Report and recommendations of the Environmental Protection Authority

Mt Gibson Range Mine Operations, Iron Hill Deposits

Mount Gibson Mining Limited

Report 1570

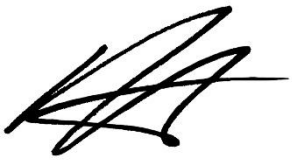
July 2016

Public Environmental Review
Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
22/12/2014	Level of assessment set	
30/04/2015	Final Environmental Scoping Document (ESD) approved	18
23/11/2015	Public Environmental Review (PER) document released for public review	30
18/01/2016	Public review period for PER document closed	8
18/05/2016	Final proponent Response to Submissions report received	17
23/06/2016	EPA meeting	5
13/07/2016	EPA report provided to the Minister for Environment	3
18/07/2016	Publication of EPA report (three working days after report provided to the Minister)	3 days
01/08/2016	Close of appeals period	2

Timelines for an assessment may vary according to the complexity of the project and are usually agreed with the proponent soon after the level of assessment is determined.

In this case, the Environmental Protection Authority met its timeline objective in the completion of the assessment and provision of a report to the Minister.



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1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for Environment on outcomes of the EPA's environmental impact assessment of the proposal by Mount Gibson Mining Limited to mine hematite ore from the Iron Hill and Iron Hill South Deposits (together referred to as the Iron Hill Deposits), located on the Mt Gibson Range. The Mt Gibson Range is comprised of a series of Banded Iron Formation (BIF) ridges, which include Iron Hill and Iron Hill South.

Mount Gibson Mining Limited was nominated as the proponent responsible for the proposal.

Section 44 of the *Environmental Protection Act 1986* (EP Act) requires that the EPA prepare a report on the outcome of its assessment of a proposal and provide this assessment report to the Minister for Environment. The report must set out:

- what the EPA considers to be the key environmental factors identified in the course of the assessment; and
- the EPA's recommendations as to whether or not the proposal may be implemented and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may also include any other information, advice and recommendations in the assessment report as it thinks fit.

The aims of environmental impact assessment and the principles of environmental impact assessment considered by the EPA in its assessment of this proposal are set out in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2012.*

The proponent referred the proposal to the EPA on 14 August 2014. On 22 December 2014 the EPA set the level of assessment at Public Environmental Review (PER) with a six-week public review period. The Environmental Scoping Document (ESD) for the proposal was approved by the EPA on 30 April 2015 and the proponent's PER document (MGM 2015) was released for public review from 23 November 2015 to 18 January 2016 (two weeks were added because the public review period coincided with the Christmas holidays).

Appendix 6 contains a summary of submissions from the public review period and the proponent's Response to Submissions (on CD at the back of this report and at www.epa.wa.gov.au). Relevant significant environmental issues identified from this process have been taken into account by the EPA during its assessment of the proposal.

This report provides the EPA advice and recommendations in accordance with section 44 of the EP Act.

Previous EPA assessment

The EPA released its report and recommendations on a proposal to mine Extension Hill North and Extension Hill, also located on the Mt Gibson Range, in November 2006, Bulletin 1242 (EPA 2006a). The EPA recommended to the Minister for Environment that the proposal to mine at Extension Hill should only proceed if, prior to ground-disturbing activities:

- the remaining ridges of the BIFs in the Mt Gibson area with sub-populations or suitable habitat for *Darwinia masonii* and *Lepidosperma gibsonii* and suitable habitat for the remaining floristic vegetation communities (that is, Extension Hill South, Iron Hill North, Iron Hill, Iron Hill South, Iron Hill East, Mount Gibson and Mount Gibson South) are protected in the formal conservation state, as a class A nature reserve, exempt from any exploration or mining activity; and
- adequate management resources are provided to ensure that threatening processes on the remaining plant populations and restricted vegetation within the reserve are mitigated.

During the resolution of appeals against the EPA's Bulletin 1242, agreement was reached between the then Minister for Environment and the then Minister for Resources that the southern ridges of Mount Gibson and Mount Gibson South require secure long-term protection and should be reserved as a class A nature reserve to conserve the flora species and floristic communities of the Mt Gibson Range. The Minister for Environment also stated that the central ridges, including Iron Hill and Iron Hill South, would continue to be protected through the provisions of the EP Act, notably formal assessment provisions under Part IV (Minister for the Environment 2007). Consultation has commenced with the relevant stakeholders in relation to the recommended nature reserve. However, there is currently no conservation tenure over any part of the Mt Gibson Range.

The Minister for Environment approved the Extension Hill proposal and issued Ministerial Statement 753 on 24 October 2007. Subsequent changes to the Extension Hill proposal have occurred under section 45C of the EP Act. The proponent also has approval for the Extension Hill Hematite Haulage Road and Rail Siding under Ministerial Statement 786.

Commonwealth assessment

The Iron Hill Deposits proposal was determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* on 11 September 2015, as it may impact on listed threatened species and communities.

The Commonwealth Department of the Environment will undertake its own assessment of the action, since the proposal is not being assessed under the bilateral agreement between the Commonwealth and Western Australian Governments.

2. The proposal

2.1 Proposal description

The proponent, Mount Gibson Mining Limited, proposes to mine hematite ore from the Iron Hill and Iron Hill South Deposits. The Iron Hill Deposits are part of the Mt Gibson Range, which is located approximately 270 kilometres (km) east-south-east of Geraldton (Figure 1).

The proposal is located within a 112 hectare (ha) development envelope (Figure 2). The proposal is for the development of two mine pits (20 ha), a waste rock landform (30 ha) and support infrastructure (37 ha), which includes topsoil stockpiles and internal mine roads. The life of the mine is two to three years.

The main characteristics of the proposal are summarised in Tables 1 and 2, consistent with Environmental Assessment Guideline (EAG) No. 1 – *Defining the Key Characteristics of a Proposal* (EPA 2012).

A detailed description of the proposal is provided in section 1 of the PER document (MGM 2015).

Table 1: Summary of key proposal characteristics

Proposal title	Mt Gibson Range Mine Operations, Iron Hill Deposits
Short description	To mine hematite ore from the Iron Hill and Iron Hill South Deposits, located on the Mt Gibson Range, approximately 270 km east-south-east of Geraldton. The proposal is for the construction of two mine pits, a waste rock landform and support infrastructure.

Table 2: Proposal elements for the Iron Hill Deposits proposal

Element	Location	Authorised extent
Mine pits, waste rock landform and support infrastructure	Figure 2	Clearing no more than 87 ha within a 112 ha development envelope.

The potential impacts of the proposal on the environment identified by the proponent in the PER document (MGM 2015) and their proposed management are summarised in Table E-2 (Executive Summary) in the PER document.

2.2 Consultation

Six agency submissions and five public submissions were received during the public review period. The key issues raised relate to:

- whether impacts on native vegetation and fauna habitat could be further avoided;
- the adequacy of the vegetation survey, mapping and analysis;
- impacts on Mt Gibson Range landform, flora, vegetation and fauna (including troglofauna) and monitoring of impacts; and
- location of the proposal within an area that was previously recommended by the EPA to be reserved in a class A nature reserve.

The issues raised were addressed by the proponent in the Response to Submissions document that was received by the EPA on 18 May 2016 (MGM 2016, Appendix 6).

In assessing this proposal and considering the submissions, the EPA notes that the proponent has sought to avoid, minimise, and rehabilitate environmental impacts associated with the proposal by:

- avoiding clearing of native vegetation by reducing the area of the mine pit from 30 to 20 ha and the waste rock landform from 45 to 30 ha;
- using existing infrastructure at the Extension Hill operation, such as the crushing facility, village and administration offices under their existing approvals, to avoid further clearing;
- using an existing haul road to transport ore from the proposed Iron Hill Deposits mine to the crushing facility at the Extension Hill operations;
- implementing measures to minimise impacts on the remaining Rare Flora populations and vegetation from indirect impacts, through the management of dust, fire and weeds and minimising impacts on terrestrial fauna through fauna management measures; and
- preparing a draft Mine Closure Plan to address rehabilitation of the waste rock landform and support infrastructure areas.

Figure 1: Proposal location

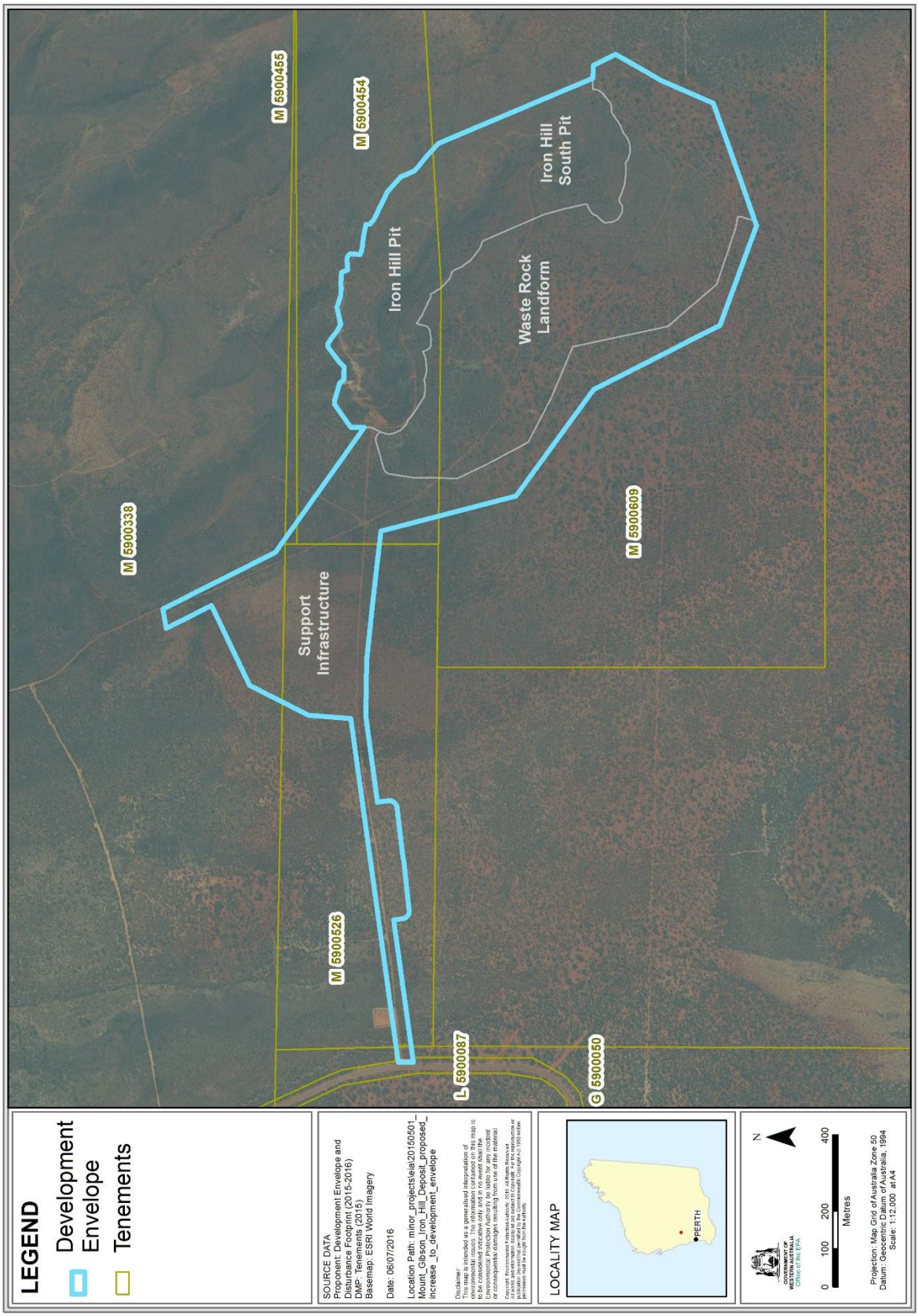

Figure 2: Development envelope and proposal layout

3. Key environmental factors

In undertaking its assessment of the Iron Hill Deposits proposal and preparing this report and recommendations, the EPA has had regard for the object and principles contained in section 4A of the EP Act to the extent relevant to the particular matter being considered. Appendix 3 provides a summary of the principles and how the EPA applied these principles in its assessment.

Having regard to:

- the proponent's PER document;
- public and agency comments on the PER document;
- the proponent's Response to Submissions;
- the EPA's own inquiries;
- EAG No. 8 – *Environmental Principles, Factors and Objectives (EPA 2015a); and*
- EAG No. 9 – *Application of a significance framework in the environmental impact assessment process* (EPA 2015b),

the EPA identified the following key environmental factors during the course of its assessment:

1. **Flora and Vegetation** – direct impacts from clearing of native vegetation, which includes Rare Flora, and indirect impacts from increased weed infestation, fragmentation and dust deposition;
2. **Rehabilitation and Decommissioning** (Integrating factor) – potential long term impacts on vegetation if rehabilitation is unsuccessful; and
3. **Offsets** (Integrating factor) – to counterbalance the significant residual impacts on the Rare Flora species, *Darwinia masonii* and *Lepidosperma gibsonii*, within the development envelope.

Other environmental factors relevant to the proposal which the EPA determined not to be key environmental factors are discussed in the proponent's PER document (MGM 2015).

Appendix 3 contains the environmental factors identified through the course of the assessment and the EPA's evaluation of whether an environmental factor is a key environmental factor for the proposal. This includes factors that were identified as preliminary key environmental factors when the level of assessment was set and were included in the ESD and addressed in the proponent's PER document.

The EPA's assessment of the impacts of the proposal on the key environmental factors is provided in sections 3.1 – 3.3. These sections outline the EPA's conclusions as to whether or not the proposal can be managed to meet the EPA's objective for a particular factor and, if so, the recommended conditions and procedures that should apply if the proposal is implemented.

In assessing this proposal, the EPA has also considered relevant published EPA policies and guidance. Appendix 4 lists the relevant policies and guidance documents for each of the key environmental factors for this assessment and identifies the relevant matters discussed in, and principles derived from, each policy and guidance document. The EPA has discussed the application of the relevant policy and guidance for each key environmental factor in section 3.

The EPA notes that the following policy and guidance relating to the key environmental factors replaced or amended policy and guidance since the ESD was approved:

- *Guidelines for preparing Mine Closure Plans* (EPA and DMP 2015); and
- Technical Guide – *Flora and vegetation surveys for environmental impact assessment* (EPA and DPAW 2015).

The proponent considered the current policy and guidance in its PER document, except for the Technical Guide – *Flora and vegetation surveys* because the Technical Guide was published after the PER was released for public review.

The EPA considered the above current policy and guidance (policy and guidance amended since the ESD was released) in its assessment (see sections 3.1 and 3.2).

The EPA notes that other published policies and guidelines were also considered, as set out below under each key environmental factor.

3.1 Flora and Vegetation

EPA Objective

The EPA's environmental objective for this factor is *to maintain representation, diversity, viability and ecological function at the species, population and community level.*

Relevant EPA policy and guidance

The EPA policy and guidance applicable to flora and vegetation for this assessment and relevant matters discussed in each policy and guidance are outlined in Appendix 4. The EPA considers that the following policy and guidance is relevant to its assessment of the proposal in relation to this factor:

- Position Statement No. 2 – *Environmental protection of native vegetation in Western Australia* (EPA 2000);
- Position Statement No. 3 – *Terrestrial biological surveys as an element of biodiversity protection* (EPA 2002); and
- Guidance Statement No. 51 – *Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia* (EPA 2004a).

EPA assessment

The proposal would impact on flora and vegetation directly by the clearing of 87 ha of native vegetation. There is also the potential for indirect impacts on flora and vegetation through dust deposition, fragmentation, introduction and/or spread of weeds and increased fire risk.

The proposal occurs on the Mt Gibson Range, which has been recognised as having high mineral prospectivity and high biodiversity values (DEC and DOIR, 2007).

The proposal would impact on *Darwinia masonii* and *Lepidosperma gibsonii,* which are listed as Rare Flora under the *Wildlife Conservation Act 1950* and have an International Union for Conservation of Nature (IUCN) Threat Category ranking of vulnerable.

Consistent with Position Statement No. 3, the EPA expects proponents to demonstrate in their proposals that reasonable measures have been undertaken to avoid impacts on biodiversity. In response to public submissions, the proponent sought to avoid impacts on native vegetation, including *D. masonii*, by reducing the mine pit area from 30 to 20 ha and reducing the waste rock landform area from 45 to 30 ha.

D. masonii is a long-lived shrub that is known to occur only on the Mt Gibson Range. *L. gibsonii* is a long-lived sedge that occurs on the Mt Gibson Range and the surrounding plains. Figure 3 shows the distribution of both species across the Mt Gibson Range. Table 3 shows the impact of the proposal and cumulative impacts (when considered with the current mine at Extension Hill) on the two Rare Flora species.

Table 3: Impact of the proposal and cumulative impact on Rare Flora

Rare Flora species	Total pre-disturbance population	% of total to be removed by proposal (number)	% of total cumulative impact (number)
Darwinia masonii	22,667	6% (1,327)	22% (5,090)
Lepidosperma gibsonii	49,472	2% (863)	18% (8,934)

While the impact calculations for *D. masonii* and *L. gibsonii* include all individuals within the development envelope, the EPA notes that there are a small proportion of individuals that are not within the mine disturbance footprint and may not be directly impacted. However, these individuals could potentially be indirectly impacted as a result of implementation of the proposal.

The EPA notes advice from the Department of Parks and Wildlife (Parks and Wildlife) that there is some uncertainty about the taxonomic identity of sub-populations of *L. gibsonii* on the plains, to the west of the Mt Gibson Range. This uncertainty was raised during the public review period of the PER and

was due to *L. gibsonii* co-occurring with other species of *Lepidosperma* and that these other species may have been inadvertently identified as *L. gibsonii*. Further genetic investigation and survey may be required to confirm the identity and extent of the sub-populations of *L. gibsonii* on the plains. The EPA did not require this work to be carried out to inform the impact assessment because, given the overall population size of the species, any error in the size of the population on the plains would be minimal.

The EPA notes advice from Parks and Wildlife that the impacts of the proposal on *D. masonii* and *L. gibsonii* appear likely, in the context of evidence of ongoing continuation of threatening processes, to result in a change to the IUCN threat category ranking of *D. masonii* (potentially from vulnerable to critically endangered) and *L. gibsonii* (potentially from vulnerable to endangered). Parks and Wildlife further advised that formal protection of a suitable area of the Mt Gibson Range to preserve habitat and populations of these species may assist in mitigating the threat posed by ongoing mining activities within the range.

The proposal occurs at the edge of the distribution of the two Rare Flora species and does not fragment the habitat of the species. Pollination of *D. masonii* is by a species of honeyeater and may be disrupted during mining, but any disruption is likely to be temporary. *L. gibsonii* is wind pollinated, therefore pollination is unlikely to be disrupted. Over 17,000 individuals of *D. masonii* and 25,000 individuals of *L. gibsonii* would remain on the undisturbed areas of the Mt Gibson Range.

The location of the proposed mine pits coincide with the Priority 1 Ecological Community (PEC) *Mount Gibson Range Vegetation Complexes*. Priority 1 Ecological Communities are identified by Parks and Wildlife typically due to their restricted extent and occurrence. The PEC includes both of the Rare Flora species identified above. The survey work carried out by the proponent has refined the boundary of the PEC. The PEC is comprised of four key components that make up the 'Ironstone Ridges' Vegetation Type; Floristic Groups 10, 11, 12 and 13, of which:

- Floristic Groups 10, 11 and 12 are only known from the Mt Gibson Range; and
- Floristic Groups 12 and 13 coincide with the development envelope.

The location of the proposed waste rock landform and support infrastructure coincide with Floristic Groups 1 (Sandplain woodlands), 2 Sandplain shrublands, 17 (Foothill mallee woodlands) and 22 (Plain woodlands). It is likely that these groups are more widespread than shown in the vegetation mapping provided by the proponent, which is based on the regional survey effort undertaken. Mapping of the floristic groups on the Mt Gibson Range is shown in Figure 4. The vast majority of the cumulative impact on the floristic groups is from the clearing already approved for the existing Extension Hill mine. The proposal would impact on 2.6% of the key components of the PEC and the cumulative impact (when considered with the existing Extension Hill mine) is 19.5%. Floristic Groups 12 and 13 would not be reduced to below 30% of the pre-clearing extent, a relevant matter in Position Statement No. 2.

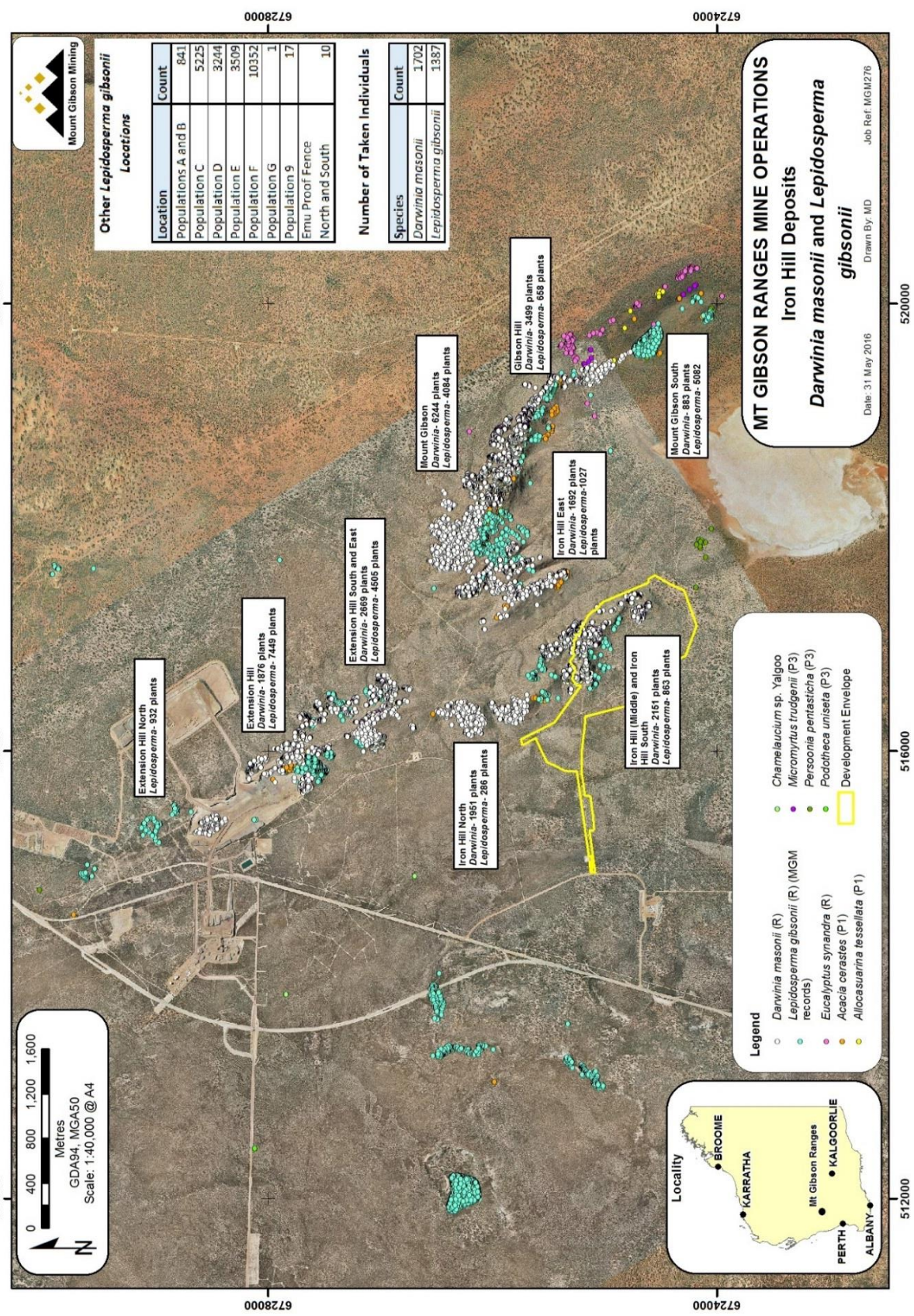

Figure 3: Ridges and significant flora on the Mt Gibson Range

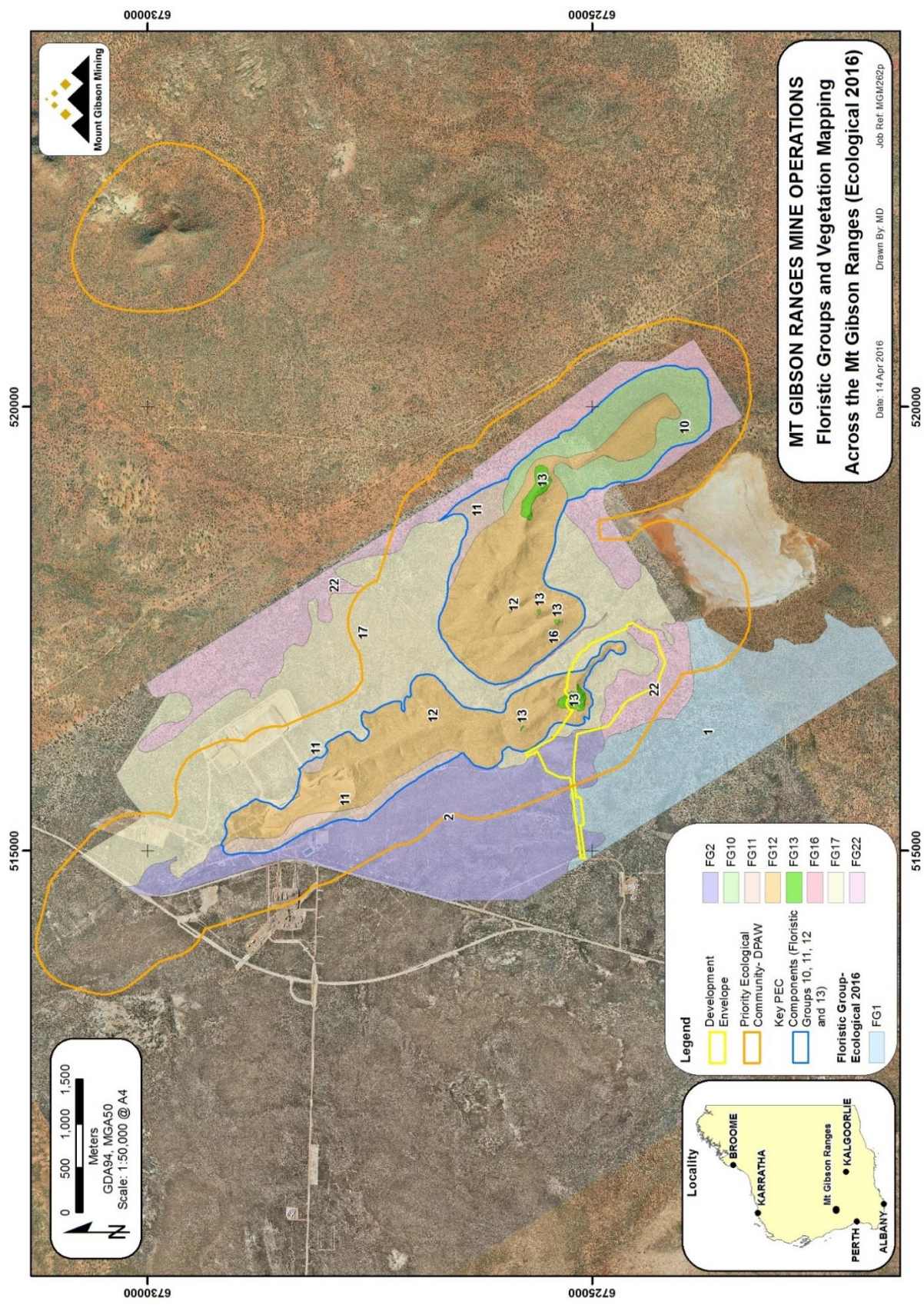

Figure 4: Vegetation mapping on the Mt Gibson Range

The proponent gave due consideration to Guidance Statement No. 51, but was not fully consistent with the requirements of the Guidance Statement because the vegetation survey (Engenium 2015) presented in the PER document was conducted in April and May of 2015, which is not the preferred season for plant survey. The EPA considered this was acceptable because vegetation analysis is based on the composition of perennial taxa and the EPA advised the proponent that highly skilled botanists with significant experience in the Mt Gibson Range should be used to undertake the work to identify the bulk of the perennial flora species present in the absence of flowers/fruit. Additional surveys were carried out by the proponent in October 2015 and February 2016 (EcoLogical 2016) to confirm that appropriate surveys had been undertaken.

The surveys undertaken identified the condition of the vegetation in accordance with the definitions provided in Position Statement No. 2 as ranging from 'Very Good' to 'Excellent'.

The Technical Guide – *Flora and vegetation surveys for environmental impact assessment* was released after the majority of flora and vegetation surveys were conducted. The EPA considers that when all of the surveys are taken together, the survey methodology used by the proponent is consistent with EPA Guidance Statement No. 51 and other relevant guides, and is sufficient to enable the EPA to assess the impact of the proposal on flora and vegetation.

The most likely indirect impact on the two Rare Flora species and restricted vegetation would be from dust. The EPA considers that monitoring of the two Rare Flora species and other species representing different functional groups within the PEC is essential to ensure there are no indirect impacts from the proposal. The EPA has proposed an outcome-based Condition Environmental Management Plan (EMP) for flora and vegetation, consistent with the EPA's condition framework in EAG No. 11 *for Recommending environmental conditions* (EPA 2015d) and the Condition EMP framework in EAG No. 17 for preparing environmental management plans under Part IV of the EP Act (EPA 2015e).

The EPA notes that no flora species or vegetation community would be impacted to an extent that would significantly affect its diversity, viability or ecological function. However, the EPA notes from Table 3, that the direct loss of 6% of *D. masonii* and 2% of *L. gibsonii* constitutes a significant residual impact, after taking into account the proponent's proposed measures to avoid, minimise and rehabilitate impacts and the proposed condition requiring a management plan to ensure no indirect impacts on flora and vegetation. The EPA has also considered cumulative impacts from the loss of habitat and plants from the existing mine at Extension Hill in its determination of the significant residual impact on the two Rare Flora species.

Consistent with the residual impact significance model in the WA Environmental Offsets Guidelines (Government of Western Australia 2014), a

significant residual impact on the two Rare Flora species will require an offset (see section 3.3 on Offsets).

To address the issue about the uncertainty of the *L. gibsonii* sub-population on the plains, the EPA has recommended that for the *L. gibsonii* Offset Plan, a condition be imposed to require the proponent to undertake a research program to confirm the taxonomic identity, and subsequently the numbers of *L. gibsonii* plants on the surrounding plains of the Mt Gibson Range, to the west of the Gt Northern Highway.

The EPA has recommended in Section 5 (Other advice) of this report that the southern ridges of the Mt Gibson Range (that is, Mount Gibson, Gibson Hill and Mount Gibson South) be secured in a class A nature reserve. These ridges support *D. masonii, L. gibsonii* and the restricted floristic groups. This takes into account the relevant matter in Position Statement No. 2, that there is a comprehensive, adequate and secure representation of scarce or endangered habitats in areas which are biologically comparable to the project area, protected in secure reserves.

Summary

The EPA considers that the 2.6% impact on the PEC and 6% and 2% direct impact (and 22% and 18% cumulative impact) on *D. masonii* and *L. gibsonii* respectively is unlikely to significantly affect their diversity, viability or ecological function. Consistent with Position Statement No. 3, the EPA considers that the proponent has proposed reasonable measures to avoid impacts and the impacts to flora and vegetation would not result in unacceptable loss or compromise the regional biodiversity.

Having particular regard to the:

(a) relevant EPA policy and guidance pertaining to flora and vegetation;

(b) avoidance and minimisation measures implemented by the proponent;

(c) potential impact of the proposal on the two Rare Flora species and the PEC;

(d) sizeable number of individuals and extent of the Rare Flora species along the remaining 6 km of the Mt Gibson Range;

(e) minimal habitat fragmentation to the Rare Flora species;

(f) pollination of the Rare Flora species unlikely to be disrupted in the long term; and

(g) the significant residual impact associated with direct impact on the Rare Flora species,

the EPA considers that the proposal can be managed to meet the EPA's objective for Flora and Vegetation subject to the following:

- condition 6 is imposed to ensure no adverse impacts on flora and vegetation outside the development envelope; and
- condition 7 is imposed to counterbalance the significant residual impact on the Rare Flora species, *D. masonii* and *L. gibsonii*.

3.2 Rehabilitation and Decommissioning (Integrating factor)

EPA Objective

The EPA's environmental objective for this factor is *to ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner.*

Relevant EPA policy and guidance

The EPA policy and guidance applicable to rehabilitation and decommissioning for this assessment and the relevant matters discussed in each policy and guidance are outlined in Appendix 4. The EPA considers that the following policy and guidance is relevant to its assessment of the proposal in relation to this factor:

- *Guidelines for preparing Mine Closure Plans* (EPA and DMP 2015); and
- Environmental Protection Bulletin No. 19 – *EPA involvement in mine closure* (EPA 2015f).

EPA assessment

The EPA identified rehabilitation and decommissioning as a preliminary key factor in the ESD due to the potential to alter BIF landforms and the loss of associated environmental values. This is consistent with Environmental Protection Bulletin No. 19, that the EPA will assess rehabilitation and decommissioning where a certain aspect of mine closure poses a potentially significant impact or risk.

Rehabilitation would be undertaken for areas of the waste rock landform (30 ha) and the support infrastructure (37 ha), which are located on the plains. Mining would take place above the water table. The proposed mine pits are located on the ironstone ridge and the pits would remain as open voids.

The soil and substrate for the area of the support infrastructure would remain intact and the short mine life means that there is a greater chance that the topsoil would remain viable and rehabilitation would be successful. The target ecosystem for rehabilitation of the support infrastructure area should be the surrounding native vegetation. The target ecosystem for rehabilitation of the waste rock landform should be chosen carefully to be an ecosystem that can grow on that unique substrate and landform.

The EPA notes that clearing associated with the proposal would also impact significantly on the Rare Flora species, *D. masonii* and *L.gibsonii*. The EPA considers that rehabilitation measures could attempt to include these species. However, given that these species have so far been demonstrated to establish only on the ironstone ridges (and not on the surrounding plains), the EPA recommends this impact be addressed via the recommended condition for an Offset Plan to translocate the same number of impacted individuals to other areas on the Mt Gibson Range.

The proponent submitted a draft Mine Closure Plan during the assessment to the Department of Mines and Petroleum (DMP). The proposal is within mining tenure and is therefore subject to the *Mining Act 1978* (Mining Act). The DMP has advised that rehabilitation and decommissioning can be managed and regulated via the Mine Closure Plan required under the Mining Act.

The EPA notes the advice from the DMP that waste material characterisation indicates that waste materials are expected to be non-saline and non-acid forming with a low potential for metalliferous drainage. The waste rock landform design is discussed in the context of climatic conditions, materials characteristics and designed to be integrated with the surrounding elevation. Soil characterisation has been carried out with subsoils and topsoils considered suitable for revegetation.

Summary

Having particular regard to:

(a) the relevant EPA policy and guidance pertaining to rehabilitation and decommissioning;

(b) the matters raised in relation to rehabilitation and decommissioning during the assessment being able to be addressed under the joint EPA/DMP *Guidelines for preparing Mine Closure Plans*;

(c) no additional specific rehabilitation required for the proposal being identified by the EPA;

(d) rehabilitation of the Rare Flora species, *Darwinia masonii* and *Lepidosperma gibsonii,* by way of translocation required as part of an offset condition discussed in section 3.3; and

(e) advice from DMP that rehabilitation and decommissioning can be managed and regulated via the Mine Closure Plan required under the Mining Act,

the EPA considers that the proposal can be managed to meet the EPA's objective for Rehabilitation and Decommissioning provided that:

- the proponent prepares a Mine Closure Plan in accordance with the *Guidelines for preparing Mine Closure Plans*, May 2015 (or any subsequent revisions of the guidelines); and
- the proponent is under an obligation to implement the approved Mine Closure Plan.

According to Environmental Protection Bulletin No. 19, where it is considered that regulatory efficiencies would be gained, the EPA may elect not to impose a condition where mine rehabilitation is regulated by the DMP. The EPA notes that a Mine Closure Plan (prepared in accordance with the *Guidelines for preparing Mine Closure Plans*) is a statutory obligation under the Mining Act and that the *Guidelines for preparing Mine Closure Plans* is a joint document prepared by the EPA and the DMP to meet both Mining Act and EP Act regulatory requirements. The DMP has confirmed that it would require a Mine Closure Plan as a condition of the Mining Lease under section 74 of the

Mining Act. The EPA's view is that the requirements of the condition for this proposal can be adequately regulated through the Mining Act, rather than a condition under Part IV of the EP Act.

3.3 Offsets (Integrating factor)

EPA Objective

The EPA's environmental objective for this factor is *to counterbalance any significant residual environmental impacts or uncertainty through the application of offsets*.

Relevant EPA policy and guidance

The EPA and WA Government policy and guidance applicable to offsets for this assessment and the relevant matters discussed in each policy and guidance are outlined in Appendix 4. The EPA and WA Government policy and guidance considered by the EPA to be relevant for this factor in this assessment are:

- WA Environmental Offsets Policy (Government of WA 2011);
- WA Environmental Offsets Guidelines (Government of WA 2014); and
- Environmental Protection Bulletin No. 1 *Environmental Offsets* (EPA 2014).

EPA assessment

Consistent with principle 1 of the Environmental Offsets Policy, the proponent has applied the mitigation hierarchy by identifying measures to avoid, minimise and rehabilitate potential impacts on the environment through:

- avoiding clearing of native vegetation by reducing the area of the mine pit from 30 to 20 ha and the waste rock landform from 45 to 30 ha;
- avoiding further clearing of native vegetation by using existing infrastructure at the Extension Hill operation;
- minimising indirect impacts on the remaining Rare Flora populations and vegetation, through the management of dust, fire and weeds; and
- preparing a draft Mine Closure Plan, which includes measures to rehabilitate the waste rock landform and support infrastructure areas.

Following the implementation of all avoidance and mitigation measures, the EPA notes that the proposal would have a significant residual impact from the direct clearing of 1,327 plants of the Rare Flora species *D.masonii* and 863 plants of the Rare Flora species *L. gibsonii.* This equates to 6% and 2% of the total known distribution of *D. masonii* and *L. gibsonii* respectively.

While noting this significant residual impact, the EPA does not consider that the proposal will significantly affect the viability of the Rare Flora species, as discussed in section 3.1. Therefore, the EPA is of the view that offsets are appropriate for this proposal to counterbalance this significant residual impact.

This is consistent with principal 2 of the Environmental Offsets Policy and the Residual Impact Significance Model in the Environmental Offsets Guidelines.

The proponent has proposed the following offsets:

1. a direct offset to develop plans to re-establish and/or translocate *D. masonii* and *L. gibsonii* individuals across the Mt Gibson Range; and
2. an indirect offset for corporate contributions towards the implementation of aspects of the *D. masonii* and *L. gibsonii* Recovery Plans across the Mt Gibson Range and research into the genetics of *L. gibsonii* records based on current taxonomy known from across the region.

Translocation trials show that *D. masonii* and *L. gibsonii* have the ability to be planted and survive on ironstone substrate on the Mt Gibson Range (BGPA 2010). For example, a ten-year trial of translocated *D.masonii* clones on Iron Hill East showed a high survival rate, with plants producing flowers and seeds. The trial showed that irrigation of the plants in the first two years is necessary for their growth.

Consistent with principles 2 and 4 of the Environmental Offsets Policy, the EPA considers that the direct offset proposed for this proposal is appropriate, based on the information provided by the proponent with the PER document, and on the work already undertaken on the translocation trials for the two Rare Flora species. In considering principle 3 of the Environmental Offsets Policy and the Environmental Offsets Guidelines, the proposed direct offset is like-for-like, in that the impact to the environmental value (i.e. Rare Flora), is offset by actions (translocations) that benefit the same environmental value being impacted.

The EPA has recommended condition 7 for offsets. To ensure a successful long-term outcome, the condition requires that an Offset Plan be developed to demonstrate that at least the same number of Rare Flora individuals impacted by the proposal are successfully translocated. That is, evidence that at least 1,327 *D. masonii* plants and 863 *L. gibsonii* plants have been established, are flowering and are self-sustaining. The EPA considers that the translocation sites should be on previously disturbed areas of the Mt Gibson Range, including areas of historic disturbance, because previous translocation trials have shown plants to establish on ironstone substrate.

In this case, the Offset Plan has been required to ensure that completion criteria are defined, to ensure that the required environmental outcome is achieved. Consistent with principles 5 and 6 of the Environmental Offsets Policy, the plan also allows for an adaptive management framework and a flexible approach to ensure that the anticipated environmental outcomes are realised.

The EPA has recommended that part of the proposed indirect offset be incorporated into a condition for the proponent to carry out a research program to confirm the taxonomic identify and subsequently the numbers of *L.*

gibsonii plants on the surrounding plains of the Mt Gibson Range, to the west of the Great Northern Highway. The proponent is already required to prepare and implement species Recovery Plans for the two Rare Flora species, under Ministerial Statement 753 for the existing mine at Extension Hill.

Summary

Having particular regard to the:

(a) relevant EPA and WA Government endorsed policy and guidance pertaining to Offsets;

(b) significant residual impact on the Rare Flora species, *D. masonii* and *L. gibsonii*; and

(c) previous experience of the proponent and success in undertaking translocation for the two Rare Flora species,

the EPA considers that the proposal can be managed to meet the EPA's objective for Flora and Vegetation and Offsets provided that condition 7 is imposed to counterbalance the significant residual impact on the Rare Flora.

4. Conditions

Section 44 of the EP Act requires that this assessment report must set out:

- what the EPA considers to be the key environmental factors identified in the course of the assessment; and
- the EPA's recommendations as to whether or not the proposal may be implemented and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

4.1 Recommended conditions

The EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Mount Gibson Mining Limited to develop and operate the Mt Gibson Range Mine Operations, Iron Hill Deposits proposal is approved for implementation. These conditions are presented in Appendix 5. Matters addressed in the conditions include the following:

- ensuring no adverse impacts on the significant flora and vegetation outside the development envelope, in particular *Darwinia masonii, Lepidosperma gibsonii* and the key components of the Priority 1 Ecological Community (condition 6); and
- requiring that the significant residual impacts on Rare Flora identified in this report are appropriately offset through the preparation and implementation of an Offset Plan (condition 7).

The EPA notes that the DMP will regulate impacts related to rehabilitation and decommissioning and will require a Mine Closure Plan that meets the requirements of the *Guidelines for preparing Mine Closure Plans* as a condition of the Mining Lease under section 74 of the Mining Act.

4.2 Consultation

In developing these conditions, the EPA consulted with the proponent, Parks and Wildlife and the DMP on matters of fact, technical feasibility and potential difficulties with implementation. Minor changes, which did not change the intent or scope were made to conditions 6 and 7.

5. Other advice

Recommended nature reserve

The EPA notes previous recommendations made in Bulletin 1242 on the proposal by the proponent to mine the Extension Hill North and Extension Hill ridges (EPA 2006a). The then EPA recommended to the Minister for Environment that this proposal should only proceed if prior to ground-disturbing activities the remaining ridges of BIFs in the Mt Gibson area with sub-populations or suitable habitat for *Darwinia masonii* and *Lepidosperma gibsonii* and suitable habitat for the remaining restricted floristic vegetation communities are protected in the formal conservation estate as a class A nature reserve.

During the resolution of appeals (Minister for Environment 2007) against the EPA's Bulletin 1242, agreement was reached between the then Minister for Environment and the then Minister for Resources that the southern ridges of Mount Gibson and Mount Gibson South require immediate long term protection and should be reserved as a class A nature reserve.

There is currently no conservation tenure over any part of the Mt Gibson Range. However, the EPA understands that Parks and Wildlife is actively pursuing class A reservation of the area agreed to by the then Ministers as referred to above.

The southern portion of the Mt Gibson Range, which comprises Mount Gibson, Gibson Hill and Mount Gibson South constitutes about 40% of largely contiguous habitat for the two Rare Flora species and the restricted floristic groups of the PEC. This portion of the Mt Gibson Range also includes another Rare Flora species and at least four Priority species (see Figure 3).

The EPA considers that, given:

- the Rare Flora species and floristic groups that are restricted to the Mt Gibson Range;
- the biodiversity values of the Mt Gibson Range and the southern portion of the Range in particular;
- the then Minister for Environment's previous decision on appeals in 2007 described above; and
- the relevant matter in Position Statement 2 of ensuring there is comprehensive, adequate and secure representation of scarce or endangered habitats within the project area and/or in areas which are

biologically comparable to the project area, protected in secure reserves,

Mount Gibson, Gibson Hill and Mount Gibson South should be protected in the formal conservation estate, as a class A nature reserve.

6. Recommendations

The EPA recommends that the Minister for Environment notes:

1. that the proposal assessed is for the development and operation of the Mt Gibson Range Mine Operations, Iron Hill Deposits;
2. the key environmental factors identified by the EPA in the course of its assessment set out in section 3;
3. that the EPA has concluded that the proposal may be implemented to meet the EPA's objectives, provided the implementation of the proposal is carried out in accordance with the recommended conditions and procedures set out in Appendix 5; and
4. the EPA's other information, advice and recommendations set out in section 5 in relation to the reservation of the southern portion of the Mt Gibson Range in a class A nature reserve.

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Appendix 1

List of submitters

Organisations:

1. Department of Environment Regulation
2. Department of Mines and Petroleum
3. Department of Parks and Wildlife
4. Department of Water
5. Department of Lands
6. Department of Aboriginal Affairs

Public:

1. John Calegari
2. Private individual 1
3. Private individual 2
4. Wildflower Society
5. Australian Wildlife Conservancy

Appendix 2

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Appendix 3

Summary of identification of key environmental factors and principles

Table A1 Summary of identification of key environmental factors

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
LAND			
Flora and Vegetation	The proposal would require the clearing of 87ha within the development envelope and would impact on *Darwinia masonii* and *Lepidosperma gibsonii,* both listed as Rare Flora under the *Wildlife Conservation Act 1950* and on the Priority 1 Ecological Community (PEC) *Mount Gibson Range Vegetation Complexes*. The proposal would result in the direct impact on: • 6% of the total known distribution of *D. masonii*; • 2% of the total known distribution of *L. gibsonii*; and • 2.6% of the key components of the PEC.	<u>John Calegari and Private Individual 2</u> Objects to the proposal based on the clearing of native vegetation and Rare Flora species. <u>Private individual 1</u> Direct, indirect and cumulative impacts on *D. masonii* to be more fully evaluated as well as threats to the remaining populations. The remainder of the PEC is under threat from grazing and mining exploration. <u>Wildflower Society</u> Concerns regarding the out-of-season vegetation survey meeting Guidance Statement No. 51 and Position Statement No. 3. A species poor inventory in plots has implications for rehabilitation commitments to restore a portion of the species. Peer review of the survey work was not undertaken.	Flora and Vegetation was identified as a preliminary key environmental factor in the ESD for the proposal. Having regard to the clearing of native vegetation proposed to be undertaken and the impact on significant flora and restricted vegetation, **the EPA identified Flora and Vegetation as a key environmental factor.**

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
		Some species are at or close to the northeast or southwest extent of their known range and other species are also range extensions. Many floristic communities are rare, known from only a few locations and are not widespread or abundant. The PEC should be protected within a class A nature reserve. Success of the weed control procedures is unclear. Strong commitments should be made to control any outbreak of the invasive environmental weeds or other highly invasive species onsite. <u>Australian Wildlife Conservancy</u> A woodland type within the development envelope may be listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. <u>Department of Parks and Wildlife</u> Greater consideration of indirect impacts of the proposal on significant species, ecological communities and vegetation units should be provided.	

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
		D. masonii counts from 2004 should be calibrated to the 2014 survey. Taking into account the impacts of this proposal and further exploration and mining in the Mt Gibson Range, the IUCN threat ranking of *D. masonii* and *L. gibsonii* would likely increase. The positive identification of *L. gibsonii* to the west of the Gt Northern Hwy requires confirmation. Greater consideration of the approach to monitoring potential indirect impacts of the proposal on conservation significant flora and vegetation is required. Vegetation mapping undertaken is too broad. The Department is actively pursuing class A reservation of the southern portion of the Mt Gibson Range.	
Terrestrial Fauna	Clearing of fauna habitat within the development envelope has the potential to impact on the following conservation significant fauna species listed under the *Wildlife Conservation Act 1950*: 1. *Leipoa ocellata* (Malleefowl);	<u>John Calegari</u> Objects to the proposal based on impacts on Malleefowl, Major Mitchell's Cockatoo and Peregrine Falcon, fauna road kill associated with transport to and from the mine site and vegetation clearing resulting in death of fauna.	Terrestrial Fauna was identified as a preliminary key environmental factor in the ESD for the proposal. Having regard to Guidance Statement No. 56 – *Fauna Surveys for Environmental Impact Assessment in WA* (2004b), Position Statement No. 3

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
	2. *Egernia stokesii badia* (Western spink-tailed skink); 3. *Cacatua leadbeateri* (Major Mitchells Cockatoo); and 4. *Falco peregrine* (Peregrine Falcon). Occurrences of the Trapdoor Spider within the development envelope is being treated as *Idiosoma nigrum* (Shield-backed Trapdoor Spider), which is also listed under the *Wildlife Conservation Act 1950*. The EPA notes that recent research has indicated that the spider could be a separate species. Following the description of the taxon, the conservation status of the species will be determined.	<u>Private individual 1</u> Queried the purpose of the register of fauna injury and death. Further clarification regarding the management of injured fauna, the pre-clearing checks for fauna, relocation of fauna and management of feral animals. Queried whether surveys for bats was conducted. Concern regarding the mine pit acting as a large 'pitfall trap'.	– *Terrestrial biological surveys as an element of biodiversity protection* (EPA 2002), Guidance Statement No. 20 – *Sampling of short-range endemic invertebrate fauna for environmental impact assessment in Western Australia* (EPA 2009), *Technical Guide – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA and DEC 2010), and Environmental Assessment Guideline (EAG) No. 9 - *Application of a Significance Framework in the Environmental Impact Assessment Process* (EPA, 2015b) and given: • the low number of records of conservation significant fauna and the relatively small amount of habitat area that would be impacted by the proposal; and • all of the significant species that occur in the development envelope are found in areas outside of the development envelope; the EPA considers that it is unlikely that the proposal would have a significant impact on terrestrial fauna and the

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
			proposal can meet the objective for this factor. Accordingly, **the EPA did not identify Terrestrial Fauna as a key environmental factor** at the conclusion of its assessment.
Landforms	The landform is the Mt Gibson Range, which is comprised of different landform units (Extension Hill ridges, Iron Hill ridges, Mt Gibson ridges and the Gibson Hill ridge). The Mt Gibson Range is an ironstone formation that extends about 13km in length. The proposal would have a permanent impact on the variety and integrity (intactness) of the landform and would also impact on the ecological function and environmental values it supports. Mining has already removed the Extension Hill North and Extension Hill ridges and mineral exploration has disturbed the Iron Hill, Iron Hill South and Gibson Hill ridges. Based on an assessment of the landform compared to other BIF	<u>John Calegari</u> Objects to the proposal based on impacts on the Mt Gibson Range, which is very old and of a very high quality. <u>Private individual 1</u> The environmental values of the Mt Gibson Range remain under threat, from grazing by introduced herbivores, and historical, current and future mining. The impact of the proposal on the PEC should be considered in this broader context. <u>Wildflower Society</u> EPA's Environmental Protection Bulletin No. 23 lists five key criteria: variety, integrity, ecological importance, scientific importance and rarity and states that only one key criteria needs to be applicable for a landform to be considered significant. The Iron Hill landform meets at least one, if not all criteria.	Landforms was identified as a preliminary key environmental factor in the ESD for the proposal. Impact on the Iron Hill and Iron Hill South component of the landform cannot be avoided because the landform is the location where the mineral resource is located. The proponent has minimised impacts by restricting the spatial extent of the development envelope to what is required for proposal implementation and by utilising existing approved infrastructure and facilities. At mine closure the areas of the waste rock landform and support infrastructure would be rehabilitated. The area of the mine pit would not be backfilled and would remain as an open void. The ESD refers to Guidance Statement No. 33 – *Environmental Guidance for Planning and Development* as a

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
	landforms in the region, the Mt Gibson Range landform: • is one of the smallest, in total area (ha); • has a maximum elevation of 445 metres Australian Height Datum (mAHD), which is the Mount Gibson ridge. This ridge will not be impacted by the proposal. There are many other BIF ranges in the region with higher elevations. The elevations of the ridges to be mined are 420 mAHD for Iron Hill and 405 m AHD for Iron Hill South; and • has a northwest to southeast alignment, which is similar to other BIF ranges in the region. The Mt Gibson Range landform is also habitat for restricted flora and vegetation communities. This is a consequence of the unique geology, soils and relative isolation of the landform. The environmental values in relation to flora and vegetation of the Iron Hill and Iron Hill South component of the landform are		relevant policy for this factor. Environmental Protection Bulletin No. 23 – *Guidance on the EPA Landforms Factor* (EPA 2015c) was released subsequent to the approval of the ESD. Nevertheless, the proponent still referred to the Bulletin in the PER document. The EPA has referred to the relevant matters in Environmental Protection Bulletin No. 23 below because it provides more contemporary guidance on the assessment of the landforms factor than Guidance Statement No. 33. Having regard to Environmental Protection Bulletin No. 23 and EAG No. 9 and given: • Variety - the landform is one of the smallest in total area and the elevation of the ridges are comparable with other landforms in the region; • Integrity - the landform is not intact due to previous exploration and mining activities; • Ecological importance - the landform provides habitat that

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
	discussed in section 3.1 of this report. The waste rock landform would be located on the south-west side of the Iron Hill Deposits, on the adjacent plains. The proposed elevation of the waste rock landform is 370 mAHD, which is lower than the peaks of the surrounding ridges on the Mt Gibson Range. Iron Hill East is 425 mAHD, Mt Gibson is 445 mAHD and Mt Gibson South is 406 mAHD. The proposal would result in the cumulative loss of 10.5% of ironstone geologies on the Mt Gibson Range (MGM 2015).		supports Rare Flora species and restricted vegetation; • Scientific importance - the landform is not a known area of geomorphological or geological importance; and • Rarity – the Mt Gibson Range is not one of the top five large intact landforms in the region, the EPA considers that it is unlikely that the proposal would have a significant impact on the Mt Gibson Range landform and the proposal can meet the objective for this factor. Accordingly, **the EPA did not identify Landforms as a key environmental factor** at the conclusion of its assessment, but the impact on the environmental values of flora and vegetation are discussed in section 3.1.
Subterranean Fauna	Subterranean fauna are comprised of aquatic stygofauna, which live in the groundwater and air-breathing troglofauna that live in caves and voids.	<u>Private individual 1</u> Troglobitic fauna usually have exceptionally low mobility and high endemnicity, often being restricted to a single cave system.	Subterranean fauna was identified as a preliminary key environmental factor in the ESD for the proposal. Following release of the PER document, the proponent conducted Level 2 sampling of troglofauna in

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
	Mining for the proposal would be above the watertable, therefore stygofauna would not be impacted. However, mining has the potential to impact on troglofauna habitat.	To purport that "any effect...to troglobitic subterranean fauna, if present, is not expected to be significant", without yet obtaining results from field surveys, seems to be presumptuous. Field surveys (which MGM has identified it will undertake in early 2016) will be necessary to determine the impacts on troglobitic fauna. <u>Department of Parks and Wildlife</u> Other BIF ranges of the Yilgarn Craton, when sampled, have been found to support troglofauna communities. Notes the proponent's commitment to undertake Level 2 sampling of troglofauna. This information should be collected, analysed and presented for review by the EPA prior to finalisation of the environmental impact assessment.	accordance with EAG No. 12 – *Consideration of subterranean fauna in environmental impact assessment in Western Australia*, (EPA 2013). Sampling identified a low diversity and abundance of troglofauna species from the development envelope. The EPA notes that the habitat for the three species found as singletons in the mine pit area extends beyond the mine pit area. None of the species identified in the mine pit area are listed conservation significant species. Having regard to EAG No. 12, Guidance Statement 54a – *Sampling methods and survey considerations for subterranean fauna in Western Australia* and EAG No. 9 and given: • the proposal does not require dewatering and therefore would not impact on stygofauna; • the likely continuity of troglofauna habitat outside the development envelope; and

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
			• the absence of any conservation significant troglofauna species within the mine area; the EPA considers that it is unlikely that the proposal would have a significant impact on subterranean fauna and the proposal can meet the objective for this factor. Accordingly, **the EPA did not identify Subterranean Fauna as a key environmental factor** at the conclusion of its assessment.
WATER			
Hydrological processes	Mining is proposed above the groundwater level, so dewatering is not required. The proposal requires abstraction of groundwater for dust suppression. The proponent has identified, in the PER document, that it will continue to liaise with the Department of Water (DoW) in regard to the water requirements for the proposal and associated works.	<u>Department of Water</u> Groundwater and surface water have not been identified as significant factors at risk under this proposal. Hydrological impacts from the proposal can be managed via the existing licenses under the *Rights in Water and Irrigation Act 1914*. The proponent should continue to liaise with DoW to ensure that appropriate licenses are in place as required for new bores and/or increased abstraction requirements and impact management	Hydrological Processes was identified in the ESD for the proposal in 'other factors'. Having regard to EAG No. 9 and given mining would be above the water table and therefore would not require dewatering or dewater discharge, the EPA considers that it is unlikely that the proposal would have a significant impact on hydrological processes and the proposal can meet the objective for this factor. Accordingly, **the EPA did not identify Hydrological Processes**

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
		strategies and performance monitoring programs are developed.	**as a key environmental factor** at the conclusion of its assessment. The EPA also notes the ability of DoW to regulate abstraction of groundwater under the provisions of the *Rights in Water and Irrigation Act 1914* and notes the proponent's commitment to continue to liaise with DoW in relation to their groundwater licence.
PEOPLE			
Heritage	The proposal does not coincide with any 'Registered site' of Aboriginal heritage. The proposal does however coincides with DAA record 25293 which is an 'other heritage places' data record held by the Department of Aboriginal Affairs (DAA). The proposal is outside DAA record 21626 'Iron Hill 1', which is held by DAA for a small artefact/scatter and would not be impacted.	<u>Department of Aboriginal Affairs</u> The development envelope is not within the boundary of any sites under the *Aboriginal Heritage Act 1972* (AHA) as currently mapped on the Register of Aboriginal Sites. There are two places on the DAA database where a decision under section 5 of the AHA is yet to be made: DAA 25293 Extension Hill and DAA 21626 Iron Hill 1. The Aboriginal Cultural Material Committee (ACMC) considered a Notice under section 18 of the AHA by the proponent for a part of DAA 25293 that lies within the development envelope. A	Heritage was identified in the ESD for the proposal in 'other factors' and was not considered as a preliminary key environmental factor. Having regard to Guidance Statement No. 41 – *Assessment of Aboriginal Heritage* (EPA 2004c) and EAG No. 9 and given that: • there are no Registered sites of Aboriginal heritage within the development envelope, the EPA considers that it is unlikely that the proposal would have a significant impact on the physical and biological surroundings that would affect

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
		recommendation was made to the Minister for Aboriginal Affairs, however, the Minister is constrained from making any decisions until the EPA has completed its assessment. Department of Aboriginal Affairs has noted they are constrained from providing advice on DAA25293 until after the EPA assessment. The EPA notes that the site occurs over most of the Mt Gibson range. DAA 21626 is yet to be assessed by the ACMC but occurs outside the development envelope for Iron Hill.	Aboriginal Heritage and that the proposal can meet the objective for this factor. Accordingly, **the EPA did not identify Heritage as a key environmental factor** at the conclusion of its assessment. The EPA also notes the proponent's commitment to continue to liaise with DAA and are subject to the AHA.
INTEGRATING FACTORS			
Rehabilitation and Decommissioning	The proposal occurs on Mining Leases issued by DMP, overlying Crown Reserve 17367 managed by the Department of Lands. Rehabilitation would be undertaken for areas of the waste rock landform and the support infrastructure. The mine pits would not be backfilled and would remain as open voids.	<u>John Calegari and Private individual 1</u> Not all environmental values can be restored, in particular, the open cut mine will remain as a permanent, environmentally irreplaceable feature. <u>Department of Parks and Wildlife</u> Evidence based data and discussions on development and achievement of completion criteria should be provided to	Rehabilitation and Decommissioning was identified as a preliminary key environmental factor in the ESD. Having regard to the native vegetation that is proposed to be cleared and the disturbed areas that would need to be rehabilitated, **the EPA identified Rehabilitation and**

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
		support an assessment of the likely outcomes of rehabilitation activities at Iron Hill. <u>Department of Mines and Petroleum</u> Waste material characterisation indicates that waste materials are expected to be non-saline and non-acid forming with a low potential for metalliferous drainage. The waste rock landform design is discussed in the context of climatic conditions, materials characteristics and designed to be integrated with the surrounding elevation. Soil characterisation has been carried out with subsoils and topsoils considered suitable for revegetation. Benchmarking, research and rehabilitation trials have commenced to refine rehabilitation and closure techniques. The proponent has submitted a Mining Proposal with Mine Closure Plan to the DMP for assessment under the *Mining Act 1978*. Rehabilitation and decommissioning will be assessed in further detail via this process.	**Decommissioning as a key integrating factor.**

Environmental factors	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of whether a factor is a key environmental factor
Offsets	The proposal would have a significant residual impact from the direct clearing of 6% and 2% of the Rare Flora species *D. masonii* and *L. gibsonii* respectively.	Private individual 2 The proponent should demonstrate that translocated individuals have survived in the long-term elsewhere. Efforts would be better spent protecting remaining in-situ populations by exclusion, maintaining water regimes, seed banking and weed control. And for the authorities to adequately reserve remaining populations. Wildflower Society Sustainable and robust, naturally-established populations existing in the wild in their natural habitat is essential. Translocation is a problematic offset strategy that would take decades or more to prove viable.	Offsets was identified as a preliminary key environmental factor in the ESD for the proposal. Having regard to the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014) that impacts to Rare Flora constitutes a significant residual impact where an offset would be appropriate, **the EPA identified Offsets as a key integrating factor.**

Table A2 Summary of identification of principles

Principle	Consideration
Environmental principles of the EP Act	
1. The precautionary principle *Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.* *In application of this precautionary principle, decisions should be guided by –* *a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and* *b) an assessment of the risk-weighted consequences of various options.*	In considering this principle, the EPA notes that flora and vegetation could be significantly impacted by this proposal to mine the Iron Hill and Iron Hill South Deposits. Investigations on the biological and physical environment undertaken by the proponent have provided sufficient certainty to assess risks and identify measures to avoid or minimise impacts. The EPA has recommended conditions to ensure relevant measures are undertaken by the proponent. From its assessment of this proposal, the EPA has concluded that there is not a threat of serious or irreversible harm.
2. The principle of intergenerational equity *The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.*	In considering this principle, the EPA notes that the proponent has taken measures to avoid, minimise, rehabilitate (and offset) impacts in accordance with the mitigation hierarchy in the *WA Environmental Offsets Guidelines* (Government of Western Australia, 2014). In assessing this proposal, the EPA has recommended that conditions be imposed on the proponent to manage the direct and indirect impacts on Flora and Vegetation, including an Offset Plan to counterbalance the significant residual impact on the two Rare Flora species. A Mine Closure Plan consistent with the *Guidelines for preparing mine closure plans* (EPA and DMP 2015) will be required under the *Mining Act 1978* to ensure that the post-mine environment is ecologically sustainable.

	From its assessment of this proposal, the EPA has concluded that the health, diversity and productivity of the environment can be maintained and enhanced for the benefit of future generations.
3. The principle of the conservation of biological diversity and ecological integrity *Conservation of biological diversity and ecological integrity should be a fundamental consideration.*	In considering this principle, the EPA notes that the proposal would impact on Rare Flora species, *Darwinia masonii* and *Lepidosperma gibsonii* and on restricted floristic groups and habitat for listed terrestrial fauna species. In assessing the proposal the EPA has considered these impacts and has taken into account measures proposed by the proponent to minimise impacts to the affected species and has recommended conditions to manage the direct impacts on the Rare Flora species and indirect impacts on the Rare Flora species and vegetation. The EPA is satisfied that the impacts are unlikely to significantly affect diversity, viability or ecological function of the Rare Flora species. Through this assessment, the EPA has demonstrated that the conservation of biological diversity and ecological integrity was a fundamental consideration.
4. Principles relating to improved valuation, pricing and incentive mechanisms *(1) Environmental factors should be included in the valuation of assets and services.* *(2) The polluter pays principles – those who generate pollution and waste should bear the cost of containment, avoidance and abatement.* *(3) The users of goods and services should pay prices based on the full life-cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.* *(4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structure, including market mechanisms, which enable those best placed to*	In considering this principle, the EPA notes that the proponent would bear certain costs relating to waste and pollution, including avoidance, containment, decommissioning, rehabilitation and closure. The proponent would also be responsible for the costs relating to rehabilitation and decommissioning. The EPA has demonstrated due regard to this principle during the assessment of this proposal.

maximise benefits and/or minimize costs to develop their own solution and responses to environmental problems.	
5. The principle of waste minimisation *All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.*	In considering this principle, the EPA notes that the proponent would be expected to address the waste hierarchy and minimise the generation of unavoidable wastes. Liquid and solid waste created as a result of implementation of the proposal would be disposed of according to relevant regulations and legislation. The EPA notes that the discharge of atmospheric pollutants and liquid and solid wastes can be adequately regulated by the Department of Environment Regulation via appropriate Works Approval and Licence conditions under Part V of the *Environmental Protection Act 1986*. The EPA has demonstrated due regard to this principle during the assessment of this proposal.

Environmental principles of the EPA	
1. Best practice *When designing proposals and implementing environmental mitigation and management actions, the contemporary best practice measures available at the time of implementation should be applied.*	In considering this principle, the EPA notes that the proponent has developed design considerations and mitigation measures to manage the potential risks. These reflect measures already in place for the existing Extension Hill operations. The EPA has demonstrated due regard to this principle during the assessment of this proposal.
2. Continuous Improvement *The implementation of environmental practices should aim for continuous improvement in environmental performance.*	In considering this principle, the EPA notes that the proponent operates under a management system which sets out a framework of adaptive management. The EPA has recommended conditions requiring the development of environmental management plans. As outlined in EAG No. 17 - *Preparation of management plans under Part IV of the Environmental Protection Act 1986* (EPA, 2015e), the EPA encourages adaptive management and continual improvement through environmental management plans. The EPA has demonstrated due regard to this principle during the assessment of this proposal.

Appendix 4

Relevant EPA policies and guidance and identified matters

The EPA reviewed its policies and guidance documents for each environmental factor to determine their relevance to the assessment of the proposal. The EPA has outlined the relevant matters discussed in each policy and guidance document for the key environmental factors below.

1. Flora and Vegetation

The EPA considers that the policy and guidance that are relevant for Flora and Vegetation for this assessment are:

- Position Statement No. 2 – Environmental protection of native vegetation in Western Australia (EPA, 2000);
- Position Statement No. 3 – Terrestrial biological surveys as an element of biodiversity protection (EPA, 2002);
- Guidance Statement No. 51 – Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia (EPA 2004a); and
- Technical Guide – Flora and vegetation surveys for environmental impact assessment (EPA and DPAW 2015).

Position Statement No. 2 – *Environmental protection of native vegetation in Western Australia*

The relevant matters in Position Statement No. 2 are outlined below.

1. No known species of plant or animal is caused to become extinct as a consequence of the development and the risks to threatened species are considered to be acceptable.
2. No association or community of indigenous plants or animals ceases to exist as a result of the project.
3. There would be an expectation that a proposal would demonstrate that the vegetation removal would not compromise any vegetation type by taking it below the "threshold level" of 30% of the pre-clearing extent of the vegetation type.
4. Where a proposal would result in a reduction below the 30% level, the EPA would expect alternative mechanisms to be put forward to address the protection of biodiversity.
5. There is a comprehensive, adequate and secure representation of scarce endangered habitats within the project area and/or in areas which are biologically comparable to the project area, protected in secure reserves.
6. The on-site and off-site impacts of the project are identified and the proponent demonstrates that these impacts can be managed.

Position Statement No. 3 – *Terrestrial biological surveys as an element of biodiversity protection*

The relevant matters in Position Statement No. 3 are outlined below.

1. The EPA expects proponents to demonstrate in their proposals that all reasonable measures have been undertaken to avoid impacts on biodiversity. Where some impact on biodiversity cannot be avoided, it

is for the proponent to demonstrate that the impact will not result in unacceptable loss.

2. The EPA expects proponents to ensure that terrestrial biological surveys provide sufficient information to address both biodiversity conservation and ecological function values within the context of the type of proposal being considered and the relevant EPA objectives for protection of the environment.
3. In the absence of information that could provide the EPA with assurance that biodiversity will be protected, the EPA will adopt the precautionary principle.

Position Statement No. 3 refers to definitions, principles and objectives in the first national biodiversity strategy *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996). The EPA notes that the most recent version of the strategy, *Australia's Biodiversity Conservation Strategy 2010-2030* (Commonwealth of Australia 2010) refers to a shortened definition of biological diversity and contains different principles. The 2010 Strategy also notes that a review of the 1996 Strategy found it difficult to objectively measure performance against the qualitative objectives in the 1996 Strategy and that there have been shifts in environmental management approaches regarding biodiversity conservation. Therefore, the EPA has not considered the matters relating to the 1996 Strategy to be relevant for this assessment.

Guidance Statement No. 51 – *Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia*

The relevant matters in Guidance Statement No. 51 are outlined below.

1. Surveys are planned and designed appropriately.
2. The analysis, interpretation and reporting is of a suitable quality and consistent methodology to enable the EPA to judge the impacts of proposals on flora and vegetation.
3. The environment, in particular significant flora and vegetation biodiversity is identified and protected.

Technical Guide – *Flora and vegetation surveys for environmental impact assessment*

The relevant matters in the Technical Guide are outlined below.

1. The level of survey, survey effort and methods used should be appropriate to the bioregion, the local and regional context and the size of the proposal.
2. The analysis, interpretation and reporting undertaken is of a suitable quality and of consistent methodology to enable the EPA to determine the impacts of proposals on flora and vegetation.

2. Rehabilitation and Decommissioning

The EPA considers that the policy and guidance that are relevant for Rehabilitation and Decommissioning for this assessment are:

- *Guidelines for preparing mine closure plans* (EPA and DMP 2015); and
- Environmental Protection Bulletin No. 19 – EPA involvement in mine closure (EPA 2015f).

The EPA notes that Guidance Statement No. 6 – *Rehabilitation of terrestrial ecosystems* (EPA 2006b) was prepared in 2006 to guide the preparation of documentation for the environmental impact assessment process of EPA and to help produce management plans to rehabilitate vegetation. The more recent *Guidelines for preparing Mine Closure Plans* (2011 and revised 2015) also guides the preparation of environmental impact assessment documentation and mine closure plans (which include the rehabilitation of vegetation) for mining proposals. The EPA considers that for mining proposals, the more recent *Guidelines for preparing Mine Closure Plans* is more relevant to its assessment than Guidance Statement No. 6.

Guidelines for Preparing Mine Closure Plans

The relevant matters in the Mine Closure Plan Guidelines are outlined below.

1. Mine closure planning should be an integral part of mine development and operations planning and is a progressive process.
2. The EPA requires that Mine Closure Plans be prepared in accordance with these guidelines.
3. Where mining projects are subject to the Mining Act and rehabilitation and decommissioning is considered a key integrating factor by the EPA, both the DMP and the EPA will assess the Mine Closure Plan.
4. Where the EPA concludes that Rehabilitation and Closure is a Key Integrating Factor in its report on the proposal, the EPA will recommend a condition requiring a Mine Closure Plan to be prepared that is consistent with these guidelines.

Environmental Protection Bulletin No. 19 – EPA involvement in mine closure

The relevant matters for Environmental Protection Bulletin No. 19 are outlined below.

1. The DMP and the EPA may both assess mine closure when an impact or risk is significant. The EPA is most likely to consider an impact or risk significant when an environmental asset with special or unique characteristic is being impacted, or a certain aspect of mine closure poses a high environmental risk.
2. Where it is considered that regulatory efficiencies would be gained, compliance monitoring of these conditions may be delegated to the DMP.

3. Offsets

The EPA has determined that the policy and guidance that are relevant for Offsets for this assessment are:

- WA Environmental Offsets Policy (Government of WA 2011);
- WA Environmental Offsets Guidelines (Government of WA 2014); and
- Environmental Protection Bulletin No. 1 – *Environmental Offsets* (EPA 2014b).

WA Environmental Offsets Policy

The relevant matters in the WA Environmental Offsets Policy are the six principles identified within the Policy, which are outlined below.

1. Environmental offsets will only be considered after avoidance and mitigation options have been pursued.
2. Environmental offsets are not appropriate for all projects (circumstances).
3. Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.
4. Environmental offsets will be based on sound environmental information and knowledge.
5. Environmental offsets will be applied within a framework of adaptive management.
6. Environmental offsets will be focussed on longer term strategic outcomes.

WA Environmental Offsets Guidelines

The WA Environmental Offsets Guidelines complement the Offsets Policy by clarifying the determination and application of environmental offsets in Western Australia, with reference to the offsets principles in the Offsets Policy.

In addition to guidance on the application of the principles contained within the Offsets Policy, the relevant matters in the Offsets Guidelines for this assessment are outlined below.

1. Environmental offsets will only be applied where the residual impacts of a project are determined to be significant, after avoidance, minimisation and rehabilitation have been pursued.
2. Proponents must apply the mitigation hierarchy (avoid, minimise, rehabilitate and offset) to reduce the potential impacts of a proposal on the environment.
3. The residual impact significance model outlines how significance is determined and when an offset is likely to be required, or may be required, in relation to relevant EPA environmental factors.

4. In determining the significance of an impact (and the requirement for an offset) it is important to consider the impacts in the regional context (cumulative impacts).
5. An offset needs to be relevant not only to the environmental value being impacted but also to the associated attributes which may be lost or are at risk. Impacts to an environmental value are required to be offset by actions that benefit the same environmental value being impacted.

Environmental Protection Bulletin No. 1 – *Environmental Offsets*

The relevant matters in Environmental Protection Bulletin No. 1 for this assessment are outlined below.

1. The EPA adopts the WA Environmental Offset Policy and WA Environmental Offset Guidelines for application through the environmental impact assessment process.
2. Where the EPA is of the view that a significant residual impact remains after avoidance, minimisation and rehabilitation efforts, the EPA will ensure that any offsets are recommended as conditions of approval in the EPA's report to the Minister for Environment, as well as including details on the rationale for the offset.
3. It is the EPA’s preference to recommend specific offset conditions to the Minister rather than identifying the need for an offset plan to be developed post-approval.
4. As part of an Environmental Review document, proponents must include a section discussing how it has applied the mitigation hierarchy to its proposal. Offsets should be addressed in a separate section of the document, after the assessment of environmental factors.
5. If it is likely that a proposal will have a significant residual impact, the proponent should provide further details on the proposed offset, as outlined in the bulletin. The final decision on the need for and appropriateness of any offsets will be determined by the EPA at the end of the assessment process.

Appendix 5

Identified decision-making authorities and recommended environmental conditions

Identified decision-making authorities

Section 44(2) of the *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA's recommended conditions and procedures.

Section 45(1) of the *Environmental Protection Act 1986* requires the Minister for Environment to consult with decision-making authorities, and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities (DMAs) have been identified for this consultation:

Decision-making authority	Approval
1. Minister for Environment	*Wildlife Conservation Act 1950*
2. Minister for Water	*Rights in Water and Irrigation Act 1914*
3. Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972*
4. CEO, Department of Environment Regulation	Part V of the *Environmental Protection Act 1986*
5. Director, Environment Division, Department of Mines and Petroleum	*Mining Act 1978*
6. State Mining Engineer, Department of Mines and Petroleum	*Mine Safety and Inspection Act 1994*
7. Chief Dangerous Goods Officer, Department of Mines and Petroleum	*Dangerous Goods Safety Act 2004*

Note: In this instance, consultation and agreement is only required with DMAs 1-3, since these DMAs are Ministers.

Statement No. xxx

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
***(Environmental Protection Act 1986*)**

MT GIBSON RANGE MINE OPERATIONS IRON HILL DEPOSITS

Proposal:	To mine hematite ore from the Iron Hill and Iron Hill South Deposits located on the Mt Gibson Range, approximately 270 kilometres east-south-east of Geraldton. The proposal also includes the construction of a waste rock landform and support infrastructure.
Proponent:	Mount Gibson Mining Limited Australian Company Number 074 575 885
Proponent Address:	Level 1, 2 Kings Park Road WEST PERTH WA 6005
Assessment Number:	2034

Report of the Environmental Protection Authority: 1570

Pursuant to section 45 of the *Environmental Protection Act 1986* it has been agreed that the proposal described and documented in Tables 1 and 2 of Schedule 1 may be implemented and that the implementation of the proposal is subject to the following implementation conditions and procedures:

1 Proposal Implementation

1-1 When implementing the proposal, the proponent shall not exceed the authorised extent of the proposal as defined in Table 2 in Schedule 1, unless amendments to the proposal and the authorised extent of the proposal have been approved under the EP Act.

2 Contact Details

2-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty eight (28) days of such change. 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.

3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after five (5) years from the date on this Statement, and any commencement, prior to this date, must be substantial.

3-2 Any commencement of implementation of the proposal, on or before five (5) years from the date of this Statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this Statement.

4 Compliance Reporting

4-1 The proponent shall prepare, submit and maintain a Compliance Assessment Plan to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to implementation, whichever is sooner.

4-2 The Compliance Assessment Plan shall indicate:

(1) the frequency of compliance reporting;

(2) the approach and timing of compliance assessments;

(3) the retention of compliance assessments;

(4) the method of reporting of potential non-compliances and corrective actions taken;

(5) the table of contents of Compliance Assessment Reports; and

(6) public availability of Compliance Assessment Reports.

4-3 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 4-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 4-1.

4-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 4-1 and shall make those reports available when requested by the CEO.

4-5 The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.

4-6 The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission

of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;

(2) include a statement as to whether the proponent has complied with the conditions;

(3) identify all potential non-compliances and describe corrective and preventative actions taken;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 4-1.

5 Public Availability of Data

5-1 Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)) relevant to the assessment of this proposal and implementation of this Statement.

5-2 If any data referred to in condition 5-1 contains particulars of:

(1) a secret formula or process; or

(2) confidential commercially sensitive information;

the proponent may submit a request for approval from the CEO to not make these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

6 Flora and Vegetation – Outcome-based Condition Environmental Management Plan

6-1 Prior to the commencement of ground disturbing activities, or as otherwise agreed in writing by the CEO, the proponent shall prepare and submit a Condition Environmental Management Plan to the satisfaction of the CEO on advice of Parks and Wildlife to demonstrate that the following **environmental outcome** will be met:

(1) no adverse effects on native vegetation on the Mt Gibson Range, including the Rare Flora species, outside the development envelope shown in Schedule 1.

6-2 The plan required by condition 6-1 shall include provisions required by condition 6-3 to address indirect impacts on Rare Flora (*Darwinia masonii* and *Lepidosperma gibsonii*) and vegetation health including from, but not limited to dust, weeds and fire as a result of implementation of the proposal.

6-3 The Condition Environmental Management Plan shall:

(1) specify **trigger criteria** that will trigger the implementation of trigger level actions if exceeded;

(2) specify **threshold criteria** that:

(a) provides a limit, which the proponent must not exceed, beyond which the environmental outcome identified in condition 6-1 is not achieved; and

(b) will trigger the implementation of **threshold contingency actions** if exceeded.

(3) specify **monitoring** to determine if trigger criteria and threshold criteria are exceeded;

(4) specify **trigger level actions** to be implemented in the event that trigger criteria have been exceeded;

(5) specify **threshold contingency actions** to be implemented in the event that threshold criteria are exceeded;

(6) provide the format and timing for the reporting of monitoring results and analysis against threshold criteria to demonstrate that condition 6-1 has been met over the reporting period in the Compliance Assessment Report required by condition 4; and

(7) provide for reporting of exceedances of the threshold criteria.

6-4 After receiving notice in writing from the CEO that the Condition Environmental Management Plan satisfies the requirements of condition 6-3 for condition 6-1, the proponent shall, prior to the commencement of ground disturbing activities:

(1) commence implementation of the provisions of the Condition Environmental Management Plan; and

(2) continue to implement the Condition Environmental Management Plan until the CEO has confirmed by notice in

writing that the proponent has demonstrated the outcome specified in condition 6-1 has been met.

6-5 In the event that monitoring indicates exceedance of threshold criteria specified in the Condition Environmental Management Plan, the proponent shall:

(1) report the exceedance in writing within seven (7) days of the exceedance being identified;

(2) immediately implement the threshold contingency actions specified in the Condition Environmental Management Plan and continue implementation of those actions until the trigger criteria are being met, or until the CEO has confirmed by notice in writing that it has been demonstrated that the environmental outcome in conditions 6-1 is being met and implementation of the trigger level actions and/or threshold contingency actions are no longer required;

(3) investigate to determine the cause of the threshold criteria being exceeded;

(4) identify additional measures required to prevent the threshold criteria being exceeded in the future;

(5) investigate to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and

(6) provide a **report to the CEO** within ninety (90) days of the exceedance being reported. The report shall include:

(a) details of threshold contingency actions implemented;

(b) the effectiveness of the threshold contingency actions implemented, monitored and measured against trigger criteria and threshold criteria;

(c) the findings of the investigations required by condition 6-5(3) and 6-5(5);

(d) additional measures to prevent the threshold criteria being exceeded in the future; and

(e) measures to control or abate the significant adverse environmental impacts which may have occurred.

6-6 The proponent:

(1) may review and revise the Condition Environmental Management Plan, or

(2) shall review and revise the Condition Environmental Management Plan as and when directed by the CEO.

6-7 The proponent shall implement the latest revision of the Condition Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 6-3.

7 Offsets

7-1 The proponent shall undertake an offset, as outlined in conditions 7-2 and 7-8, with the objective to counterbalance the significant residual impact on:

(1) 1,327 plants of *Darwinia masonii*; and

(2) 863 plants of Lepidosperma gibsonii,

as a result of the implementation of the proposal.

7-2 Within six months of issue of this Statement, or as otherwise agreed in writing by the CEO, the proponent shall prepare, in consultation with Parks and Wildlife and submit a *Darwinia masonii* Offset Plan to the CEO.

The objective of the Plan is to ensure a self-sustaining population of at least 1,327 mature individuals of *Darwinia masonii*.

The *Darwinia masonii* Offset Plan shall:

(1) describe the plant material to be used for translocation, to promote the viability of the species, on advice of Parks and Wildlife;
(2) identify suitable translocation sites on previously disturbed areas, or areas otherwise agreed to by Parks and Wildlife, on the Mt Gibson Range;
(3) identify the number of mature plants that each translocation site could support;
(4) describe the ongoing protection measures afforded to the translocated plants from threats including, but not limited to, fire and future exploration and mining;
(5) identify completion criteria to demonstrate that the translocated plants have established, are reproducing and there is a soil-stored seedbank;
(6) identify timeframes and responsibilities for implementation;
(7) identify reporting procedures, including the content, format, timing and frequency for the reporting of monitoring data against the completion criteria, in accordance with condition 7-3; and
(8) identify management and contingency measures should completion criteria not be met.

7-3 After receiving notice in writing from the CEO that the *Darwinia masonii* Offset Plan satisfies the requirements of condition 7-2, the proponent shall:

(1) implement the management actions in accordance with the requirements of the *Darwinia masonii* Offset Plan; and

(2) continue to implement the management actions in accordance with the requirements of the *Darwinia masonii* Offset Plan until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 7-1 has been met.

7-4 The proponent shall monitor the success of implementation of the *Darwinia masonii* Offset Plan required by condition 7-2 and provide a written report, including monitoring data, to the CEO and Parks and Wildlife every twelve (12) months on the progress of this project until completion criteria have been met. The first report must be submitted within fifteen (15) months of receiving the notice under condition 7-3.

7-5 Should the objective of the *Darwinia masonii* Offset Plan required by condition 7-2 not be achieved within ten (10) years from implementation of the Plan, the proponent shall submit a revised *Darwinia masonii* Offset Plan to the satisfaction of the CEO, outlining management strategies to achieve the outcome specified in condition 7-2. The revised plan must be submitted within three months of the ten (10) year period lapsing.

7-6 The proponent:

(1) may review and revise the *Darwinia masonii* Offset Plan, or

(2) shall review and revise the *Darwinia masonii* Offset Plan as and when directed by the CEO.

7-7 The proponent shall implement the latest revision of the *Darwinia masonii* Offset Plan, which the CEO, on advice of Parks and Wildlife, has confirmed by notice in writing, satisfies the requirements of condition 7-2.

7-8 Within six months of issue of this Statement, or as otherwise agreed in writing by the CEO, the proponent shall prepare, in consultation with Parks and Wildlife and submit a *Lepidosperma gibsonii* Offset Plan to the CEO.

The objectives of the *Lepidosperma gibsonii* Offset Plan are to:

- confirm the distribution of *Lepidosperma gibsonii*; and
- ensure a self-sustaining population of at least 863 mature individuals of *Lepidosperma gibsonii*.

The *Lepidosperma gibsonii* Offset Plan shall:

(1) describe a research program, to be carried out by or on behalf of the proponent, to confirm the taxonomic identify, and subsequently the numbers, of *Lepidosperma gibsonii* plants on the surrounding plains of the Mt Gibson Range, to the west of the Great Northern Highway. The outcomes of the research program to be provided to the CEO, Parks and Wildlife and to be made publicly available;

(2) describe the plant material to be used for translocation, to promote the viability of the species, on advice of Parks and Wildlife;

(3) identify suitable translocation sites on previously disturbed areas;

(4) identify the number of mature plants that each translocation site could support;

(5) describe the ongoing protection measures afforded to the translocated plants from threats including, but not limited to, fire, grazing and future exploration and mining;

(6) identify completion criteria to demonstrate that the translocated plants have established and are reproducing;

(7) identify timeframes and responsibilities for implementation;

(8) identify reporting procedures, including the content, format, timing and frequency for the reporting of monitoring data against the completion criteria, in accordance with condition 7-9; and

(9) identify management and contingency measures should completion criteria not be met.

7-9 After receiving notice in writing from the CEO that the *Lepidosperma gibsonii* Offset Plan satisfies the requirements of condition 7-8, the proponent shall:

(1) implement the research and management actions in accordance with the requirements of the *Lepidosperma gibsonii* Offset Plan; and

(2) continue to implement the research and management actions in accordance with the requirements of the *Lepidosperma gibsonii* Offset Plan until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 7-8 has been met.

7-10 The proponent shall monitor the success of implementation of the *Lepidosperma gibsonii* Offset Plan required by condition 7-8 and provide a written report, including monitoring data, to the CEO and Parks and Wildlife every twelve months on the progress of this project until completion criteria have been met. The first report must be submitted within fifteen (15) months of receiving the notice under condition 7-9.

7-11 Should the objective of the *Lepidosperma gibsonii* Offset Plan as required by condition 7-8 not be achieved within ten (10) years from implementation of the Plan, the proponent shall submit a revised *Lepidosperma gibsonii* Offset Plan to the satisfaction of the CEO,

outlining management strategies to achieve the outcome specified in condition 7-8. The revised plan must be submitted within three months of the ten (10) year period lapsing.

7-12 The proponent:

(1) may review and revise the *Lepidosperma gibsonii* Offset Plan, or

(2) shall review and revise the *Lepidosperma gibsonii* Offset Plan as and when directed by the CEO.

7-13 The proponent shall implement the latest revision of the *Lepidosperma gibsonii* Offset Plan, which the CEO, on advice of Parks and Wildlife has confirmed by notice in writing, satisfies the requirements of condition 7-8.

Schedule 1

Table 1: Summary of the Proposal

Proposal title	Mt Gibson Range Mine Operations Iron Hill Deposits
Short description	To mine hematite ore from the Iron Hill and Iron Hill South Deposits, located on the Mt Gibson Range, approximately 270 kilometres east-south-east of Geraldton. The proposal is for the construction of two mine pits, a waste rock landform and support infrastructure.

Table 2: Location and authorised extent of physical and operational elements

Column 1	Column 2	Column 3
Elements	**Location**	**Authorised extent**
Mine pits, waste rock landform and support infrastructure	Figure 2	Clearing of no more than 87 hectares within the 112 hectare development envelope.

Table 3: Abbreviations and Definitions

Acronym or Abbreviation	Definition or Term
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.
DMP	Department of Mines and Petroleum
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986*
OEPA	Office of the Environmental Protection Authority
Parks and Wildlife	Department of Parks and Wildlife

Figures (attached)

Figure 1 Regional location

Figure 2 Development envelope and proposal layout

Figure 3 Ridges and significant flora on the Mt Gibson Range

Figure 1 Regional location

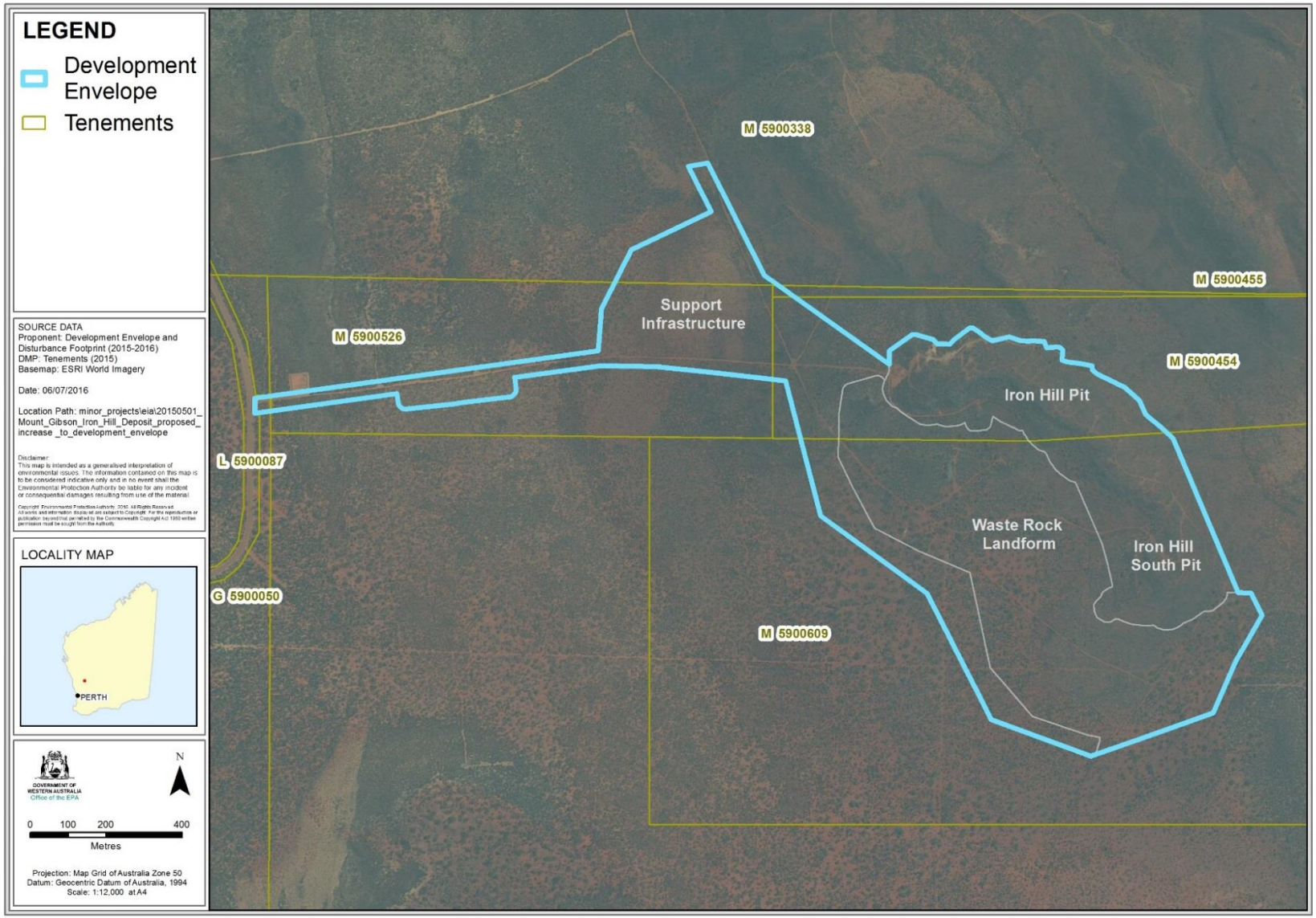

Figure 2 Development envelope and proposal layout

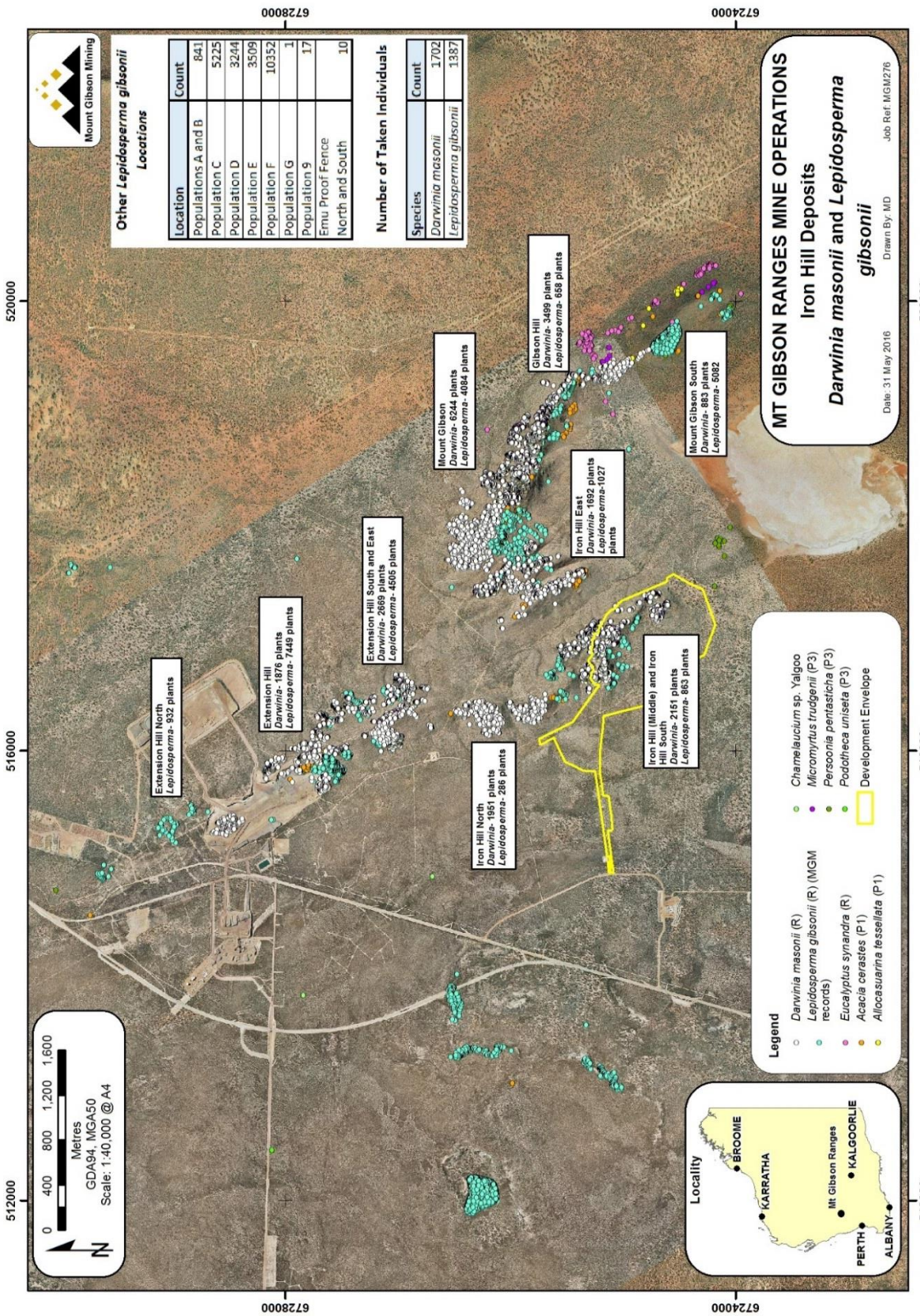

Figure 3 Ridges and significant flora on the Mt Gibson Range

Schedule 2

Coordinates defining the Mt Gibson Range Mine Operations Iron Hill Deposits development envelope are held by the Office of the Environmental Protection Authority, Document Reference Number 2016-1464835389386.

Appendix 6

Summary of submissions and proponent's Response to Submissions

Provided on CD in hardcopies of this report and on the EPA's website at www.epa.wa.gov.au