

ADDITIONAL SUPPORTING INFORMATION REGARDING THE APPLICATION OF OFFSETS FOR THE EASTERN RIDGE REVISED PROPOSAL

BHP Billiton Iron Ore is referring the Eastern Ridge Revised Proposal (the Proposal) for the application of offsets to the Environmental Protection Authority (EPA) following the release of the *Offsets Guideline* (WA Government 2014).

A BHP Billiton Iron Ore Offsets Strategy is currently being developed and will continue to be developed throughout 2016 in parallel to the EPA's update of the *Offsets Guideline* 'to include further information on the use of metrics in determining offsets and on the determination and application of offsets for cumulative impacts' (WA Government 2014 p. 3), through avenues such as established strategic working groups.

This correspondence has been compiled to outline:

- a) how BHP Billiton Iron Ore has completed the required Offsets Template for the Proposal; and
- b) work currently underway to answer the questions in the required *Offsets Template Form*.

An *Impact Reconciliation Procedure* for the Proposal will be prepared and presented as necessary for discussion at strategic working group meetings.

Completed Offsets Template Form for the Eastern Ridge Revised Proposal

The required *Offsets Template Form* is completed and attached to this document. Following application of the Mitigation Hierarchy outlined in the *Offsets Guideline* (WA Government 2014), BHP Billiton Iron Ore has minimised or avoided proposed native vegetation clearing for the Proposal where practicable. Of the proposed 1,560 ha of additional¹ native vegetation clearing for the Proposal, BHP Billiton Iron Ore has divided this into two types of 'clearing domains'. These are:

- mine pits; and
- mine infrastructure (including overburden storage areas, stockpiles, fixed plant and haul roads).

In the case of this Proposal, BHP Billiton Iron Ore understands that, in accordance with the *Offsets Guideline* (WA Government 2014), offsets will be applied to the clearing of native vegetation in 'Good' condition or above.

Notwithstanding this, it is noted that BHP Billiton Iron Ore has been undertaking rehabilitation activities since the 1970s. Considerable work has been undertaken in recent years to compile and interpret rehabilitation monitoring data. The data indicates that several domains can be rehabilitated back to a comparable vegetation community and condition (i.e. 'Good' or above). At the appropriate time, BHP Billiton Iron Ore will present relevant information on rehabilitation outcomes to the OEPA and other decision-making authorities.

BHP Billiton Iron Ore's view on its rehabilitation practices as listed in the attached completed *Offsets Template Form* for this Proposal is briefly explained below.

¹ Note the Proposal has an existing allocation of 1,910 ha approved clearing that is not subject to Offsets (as approved under Ministerial Statements 712 and 834) and 350 ha approved clearing that is subject to Offsets (as approved under Ministerial Statement 1018). This equates to 2,260 ha approved clearing for the Proposal in addition to the 1,560 ha outlined within this form.

Eastern Ridge Clearing Domains

Mine Pits – 839 ha

The scenario modelled for the Proposal is that the mine pits will not be back-filled and as such, this clearing domain is unlikely to return to the pre-existing landform. Therefore, BHP Billiton Iron Ore acknowledges that the mine pits will be subject to offsets based on a no-backfill scenario.

Mine Infrastructure – 721 ha

Monitoring data to demonstrate success in rehabilitating overburden storage areas back to 'Good' condition or above at BHP Billiton Iron Ore operations is currently considered limited, however, is expected to become more widely available over coming years.

BHP Billiton Iron Ore is currently reviewing and compiling a range of monitoring data which is expected to demonstrate that the clearing domains for areas including stockpiles, fixed plant and haul roads can be rehabilitated back to a comparable 'Good' condition or above.

At the time of submission of this Proposal, however, BHP Billiton Iron Ore acknowledges that clearing for these purposes will be subject to offsets based on the limited amount of publicly available data at the present time.

Continuous Improvement in Rehabilitation at BHP Billiton Iron Ore

BHP Billiton Iron Ore acknowledges the journey it is currently on with regard to continuous improvement in rehabilitation. BHP Billiton Iron Ore believes that there are valuable opportunities available to showcase success in rehabilitating selected clearing domains back to a condition of 'Good' or above, thus reducing residual impacts as a result of native vegetation clearing in the Pilbara region in the future. These successes would provide learning and sharing opportunities across the industry to a range of proponents and we look forward to discussing these further at the appropriate time.

Eastern Ridge Revised Proposal									
Existing environment/ Impact	Avoid and minimise	Rehabilitation type	Mitigation	Significant Residual Impact	Offset Calculation Methodology				
					Type	Risk	Likely offset success	Time Lag	Offset Quantification
1,560 hectares of clearing (plus an additional 350 hectares already approved for Orebody 32)									
839 hectares of native vegetation to be cleared in 'Good' condition or above - for a pit area. (Note an additional 220 hectares has already been approved for Orebody 32).	The 'worst-case' scenario is that the mine pits will not be back-filled. The Proponent is committed to prioritising back-fill of depleted mine pits where practicable. Further investigations in relation to closure of the mine voids are addressed through the Mine Closure Plan (current and future revisions).	Site specific rehabilitation approach based on ability to backfill.	<p><u>Can the environmental values be rehabilitated/Evidence?</u> No. Various closure scenarios are being investigated, however, worst case is that the depleted pit will not be backfilled.</p> <p>The Proponent would like the EPA to note that there are comparable sites whereby mine batters and 'in-pit OSAs' have been successfully rehabilitated. The Proponent proposes to compile case-studies and present to the EPA as part of discussions via working strategy groups and/or in relation to future developments.</p>	<p><u>Extent</u> 839 hectares</p> <p><u>Quality</u> A range of back-fill closure options are currently being modelled and are discussed further in the Mine Closure Plan. Based on the worst-case scenario, some mine voids may become a pit-lake.</p> <p><u>Conservation Significance</u> Nil.</p> <p><u>Land Tenure</u> Pastoral Lease or Unallocated Crown Land.</p> <p><u>Time Scale</u> As detailed and revised in the Mine Closure Plan.</p> <p><u>According to the agreed significance framework, residual impact is considered to be significant because:</u> 839 ha of native vegetation in 'Good' condition or above within the Hamersley IBRA sub-region will be cleared and potentially (worst-case scenario) not rehabilitated.</p>	Monetary offsets contribution to the Pilbara Offsets Strategic Fund.	N/A	Proposed Ministerial Conditions are provided in the Eastern Ridge Revised Proposal Referral Document (Appendix J).	Permanent.	\$750 per hectare of native vegetation in 'Good' condition or above cleared within the Hamersley IBRA subregion.
721 hectares of native vegetation in 'Good' condition or above to be cleared - for Overburden Storage Areas (OSAs) and other mine infrastructure (including stockpiles and roads). (Note an additional 130 hectares has already been approved for Orebody 32).	Minimise clearing for OSAs through the progressive backfilling of depleted pits where practicable. Minimise clearing through the use of existing infrastructure such as workshops, offices, etc. at Orebody 24 and Orebody 25.	Site specific rehabilitation approach based on ability to backfill. Progressive rehabilitation in accordance with the Mine Closure Plan.	<p><u>Can the environmental values be rehabilitated/Evidence?</u> Yes. BHP Billiton Iron Ore has seen recent successes in the rehabilitation of OSAs at various Pilbara operations, albeit limited data. BHP Billiton Iron Ore has successes in rehabilitating a range of low-impact disturbances of a comparable nature and timeframe at various Pilbara operations.</p> <p>The Proponent would like the EPA to note that notwithstanding the currently limited data, the Proponent proposes to compile case-studies for presentation to the EPA via working strategy groups in relation to future developments as more data demonstrating rehabilitation success of OSAs becomes available.</p> <p><u>Operator experience in undertaking rehabilitation?</u> Refer to rehabilitation and monitoring data as reported within the Annual Environmental Report.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Hummock and Tussock Grassland frequenting with Acacia.</p> <p><u>Time lag?</u> 12 years post closure.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> A brief overview of recent successes in the rehabilitation of comparable low impact clearing is outlined in the cover letter. The Proponent would like the EPA to note that extensive rehabilitation monitoring data is currently being compiled to demonstrate the credibility of its rehabilitation. The Proponent proposes to compile case studies for presentation to the EPA in future.</p>	<p><u>Extent</u> 712 hectares</p> <p><u>Quality</u> The Proponent acknowledges that there is currently limited data available to demonstrate the quality of the the post-mining OSA to the pre-mining condition, however there have been some successes. The Proponent has had successes in rehabilitating 'low impact' clearing disturbance back to a similar pre-mining condition.</p> <p><u>Conservation Significance</u> Due to the direct impacts on the Priority 3 <i>Eremophila magnifica</i> subsp. <i>velutina</i> from the Eastern Ridge Revised Proposal, material from this species will be used during progressive rehabilitation activities undertaken on site as described in the Eastern Ridge Mine Closure Plan.</p> <p><u>Land Tenure</u> Unallocated crown land or pastoral.</p> <p><u>Time Scale</u> Progressively in accordance with the Mine Closure Plan up to completion in approximately 2055.</p> <p><u>According to the agreed significance framework, residual impact is considered to be significant because:</u> 712 ha of native vegetation in 'Good' condition or above within the Hamersley IBRA sub-region will be cleared and potentially not rehabilitated back to its pre-mining condition.</p>	Monetary offsets contribution to the Pilbara Offsets Strategic Fund.	N/A	Proposed Ministerial Conditions are provided in the Eastern Ridge Revised Proposal Referral Document (Appendix J).	12 years post closure.	Offsets as per the Offset Guidelines (Western Australian Government 2014).