuing decline in observed, estimated, inferred or projected in any of (i) extent of occurrence (ii) area of occupancy, (iii) area, extent and/or quality of habitat, (iv) number of locations or subpopulations; (v) number of mature individuals. (c) Extreme fluctuations in any of (i) extent of occurrence, (ii) area of occupancy, (iii) number of locations or subpopulations; (iv) number of mature individuals.</p>	<p>NOT APPLICABLE This criterion relates to the Area of Occupancy (AOO) and where the locations are severely fragmented or small, there is a continuing decline or there are extreme fluctuations. Whilst the AOO for <i>Darwinia masonii</i> meets the occurrence area and number of locations applicable to the Critically Endangered category (i.e. AOO < 10km² under B2, and 1 location under B2(a)), <i>Darwinia masonii</i> is not subject to a continuing decline (i.e. B2(b)) or extreme fluctuations (i.e. B2(c)) as defined by IUCN (2014).</p>
<p>C. Small population size and decline</p> <p>Number of mature individuals < 250 AND at least one of C1 or C2</p> <p>C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in the future)</p> <p>25% in 3 years or 1 generation (whichever is longer)</p> <p>20% in 5 years or 2 generations (whichever is longer)</p> <p>10% in 10 years or 3 generations (whichever is longer)</p>	<p>NOT APPLICABLE This criterion relates to the number of mature individuals and a past or future continuing decline in the population. The <i>Darwinia masonii</i> population of 15,659 mature individuals is greater than the "Vulnerable" criteria of <10,000 individuals under C.</p>
<p>C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions: (a)(i) Number of mature individuals in each subpopulation: ≤ 50 (a)(ii) % of mature individuals in one subpopulation = 90-100% (b) extreme fluctuations in the number of mature individuals</p>	<p>NOT APPLICABLE This criterion relates to the number of mature individuals and a past or future continuing decline in the population. The <i>Darwinia masonii</i> population of 15,659 mature individuals is greater than the "Vulnerable" criteria of ≤1,000 individuals under C.</p>

D. Very small or restricted population		Critically Endangered	Endangered	Vulnerable
D	Number of mature individuals	< 50	< 250	< 1,000
D2	Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	<p>D1. Typically: AOO < 20 km² or number of locations ≤ 5</p>
				<p>NOT APPLICABLE This criterion relates to the number of mature individuals and a past or future decline in the population. The <i>Darwinia masonii</i> population of 15,659 mature individuals is greater than the "Vulnerable" criteria of <1,000 individuals under D.</p> <p>CRITERIA D2 IS APPLICABLE FOR THE 'VULNERABLE' CATEGORY This criterion relates to where a restricted area of occupancy (AOO) or the number of locations may result in the taxon being driven to the threat categories of "Critically Endangered" or "Extinct" in a very short period of time due to a plausible future threat. The D2 criteria are applicable for both the AOO of < 20 km² and the number of locations being ≤ 5. The AOO of <i>Darwinia masonii</i> is <6km² and the number of locations is 1. Climate (principally extended drought) is considered to be a plausible future threat that may have a likelihood of driving <i>Darwinia masonii</i> to the threat categories of "Critically Endangered" or "Extinct" in a very short period of time, noting as the entire population occurs at only a single location, a single climate event could detrimentally affect the entire population. Whilst development of the approved Mt Gibson Ranges mine operations and development of the proposed Iron Hill Deposit will have a notable impact to <i>Darwinia masonii</i> (21% being 3,267 of 15,659 individuals), this impact is fixed (i.e. not a continuing decline), such that these mining developments are not expected to have a likelihood of increasing the threat category to "Critically Endangered" or "Extinct" in a very short period of time.</p>

E. Quantitative Analysis

Indicating the probability of extinction in the wild to be:

Critically Endangered
≥ 50% in 10 generations, whichever is longer (100 years max.)

Endangered
≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)

Vulnerable
≥ 10% in 100 years

NOT APPLICABLE
Sufficient data does not exist to undertake a quantitative analysis of the risk of extinction in the wild for *Darwinia masonii*.

7 References

All references cited within this report are identified below. Where an organisational name has changed since the original date of publication, the new organisational name has been used and the former organisational name noted.

Subject to the provisions of the *Copyright Act 1968* (C'th), a copy of each reference to which MGM has authority to reproduce is provided on the compact disc attached to this report.

Western Australian legislation cited in this report can be obtained from the State Law Publisher at <http://www.slp.wa.gov.au>. Commonwealth legislation cited in this report can be obtained from the Australasian Legal Information Institute at http://www.austlii.edu.au/au/legis/cth/consol_act/.

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Appendix 1

IUCN criteria (IUCN 2014)

A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%
<p>A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.</p> <p>A2 Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p>A3 Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3].</p> <p>A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be reversible.</p>	<p>based on any of the following:</p>		<p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.</p>
B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)			
	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			
C. Small population size and decline			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%
(b) Extreme fluctuations in the number of mature individuals			
D. Very small or restricted population			
	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	D1. < 1,000
D2. Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	D2. typically: AOO < 20 km ² or number of locations ≤ 5
E. Quantitative Analysis			
	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years



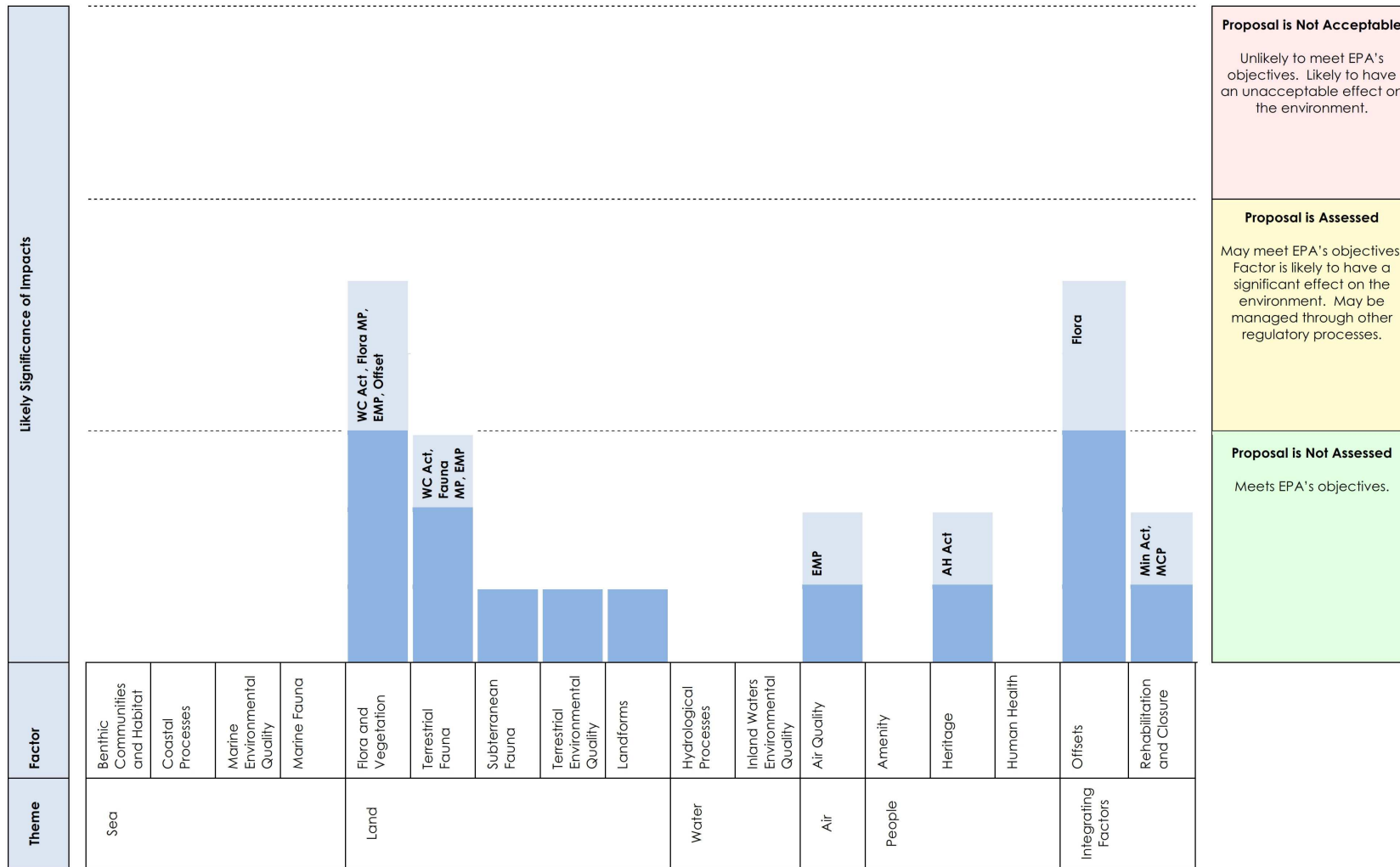
for professional environmental services in:

Project Management - Impact Assessment - Government Approvals
Planning & Design - Management Plans - Training & Legislation
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ATTACHMENT 5

Assessment of Environmental Factors and Objectives
against the Significance Framework

(as per EPA 2013a and EPA 2013b)



Framework:

Key:

- WC Act: *Wildlife Conservation Act 1950 (WA)*
- AH Act: *Aboriginal Heritage Act 1972 (WA)*
- Min Act: *Mining Act 1978 (WA)*
- Flora MP: *MGX & EHPL (2013) Mt Gibson Iron Ore Mine and Infrastructure Project Darwinia masonii Management and Monitoring Plan*
- Fauna MP: *MGX & EHPL (2013) Mt Gibson Iron Ore Mine and Infrastructure Project Malleefowl Management Plan*
- EMP: *MGX & EHPL (2008) Mt Gibson Iron Ore Mine and Infrastructure Project Environmental Management Plan*
- MCP: *Mine Closure Plan*

THEME	FACTOR	OBJECTIVE	POTENTIAL IMPACT	MANAGEMENT and PREDICTED OUTCOME	KEY ENVIRONMENTAL FACTOR? (KEF)
Sea	Benthic Communities and Habitat	To maintain the structure, function, diversity, distribution and viability of benthic communities and habitats at local and regional scales.	Not applicable – the Proposal is not located in proximity to the marine environment.	Not applicable	No
	Coastal Processes	To maintain the morphology of the subtidal, intertidal and supratidal zones and the local geophysical processes that shape them.	Not applicable – the Proposal is not located in proximity to the marine environment.	Not applicable	No
	Marine Environmental Quality	To maintain the quality of water, sediment and biota so that the environmental values, both ecological and social, are protected.	Not applicable – the Proposal is not located in proximity to the marine environment.	Not applicable	No
	Marine Fauna	To maintain the diversity, geographic distribution and viability of fauna at the species and population levels.	Not applicable – the Proposal is not located in proximity to the marine environment.	Not applicable	No
Land	Flora and Vegetation	To maintain representation, diversity, viability and ecological function at the species, population and community level.	<p>The Proposal would clear the following flora and vegetation:</p> <p>(a) Rare Flora taxa <i>Darwinia masonii</i> and <i>Lepidosperma gibsonii</i>;</p> <p>(b) Native vegetation comprising parts of four mapped vegetation units; and</p> <p>(c) DPaW-classified Priority Ecological Community (PEC).</p> <p>Clearing of <i>Darwinia masonii</i>, <i>Lepidosperma gibsonii</i> and vegetation units (that form part of mapped regional Significant Communities) is unavoidable as they coincide with the Mine Pit, which cannot be</p>	<p>The effect of the Proposal to flora and vegetation values will be managed and mitigated through the implementation of:</p> <p>(a) Environmental Management Plan (MGX & EHPL 2008).</p> <p><i>Darwinia masonii</i> will additionally be managed through the implementation of:</p> <p>(b) <i>Darwinia masonii</i> Interim Recovery Plan (Department of Parks and Wildlife, 2008b) and Recovery Plan Rev 0 (MGX &</p>	Yes

			<p>relocated as the mineral resource is fixed. The DPAW-classified PEC also coincides with the Waste Rock Landform and Support Infrastructure.</p> <p>The effect of the Proposal to <i>Darwinia masonii</i> is expected to increase the cumulative impact by approximately 7% due to the Mt Gibson Ranges mining operations up to a maximum of 22% of the total recorded population. As outlined by Globe Environments (2014), the effect of the Proposal is not expected to change the threat category of "Vulnerable" currently applying to <i>Darwinia masonii</i> under the IUCN (2012) criteria.</p> <p>The effect of the Proposal to <i>Lepidosperma gibsonii</i> is expected to increase the cumulative impact by approximately 1% to a maximum of 16% of the total recorded population. The increase is not expected to be environmentally significant having regard to the number of individuals to be cleared and the greater number of individuals retained at the Mt Gibson Ranges and its surrounds.</p> <p>The Proposal contains 70ha of native vegetation that will require clearing to enable its implementation. It comprises four vegetation units, each having broader distributions across the area of the Mt Gibson Ranges (i.e. not restricted to the area of the Proposal). The Proposal would reduce the extent of native vegetation because of the Mt Gibson Ranges mine operations to a total of 1,405ha, that would represent a 6% increase in approved clearing area. Having regard to the extent of native vegetation across the broader Mt Gibson Ranges, and the distribution of the vegetation units beyond the area of the Proposal, the effect of the Proposal to</p>	<p>EHPL 2014).</p> <p>Implementation of the above plans and actions will enable management of aspects of the Proposal in relation to flora and vegetation to an acceptable level.</p> <p>To note, the impact to <i>Darwinia masonii</i> will also be subject to assessment and regulation by the Department of Parks and Wildlife (DPaW) under the <i>Wildlife Conservation Act 1950 (WA)</i> and by the Department of the Environment (DoE) under the <i>Environment Protection and Biodiversity Conservation Act 1999 (C'th)</i>. Any proposed taking of <i>Lepidosperma gibsonii</i> will also be subject to assessment and regulation by DPaW under the <i>Wildlife Conservation Act 1950 (WA)</i>.</p> <p>It is also proposed that environmental offsets would continue to apply for any residual impact as established by MS753 Schedule 2.</p>	
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			<p>vegetation is not expected to be environmentally significant.</p> <p>The Proposal coincides with mapped vegetation units equating to significant flora communities that, upon clearing, would reduce extent on the Mt Gibson Ranges. Based on the DPaW-classified Priority Ecological Community, the clearing area would be approximately 3% additional, increasing from 933ha (34%) to 1,005ha. The additional clearing is not expected to be environmentally significant having regard to the extent of Significant Communities and DPaW-classified PEC across the Mt Gibson Ranges and its surrounds.</p> <p>The Proposal would also clear other flora taxa which are not of conservation significance yet, as these are common with broad regional distributions, the impact to these other flora is not expected to be environmentally significant.</p>		
	Landforms	To maintain the variety, integrity, ecological functions and environmental values of landforms and soils.	<p>The Proposal would develop part of the Mt Gibson Ranges at elevations between approximately 330mAHD to 420mAHD. The Proposal will involve the removal of part of the Iron Hill ridge to construct a Mine Pit (a depression), and the construction of an adjacent Waste Rock Landform (an elevated land mass).</p> <p>The area of the Proposal is not considered to have significant landform values in context with other parts of the Mt Gibson Ranges including Extension Hill (445mAHD) and Gibson Hill (445mAHD), as well in context with the surrounding regional landforms which include Mt Singleton (660mAHD), Warriedar Hill (545mAHD), Wylacoopin Hill (540mAHD), Milgoo Peak (530mAHD), Windaning Hill (510mAHD), Chulaar Hill (495mAHD), Mt Kenneth (490mAHD),</p>	<p>The effect of the Proposal to landforms and soils will be localised and long term landform outcomes will be managed through rehabilitation and the implementation of:</p> <p>(a) Mine Closure Plan in accordance with the <i>Mining Act 1978 (WA)</i>.</p> <p>Implementation of a Mine Closure Plan would also manage long-term visual effects and stability of aspects of the Proposal upon closure.</p> <p>A Mine Closure Plan is being prepared for the Mt Gibson Ranges mine operations consistent with the DMP & EPA (2011) document <i>Guidelines for Preparing Mine</i></p>	No

			<p>Murrungalgo Hill (490mAHD), Pinyalling Hill (490mAHD), Watheragabbing Hill (475mAHD) and Yadhanoo Hill (470mAHD).</p> <p>Ecological function and environmental values of rehabilitated landforms and soils will be planned and outcomes managed as part of an approved Mine Closure Plan.</p>	<p><i>Closure Plans</i>, to be regulated by DMP in accordance with the <i>Mining Act 1978 (WA)</i>. As part of the Mount Gibson Iron Ore & Infrastructure Project the Proposal can also be incorporated within a subsequent revision of the site's Mine Closure Plan.</p>	
	Subterranean Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.	<p>The Proposal will mine land that may potentially provide habitat for troglobitic subterranean fauna (as the mining would be above the groundwater table). The extent of potential habitat for troglobitic subterranean fauna across the area of the Mt Gibson Ranges, and its surrounds, is considered to be extensive. This potential habitat is also connected, with no known barriers (e.g. wide depressions, lakes, etc.) that would restrict the movement of troglobitic subterranean fauna between the area of the Proposal and other parts of the Mt Gibson Ranges. Whilst field surveys for troglobitic subterranean fauna have not been undertaken, having regard to the confined area of the Proposal and the area and connectivity of potential habitat, any impact of the Proposal to troglobitic subterranean fauna (if present) is unlikely to be environmentally significant.</p> <p>The Proposal is not expected to result in a significant environmental impact to stygobitic subterranean fauna (i.e. subterranean fauna living below the groundwater table). The Proposal involves mining above the groundwater table (no groundwater dewatering) with limited groundwater abstraction required for mining activities such as dust suppression. Accordingly, further consideration of the potential for impact to stygobitic subterranean fauna is not considered</p>	<p>The potential effects of the Proposal to subterranean fauna will be managed through:</p> <ul style="list-style-type: none"> (a) Minimising land clearing and ground excavations to the minimum extent possible (as per the Proposal design); (b) Restricting mining operations to above the groundwater table; and (c) Groundwater abstraction being undertaken in accordance with Groundwater Licence GWL166067 (DoW 2013) regulated by the Department of Water (DoW) under the <i>Rights in Water and Irrigation Act 1914 (WA)</i>. 	No

			necessary.		
	Terrestrial Environmental Quality	To maintain the quality of land and soils so that the environment values, both ecological and social, are protected.	The Proposal will utilise up to 75ha of land (including soils) which provide habitat for a variety of native flora and fauna. The extent to land disturbance is not expected to be environmentally significant, having regard to the broader area of the Mt Gibson Ranges and its surrounds.	Terrestrial environmental quality will be managed through the implementation of: (a) Environmental Management Plan (MGX & EHPL 2008).	No
	Terrestrial Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.	<p>The Proposal will remove the following recorded terrestrial fauna species and fauna habitat:</p> <p>(a) Specially Protected Fauna taxon <i>Idiosoma nigrum</i> and its habitat; and</p> <p>(b) potential habitat for the Specially Protected Fauna taxa <i>Cacatua leadbeateri</i>, <i>Falco peregrinus</i> and <i>Leipoa ocellata</i>.</p> <p>The Proposal coincides with 16 active burrows of <i>Idiosoma nigrum</i> (i.e. burrows containing live individuals) and the surrounding fauna habitat. As outlined by Biologic (2014a), the low density of burrows recorded compared to results of other surveys in the mid-west region indicates that the area of the Mt Gibson Ranges is not a key habitat for <i>Idiosoma nigrum</i>. The reduced local abundance of <i>Idiosoma nigrum</i> is therefore not considered to be environmentally significant, having regard to the low density of burrows recorded across the area of the Mt Gibson Ranges, and the extensive area of potential habitat across the surrounding region.</p> <p>The Proposal may impact on potential habitat of <i>Cacatua leadbeateri</i>, <i>Falco peregrinus</i> and <i>Leipoa ocellata</i>. No direct impact to live individuals of <i>Cacatua leadbeateri</i>, <i>Falco peregrinus</i> or <i>Leipoa ocellata</i> is expected to occur. The clearing</p>	<p>Terrestrial fauna and their values (including Specially Protected Fauna taxa), which whilst not environmentally significant, will be managed through the implementation of:</p> <p>(a) Environmental Management Plan (MGX & EHPL 2008).</p> <p>To note, should there be a need to take <i>Leipoa ocellata</i> and <i>Idiosoma nigrum</i>, the action may also be subject to assessment and regulation by DPaW under the <i>Wildlife Conservation Act 1950</i> (WA) and by DoE under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (C'th).</p>	No

			<p>of any habitat of <i>Cacatua leadbeateri</i>, <i>Falco peregrinus</i> and <i>Leipoa ocellata</i> is not considered to be environmentally significant, having regard to the extensive area of potential habitat for these taxa across the Mt Gibson Ranges and the surrounding region.</p> <p>The Proposal may also indirectly affect other terrestrial fauna taxa which are not of conservation significance (such as common birds and reptiles), yet not of a magnitude expected to be environmentally significant having regard to the broad regional distributions of such taxa.</p>		
Water	Hydrological Processes	To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected.	<p>The Proposal will require the abstraction of groundwater for use in dust suppression and associated mining activities. The Proposal does not involve groundwater dewatering. The potential effect on groundwater hydrological processes is not expected to be environmentally significant given the low groundwater requirement of the dust suppression and associated mining activities, which will be within the authorised groundwater abstraction limits of the existing Mt Gibson Ranges mine operations.</p> <p>The Proposal is not situated near any surface water feature or watercourse.</p>	<p>Groundwater hydrology will be managed through:</p> <p>(a) Groundwater abstraction being undertaken in accordance with Groundwater Licence GWL166067 (DoW 2013) regulated by DoW under the <i>Rights in Water and Irrigation Act 1914 (WA)</i>.</p>	No
	Inland Waters Environmental Quality	To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.	<p>The Proposal will require the abstraction of groundwater for use in dust suppression and associated mining activities, as described above.</p> <p>The Proposal is not situated near a surface water feature or watercourse.</p>	<p>Water environmental quality will be managed through:</p> <p>(a) Groundwater abstraction being undertaken in accordance with Groundwater Licence GWL166067 (DoW 2013) regulated by DoW under the <i>Rights in Water and Irrigation Act 1914 (WA)</i>.</p>	No
Air	Air Quality	To maintain air quality for the	The Proposal may result in dust emissions to	Air quality emissions will be	No

		protection of the environment and human health and amenity.	air beyond the mine pit and built infrastructure areas from activities including land clearing, drilling, blasting, excavation, loading and unloading of ore and waste rock, vehicle movements on unsealed roads, and from wind passing over cleared land areas. The Proposal will also result in gaseous emissions to air from the burning of hydrocarbon fuels used in mining equipment and power generation facilities. The dust and gaseous emissions are not expected to be environmentally significant based on the emissions of the existing Mt Gibson Ranges mine and infrastructure operations, with no regulatory limits or standards to be exceeded. There are no nearby sensitive environmental receptors (e.g. houses) in the vicinity of the Proposal.	managed through the implementation of: (a) Environmental Management Plan (MGX & EHPL 2008).	
People	Amenity	To ensure that impacts to amenity are reduced as low as reasonably practicable.	Not applicable – the Proposal is not located in proximity to the areas of human occupation.	Not applicable	No
	Heritage	To ensure that historical and cultural associations are not adversely affected.	The Proposal does not coincide within any registered Aboriginal Heritage site within the meaning of s5 or s6 of the <i>Aboriginal Heritage Act 1972</i> (WA). The Proposal coincides with DAA record 25293 "Extension Hill", which is recorded by DAA as an "other heritage places" submitted by the Widi Mob who have since changed the area of Native Title claim to exclude the Mt Gibson Ranges. Further consultation with DAA may be necessary to determine if DAA record 25293 is of Aboriginal heritage significance.	Heritage values will be managed through adherence to: (a) <i>Aboriginal Heritage Act 1972</i> (WA) as regulated by DAA and the Minister for Aboriginal Affairs.	No
	Human Health	To ensure that human health is not adversely affected.	Not applicable – the Proposal is not located in proximity to areas of human settlement.	Not applicable	No
Integrating Factors	Offsets	To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.	As identified above (Factor: Flora and Vegetation), the Proposal will reduce the abundance of the Flora taxon <i>Darwinia masonii</i> . Although the estimated change in abundance and distribution to <i>Darwinia</i>	Offsets for <i>Darwinia masonii</i> may include: (a) Continued financial contribution to DPaW to assist with the implementation of the	Yes

			<p><i>masonii</i> is not expected to change its threatened taxa category ranking of "Vulnerable" under the IUCN (2012) criteria (as outlined by MGX 2014 at Attachment 4), the matter may require the consideration of environmental offsets as outlined within relevant Government guidance documents (Government of Western Australia 2011; EPA 2008; EPA 2006b).</p>	<p><i>Darwinia masonii</i> Interim Recovery Plan (DPaW, 2008a) and thereafter the <i>Darwinia masonii</i> Recovery Plan (MGX & EHPL 2014).</p>	
	Rehabilitation and Closure	<p>To ensure that premises are closed, decommissioned and rehabilitated in an ecologically sustainable manner, consistent with agreed outcomes and land uses, and without unacceptable liability to the State.</p>	<p>The Proposal area will require rehabilitation and closure to restore environmental values, and attain post-mining landforms that are safe and stable to promote future land use.</p>	<p>Rehabilitation and closure of the Proposal will be managed through:</p> <p>(a) Mine Closure Plan in accordance with the <i>Mining Act 1978</i> (WA).</p> <p>A Mine Closure Plan is being prepared for the Mt Gibson Ranges mine operations consistent with the DMP & EPA (2011) document <i>Guidelines for Preparing Mine Closure Plans</i>, to be regulated by DMP in accordance with the <i>Mining Act 1978</i> (WA). The Proposal can be incorporated within a subsequent revision of the Mine Closure Plan.</p>	No