



BHP Billiton Iron Ore

**Eastern Ridge mining
operations**

Mine Closure Plan

Mineral Lease 244SA

Final draft version

January 2016

Document Amendment Record

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1.0	Updated to reflect the <i>Guidelines for Preparing Mine Closure Plans</i> (May 2015). Update to reflect minor changes in business process and approach to Closure Planning across WAIO.	24 August 2015
1.1	Updated to incorporate minor comments and feedback from the Department of Mines and Petroleum and the Department of Water	7 January 2016

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Executive Summary

The Eastern Ridge mining operations are located between three and 13 kilometres north east of the Newman Township on Mineral Lease 244SA. The Eastern Ridge mining operations consists of a number of operations including Orebody 23, Orebody 24, Orebody 25, Orebody 32 and the proposed new Orebody 25 West.

There are various historic closure requirements and commitments across the various orebody operations at Eastern Ridge mining operations, which date back to 1988. This Mine Closure Plan (MCP) has been prepared to consolidate historic closure requirements across various existing operations as well as address closure requirements for new operations under one new regional hub-based MCP for the Eastern Ridge mining operations.

This MCP will also support an upcoming BHP Billiton Iron Ore Referral under Part IV of the *Environmental Protection Act 1986* (EP Act) relating to the Eastern Ridge mining operations. The Referral will be to amalgamate three existing Ministerial Statements to manage Orebody 24, Orebody 25 and the new Orebody 32, and also seek approval for expansions at Orebody 25 West with one new Ministerial Statement, superseding historic statements.

BHP Billiton Iron Ore considers that this MCP provides an opportunity to consolidate and simplify historic closure obligations at the Eastern Ridge mining operations as well as addressing the requirements of the updated *Guidelines for Preparing Mine Closure Plans 2015* (EPA and DMP, 2015). Appendix A provides a cross-reference between all of the historic conditions applicable to Eastern Ridge mining operations and where they are addressed in this MCP for ease of reference.

The BHP Billiton business is committed to environmental stewardship. The BHP Billiton Charter is the overarching document that articulates the corporate vision and values and what BHP Billiton stands for. The first value in the Company Charter is:

Sustainability: putting health and safety first, being environmentally responsible and supporting our communities.

The BHP Billiton Iron Ore's closure and rehabilitation objective is to:

Create a safe, stable, non-polluting and sustainable landscape that is consistent with key stakeholder agreed social and environmental values and aligned with creating optimal business value.

To guide the development and implementation of mine closure and rehabilitation for the Pilbara operations, BHP Billiton Iron Ore has established a set of guiding closure principles which are applied to the Eastern Ridge mining operations.

The Guiding Closure Principles for BHP Billiton Iron Ore's Pilbara operations address final land use, land management, safety, landforms, mine planning, ecosystem sustainability, water, decommissioning, contaminated sites, human resources and community assets.

Executive Summary (ES) Table 1 provides a summary of the key risks and management approaches by technical area. The table goes on to provide a summary of the activities and actions that will be undertaken prior to closure and post-closure to enable the closure outcomes described. Improvement activities, as identified by the knowledge gaps in the analysis of data, are also provided in summary. Full descriptions and context are provided in the relevant sections of this MCP.

ES Table 1 – Summary of Key Risks and Management Approaches

Technical Area	Key Risks and Issues	Management Response	Tools (processes, plans & guidelines)	Improvement Activities
<p>Sustainability</p> <p>Flora and Vegetation; Terrestrial Fauna (incl. Short-range Endemic Invertebrate Fauna); Subterranean Fauna; and Soil Characteristics</p>	<p>Revegetation establishment.</p> <p>Standing water attracts fauna.</p>	<ul style="list-style-type: none"> Growth media management in accordance with the BHP Billiton Iron Ore's Growth Media Management Procedure (SPR-IEN-LAND-009). Local provenance native seed (from the local area, but as a minimum from within 100 km of site within the Pilbara Biogeographic Region). 	<ul style="list-style-type: none"> WAIO Rehabilitation Standard (Controlled Document ID 0001074) Growth Media Management Procedure (SPR-IEN-LAND-009). 	<ul style="list-style-type: none"> Locations which may be available for a minimum of five years for rehabilitation/landform trials will be investigated Genetic material collected from <i>Eremophila magnifica</i> subsp. <i>veluntina</i> (Priority 3) will also be considered as part of revegetation activities. Continued development of the Growth Media Atlas to inform rehabilitation projects
<p>Landforms</p> <p>Pit Void</p> <p>Overburden Storage Areas (OSAs)</p>	<p>Landform instability (pit voids).</p> <p>Landform instability (OSAs).</p>	<ul style="list-style-type: none"> Construct final landforms (as outlined in Table 23), informed by ongoing waste characterisation, erosion potential modelling and integrated landform considerations. For mine voids that will not be backfilled the final pit design will include abandonment bunds. Mine void closure strategies to be implemented as outlined in Table 24 	<ul style="list-style-type: none"> Waste characterization and erosion potential modelling Surface water hydrology assessments (considers upstream catchment, sediment load, downstream receptors). Geological model (highlights fault zones). Geotechnical pit model informs pit design. Survey (final blast wall design against actual pit wall). 	<ul style="list-style-type: none"> Detailed closure landform designs (integrating all domains) to be developed based on outcomes of technical studies and assessments. Ongoing characterisation of waste is required to refine the mine model and inform final landform designs. Final landform design confirmed through 3D landform evolution modelling (SIBERIA) once the detailed design has been completed. Review of historical performance to inform regular review and update of relevant procedures / practices Validation of design assumptions during operational life of mine. Detailed slope stability analysis to inform final abandonment bunds location for pit faces and mine pits remaining post closure. Detailed slope stability analysis to inform final abandonment bunds location for pit faces and mine pits remaining post closure. Validation of design assumptions during operational life of mine Review of historical performance to inform regular review and update of relevant procedures / practices. Detailed closure landform designs (integrating all domains) to be developed based on outcomes of technical studies and assessments.
<p>Terrestrial Environmental Quality</p> <p>Acid Metalliferous Drainage (AMD)</p>	<p>Potential acid and saline drainage forming materials</p>	<ul style="list-style-type: none"> Orebody 23, Orebody 25 Pit 1 and 3: Backfill of the BWT pit to AWT with geochemically inert waste. Management of cumulative impact period during operations through managed aquifer recharge (if required) to reduce accumulation of solutes and spikes being flushed. Orebody 24 and Orebody 25 West: base case strategy pit void remains (pit lake forms). Mine void closure strategy to be reviewed over life of mine to ensure any emerging residual AMD risks are addressed. Options include: <ul style="list-style-type: none"> Avoiding exposure of PAF in final pit wall Backfill to above pre-mining water table covering exposed PAF with 10-20m of NAF or ANC material (dependent of GW recovery level). 	<ul style="list-style-type: none"> AMD Management Standard Conformance to mine plan. Verification of OSA compliance to 'as dumped design' Research and Development (store and release, and other programs). Life of Mine waste strategy informed by the closure plan. PAF coding included within Resource Model carried through to Mining Model Eastern Ridge AMD Risk Assessment OSA Design Manual Monitoring of risk indicators (visual inspection of waste dumps, surface water sampling, groundwater sampling). 	<p>AMD</p> <ul style="list-style-type: none"> Develop TARP for Orebody 23 and Orebody 25 to enable timely response to water quality risks as they arise before and during the backfill process. Understand final exposures throughout the life of mine for Orebody 24, Orebody 25 West and Orebody 32 to develop mine waste closure strategy that addresses residual AMD risk. Improvements in modelling of waste geochemistry and coding (moving towards NAPP modelling) in block models for identifying materials with potential AMD risk. Geochemical waste characterization studies including: <ul style="list-style-type: none"> Additional sampling and analysis of waste from Orebody 23, Orebody 24 Orebody 25 Pit 3, Orebody 25 West and Orebody 32. Carbon speciation test work Acid buffering characteristic curves Mineralogical assessment (quantitative X-ray diffraction) Supplemental leach tests

Technical Area	Key Risks and Issues	Management Response	Tools (processes, plans & guidelines)	Improvement Activities
				<ul style="list-style-type: none"> - Kinetic testing using AMIRA free draining columns - Saturated column test work • Hydrogeochemical modelling to validate predictions regarding solute dilution and attenuation. • Review the AMD risk assessment for Orebody 32 following update of the geological model with more extensive data. <p>Potentially Contaminated Sites</p> <ul style="list-style-type: none"> • Contamination assessments are progressively being undertaken for potential contaminated sites, in accordance with the requirements of the DER and relevant technical guidelines. Prepare and implement remediation plan, as appropriate.
<p>Hydrology</p> <p>Surface water Groundwater</p>	<p>Creek capture.</p> <p>Surface water quality and volume.</p> <p>Construction of abandonment bund and interaction with protection bund.</p>	<ul style="list-style-type: none"> • Closure Management consistent with the objectives of the EPWRMP. <p>Surface water</p> <ul style="list-style-type: none"> • Orebody 23 and Orebody 25 Pit 3 will be backfilled to the pit crest to manage the likelihood of creek capture and mitigate the need for an abandonment bund. • Flood protection solutions designs, such as engineered flood levees, to manage likelihood of creek capture for Orebody 25 West (Pits adjacent to Homestead Creek) and Orebody 32. • Orebody 32 diversions need to be appropriately designed for closure to ensure a permanent flow path is sustained post-closure. <p>Groundwater</p> <ul style="list-style-type: none"> • Mine void closure strategy for Orebody 23 and Orebody 25 Pit 1 and 3: backfill to AWT with inert waste. • Mine void closure strategy for Orebody 25 West (Joffre pit) and Orebody 24 and Orebody 32 Pit void remains. Impact assessment does not show that any further actions are required, as potential risk of impact is localised. 	<p>Surface Water</p> <ul style="list-style-type: none"> • Design of integrated landforms across all domains taking account of the post-closure surface water regime as detailed in Section 7.8. • Surface water modelling, including studies undertaken to determine the local surface water drainage requirements and detailed design criteria for flood bunding to meet closure requirements. • Surface water assessments inform infrastructure design. • OSA Design Manual. • Master Area design review process to verify that closure design guidance has been incorporated. • Flood protection design and final landform design, especially of areas adjacent to creek and drainage lines, for closure (appropriate specifications e.g., design life). • Surface water monitoring network (water quantity and quality). <p>Groundwater</p> <ul style="list-style-type: none"> • WAIO AMD Management Standard (BHP Billiton Iron Ore, 2013). • Eastern Ridge AMD Risk Assessment (Appendix E). • Conceptual Hydrogeological model. • Numerical Hydrogeological model inform pit closure strategy (backfill, backfill material, through flow) • Monitoring of groundwater levels, via regional monitoring network. • Monitoring of risk indicators for AMD (visual inspection of waste dumps, surface water sampling, groundwater sampling). • Conformance to mine plan checks and balances. Verification of OSA compliance to 'as dumped design'. • Research and development (store and release, and other programs). • Life of Mine waste strategy informed by the 	<p>Surface Water</p> <ul style="list-style-type: none"> • Complete hydrological and hydraulic modelling of Homestead Creek and major tributaries to assess impacts on Orebody 32 and Orebody 25 West pits at closure and inform closure options. • Prepare flood protection design, such as engineered flood levee, of Orebody 32 and Orebody 25 West (pits adjacent to Homestead Creek and drainage lines), for closure. • Develop design principles and details for structures remaining post mining that will be exposed to surface drainage (bunds, diversion channels, flood protection structures etc.). • Final landform design, especially of areas adjacent to creek and drainage lines. • Undertake flood protection design for closure (appropriate specifications e.g., design life) once final landform design signed off. <p>Groundwater</p> <ul style="list-style-type: none"> • Mine waste scheduling to ensure inert waste placement for Orebody 25 Pits 1 and 3 and Orebody 23 backfill. • Orebody 25 West and Orebody 24 mine void closure design (informed by surface water and further pit lake water quality studies) to meet safety requirements for pit voids. • Better understanding of the Ethel Gorge stygofauna community. • Develop Trigger Action and Response Plan (TARP) for Orebody 23 and Orebody 25 to enable timely response to water quality risks as they arise before and during the backfill process. • Understand final exposures throughout the life of mine for Orebody 24 and develop mine waste closure strategy that addresses residual AMD risk.

Technical Area	Key Risks and Issues	Management Response	Tools (processes, plans & guidelines)	Improvement Activities
			closure plan. <ul style="list-style-type: none"> PAF coding included within Resource Model carried through to Mining Model. OSA Design Manual. 	
Final land use Amenity	Amenity	<ul style="list-style-type: none"> Pastoral post-closure land use to be confirmed through discussions with key stakeholders including adjacent pastoral stations, <i>Nyiyaparli People</i> and relevant Government agencies via the ongoing stakeholder engagement process. 	<ul style="list-style-type: none"> Rehabilitation activities to achieve post-closure landuse, relevant to specific domains (see below). 	<ul style="list-style-type: none"> Confirmation of final land use within five years of closure.
Land Management	Heritage	<ul style="list-style-type: none"> Identify post closure issues (including ongoing management) through discussion with key stakeholders including the relevant <i>Nyiyaparli People</i> through the stakeholder engagement process. 	<ul style="list-style-type: none"> Use of the Project Environmental and Heritage Requirements (PEAHR) process to manage impacts to cultural heritage. 	<ul style="list-style-type: none"> Confirmation of post-closure land management requirements
Safety Human Health	Air Quality	<ul style="list-style-type: none"> Final landform designs to take safety requirements into account (as per DMP Guidelines). 	<ul style="list-style-type: none"> Dust control measures will be implemented during decommissioning and bulk earthworks activities during closure Implement requirements of the <i>Mines Safety and Inspection Act 1994</i>. 	<ul style="list-style-type: none"> Risk assessments to be reviewed in relation to safety as part of this MCP update cycle.
Decommissioning	Decommissioning and Rehabilitation	<ul style="list-style-type: none"> Formulate Decommissioning Plans within three years of closure. 	<ul style="list-style-type: none"> Implement the approved version of this MCP and any related plans, i.e. Decommissioning Plans. 	<ul style="list-style-type: none"> Undertake Government and stakeholder consultation to confirm infrastructure decommissioning as part of the post mining land use consultation.

Checklist

Mine Closure Plan checklist		Y/N	Page No. or Section	Comments	Changes from previous version (Y/N)	Page No.	Summary
1	Has the Checklist been endorsed by a senior representative within the tenement holder/operating company? (See bottom of Checklist.)	N	n/a	This version is draft for the purposes of consultation. The final version including Regulator comments will be endorsed by a senior representative.			
Public Availability							
2	Are you aware that from 2015 all MCPs will be made publicly available?	Y	n/a				
3	Is there any information in this MCP that should not be made publicly available?	Y	The technical studies provided in Appendix C are considered commercially sensitive and it is the preference of BHP Billiton Iron Ore that they are not publically released.				
4	If Yes to Q3, has confidential information been submitted in a separate document / section?	n/a	n/a				
Cover Page, Table of Contents							
5	Does the cover page include; <ul style="list-style-type: none"> • Project Title. • Company Name. • Contact Details (including telephone numbers and email addresses). • Document ID and version number. • Date of submission (needs to match the date of this checklist). 		Document ID needs to be confirmed by DMP following review of draft version.				
Scope and Purpose							
6	State why the MCP being submitted (as part of a Mining Proposal or a reviewed MCP or to fulfil other legal requirements).	Y	Section 1.2 outlines what is currently covered under a MCP.				

Mine Closure Plan checklist		Y/N	Page No. or Section	Comments	Changes from previous version (Y/N)	Page No.	Summary
			Section 2.4 outlines what is proposed to be included in this revised MCP.				
Project Overview							
7	Does the project summary include; <ul style="list-style-type: none"> • Land ownership details (include any and management agency responsible for the land / reserve and the purpose for which the land/ reserve [including surrounding land] is being managed). • Location of the project. • Comprehensive site plan(s). • Background information on the history and status of the project. 	Y	Section 2.2				
Legal Obligations and Commitments							
8	Does the MCP include a consolidated summary or register of closure obligations and commitments?	Y	Table 1 and Appendix A Error! Reference source not found.				
Stakeholder Consultation							
9	Have all stakeholders involved in closure been identified?	Y	Table 5				
10	Does the MCP include a summary or register of historic stakeholder engagement with details on who has been consulted and the outcomes?	Y	Table 5				
11	Does the MCP include a	Y	Table 4				

Mine Closure Plan checklist		Y/N	Page No. or Section	Comments	Changes from previous version (Y/N)	Page No.	Summary
	stakeholder consultation strategy to be implemented in the future?						
Post-Mining Land Use(s) and Closure Objectives							
12	Does the MCP include agreed post-mining land use(s), closure objectives and conceptual landform design diagram?	Y	Section 5.3				
13	Does the MCP identify all potential (or pre-existing) environmental legacies, which may restrict the post mining land use (including contaminated sites)?	Y	Section 9.1.5				
14	Has any soil or groundwater contamination that occurred, or is suspected to have occurred, during the operation of the mine, been reported to DER as required under the <i>Contaminated Sites Act 2003</i> ?	Y	Section 9.1.5				
Development of Closure Criteria							
15	Does the MCP include an appropriate set of specific closure criteria and closure performance indicators?	Y	Section 6.3				
Collection and Analysis of Closure Data							
16	Does the MCP include baseline data (including pre-mining studies and environmental data)?	Y	Section 7				
17	Has materials characterisation been carried out consistent with applicable standards and guidelines (e.g. GARD Guide)?	Y	Section 7.2				
18	Does the MCP identify applicable closure learnings from benchmarking against other comparable mine sites?	Y	Section 8.1.1				
19	Does the MCP identify all key issues impacting mine closure objectives and outcomes (including potential contamination impacts)?	Y	Section 8				

Mine Closure Plan checklist		Y/N	Page No. or Section	Comments	Changes from previous version (Y/N)	Page No.	Summary
20	Does the MCP include information relevant to mine closure for each domain or feature?	Y	Section 9.2				
Identification of Management of Closure Issues							
21	Does the MCP include a gap analysis/risk assessment to determine if further information is required in relation to closure of each domain or feature?	Y	Throughout various sections				
22	Does the MCP include the process, methodology, and has the rationale been provided to justify identification and management of the issues?	Y	Section 8.3				
Closure Implementation							
23	Does the reviewed MCP include a summary of the closure implementation strategies and activities for the proposed operations or for the whole site?	Y	Section 9.1				
24	Does the MCP include a closure work program for each domain or feature?	Y	Table 28				
25	Does the MCP contain site layout plans to clearly show each type of disturbance as defined in Schedule 1 of the MRF Regulations?	Y	Figure 4				
26	Does the MCP contain a schedule of research and trial activities?	Y	Appendix B				
27	Does the MCP contain a schedule of progressive rehabilitation activities?	Y	Section 9.3				
28	Does the MCP include details of how unexpected closure and care and maintenance will be handled?	Y	Section 9.3				
29	Does the MCP contain a schedule of decommissioning activities?	Y	Section 9.4				
30	Does the MCP contain a schedule of closure	Y	Section 10				

Mine Closure Plan checklist		Y/N	Page No. or Section	Comments	Changes from previous version (Y/N)	Page No.	Summary
	performance monitoring and maintenance activities?						
Closure Monitoring and Maintenance							
31	Does the MCP contain a framework, including methodology, quality control and remedial strategy for closure performance monitoring including post-closure monitoring and maintenance?	Y	Section 10				
Closure Financial Provisioning							
32	Does the MCP include costing methodology, assumptions and financial provision to resource closure implementation and monitoring?	Y	Section 11				
33	Does the MCP include a process for regular review of the financial provision?	Y	Section 11				
Management of Information and Data							
34	Does the mine closure plan contain a description of management strategies including systems and processes for the retention of mine records?	Y	Section 12				

Corporate Endorsement:

"I hereby certify that to the best of my knowledge, the information within this Mine Closure Plan and checklist is true and correct and addresses all the requirements of the Guidelines for the Preparation of a Mine Closure Plan approved by the Director General of Mines and Petroleum."

Name: Chris Dark Signed:  _____
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Position: General Manager Eastern Ridge Date: 07/01/16

NB: The corporate endorsement section must be given by tenement holder(s) or a senior representative authorised by the tenement holder(s), such as a Registered Manager or Company Director.

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Appendices

- Appendix A: Current legally-binding closure obligations applicable to the Eastern Ridge mining operations
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- Appendix C: Relevant supporting technical studies applicable to this Mine Closure Plan
- Appendix D: BHP Billiton Iron Ore closure and rehabilitation research and trials
- Appendix E: Eastern Ridge mining operations Closure Risk Assessment (summary version and full extended version)
- Appendix F: WAIO AMD Management Standard (BHP Billiton Iron Ore, 2013)
- Appendix G: The Eastern Ridge mining operations seed mix

Abbreviations

Abbreviation	Meaning
AAR	Annual Aquifer Review
AER	Annual Environmental Report
AHD	Australian height datum
ARI	Average Recurrence Interval
AS/NZS ISO	Australian and New Zealand International Standards Organisation
AWT	above water table
ANC	acid neutralising capacity
AMD	Acid Metalliferous Drainage
ANZMEC	Australian and New Zealand Minerals and Energy Council
BHP Billiton Iron Ore	BHP Billiton Iron Ore Pty Ltd
BIF	banded iron formation
BOCO	base of complete oxidation
BOM	Bureau of Meteorology
CAP	Corporation Alignment Planning
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEC	Department of Environment and Conservation (now the Department of Environment Regulation and the Department of Parks and Wildlife)
DER	Department of Environment Regulation
DMP	Department of Mines and Petroleum
DPaW	Department of Parks and Wildlife
DoE	Department of Environment
DoIR	Department of Industry and Resources (now the Department of Mines and Petroleum)
DoW	Department of Water
DTIR	Department of Tourism, Industry and Resources
e.g.	for example
EPWRMP	Eastern Pilbara Water Resource Management Plan
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>
EMS	environmental management system
EPA	Environmental Protection Authority
ES	Executive Summary
FY	Financial Year
GARD	Global Acid Rock Drainage
GLD	Group Level Document
GWOS	Groundwater Operating Strategy
ha	hectare
IBRA	Interim Biogeographic Regionalisation for Australia
ICMM	International Council on Mining and Minerals
i.e.	that is
INAP	International Network for Acid Prevention
km	kilometre
km ²	kilometre squared
LVIA	Landscape and Visual Impact Assessment

MCA	Minerals Council of Australia
MCP	Mine Closure Plan
ML	Mineral Lease
m	metre
m ²	metre squared
m ³ /s	cubic metre per second
mg/L	milligrams per litre
mm	millimetres
mRL	metres Reduced Level
NAF	Non-acid forming
NAPP	net acid production potential
n/a	Not applicable
NB	Note well
NGOs	Non-government agencies
No.	Number
NTC	Native Title Claim
OEPA	Office of the Environmental Protection Authority (OEPA)
OSAs	Overburden Storage Areas
PAF	Potentially Acid Forming
PEAHR	Project Environmental and Heritage Requirements
PEC	Priority Ecological Community
pH	numeric scale used to specify acidity or basicity
RSFSP	Regional Subterranean Fauna Sampling Program
ROM	run-of-mine
RULSE	Revised Universal Soil Loss Equation
SRE	short-range endemic
T	Tonnes
TARP	Trigger Action and Response Plan
TDS	total dissolved solids
TEC	Threatened Ecological Community
TSF	tailings storage facility
WEPP	Water Erosion Prediction Project
WA	Western Australia
WAIO	Western Australia Iron Ore
WC Act	<i>Wildlife Conservation Act 1950</i>

1 Scope and purpose

The Eastern Ridge mining operations are located between three and 13 kilometres (km) north-east of the Newman Township in the Pilbara Region of Western Australia (WA) (Figure 1) and are entirely situated within Mineral Lease (ML) 244SA Section 16. BHP Billiton Iron Ore Pty Ltd (BHP Billiton Iron Ore) operates the Eastern Ridge mining operations on behalf of its Mount Newman Joint Venture partners.

The Eastern Ridge mining operations, collectively, are comprised of four Orebodies namely, Orebody 23, Orebody 24, Orebody 25 and Orebody 32. Orebody 25 is further broken down into pits, which from an operational perspective, are collectively known as Pit 1 and Pit 3. Crushing and screening plants are located at Orebodies 24 and 25 as well as train loading facilities and other associated mining infrastructure. A rail spur currently services the site.

The four orebodies that comprise the Eastern Ridge mining operation are at differing stages of their mine life. For example, the initial proposal to mine detrital (or scree) ore at Orebody 25 at a rate of up to 1 Mtpa was first approved by the Environmental Protection Authority (EPA) in 1988. This was later followed by approval to mine Orebodies 23 and 25 in 1993, additional pits at Orebody 25 in 1995, Orebody 24 in 2010 and Orebody 32 this year in 2015.

Orebody 23 has now reached the end of its economic life and plans are underway to prepare it for closure in coming years, while Orebody 32 has recently been approved to commence in 2015. In addition, BHP Billiton Iron Ore is currently seeking approval to develop what will be known as Orebody 25 West, which will provide a replacement resource as other orebodies near the end of their economic life. In addition, various changes will also be sought to Orebodies 24 and 25 in order to sustain tonnes and meet BHP Billiton Iron Ore operational requirements into the future.

The existing infrastructure at Orebodies 24 and 25 will remain a key BHP Billiton Iron Ore asset within the localised region for a number of decades. This infrastructure will sustain nearby ore production and provide options for minimising cumulative disturbance footprint and closure liability through overburden placement into mined out pit voids. Directional timing for demolition and closure is estimated between 2045 and 2055 (based on FY2017 BHP Billiton Iron Ore Life of Asset Planning).

1.1 Purpose of plan

This Mine Closure Plan (MCP) is being submitted to the EPA and the Department of Mines and Petroleum (DMP) for the purposes of addressing the following Ministerial Statements relevant to BHP Billiton Iron Ore's Eastern Ridge mining operations:

- Orebody 23 mining operations approved under Ministerial Statement of Approval No. 478;
- Orebody 25 mining operations approved under Ministerial Statement of Approval No. 712;
- Orebody 24 mining operations are approved under Ministerial Statement of Approval No. 834;
- Orebody 32 mining operations approved under Ministerial Statement of Approval No. 1018; and
- a proposed new mining operation at Orebody 25 West as well as various changes to current operations at Orebodies 24, 25 and 32 to be formally referred to the EPA in December 2015.

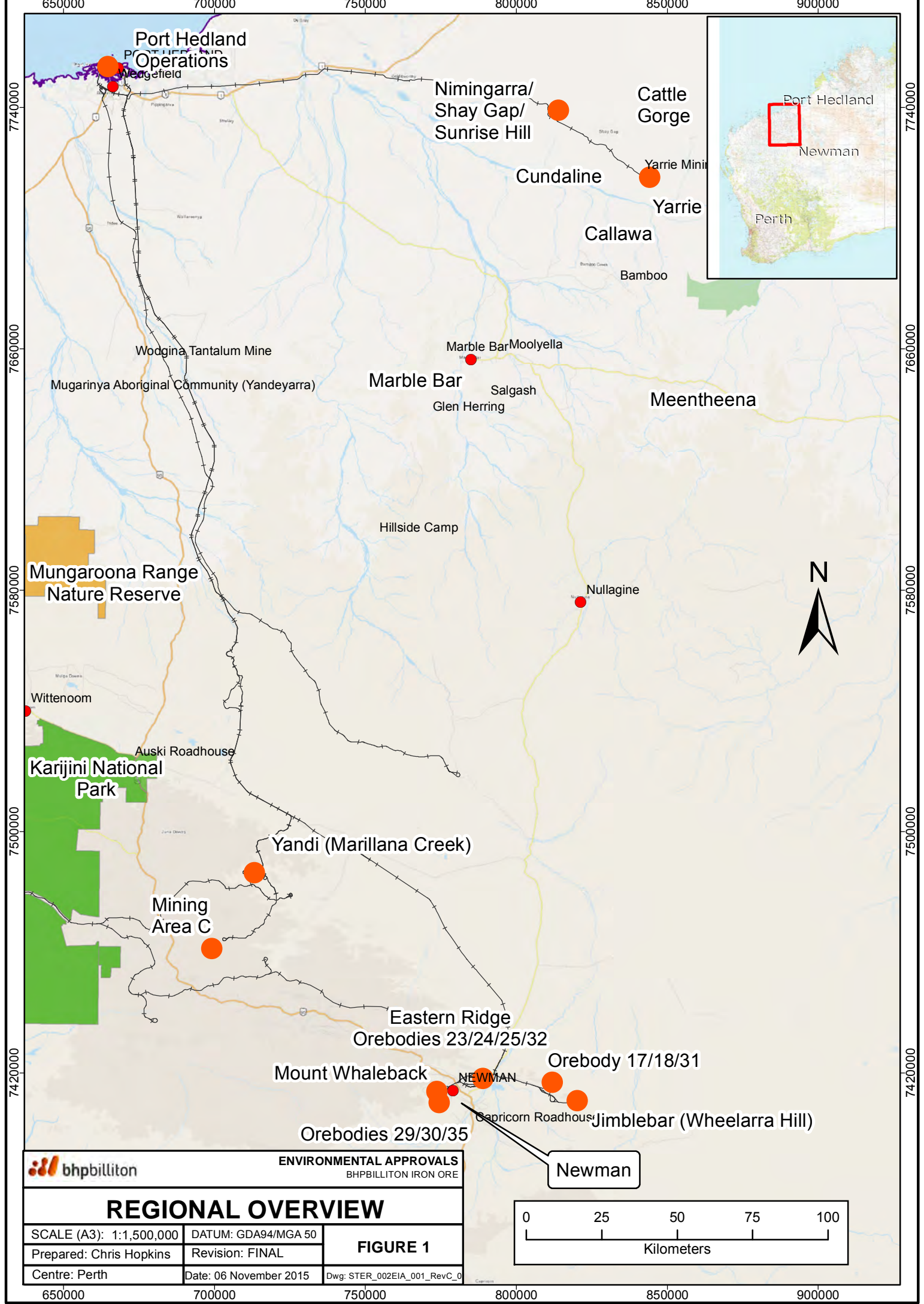
Figure 1 illustrates the regional location of the Eastern Ridge mining operations and Figure 2 illustrates the current operations and the boundary applicable to this MCP. The detailed and complete list of all individual conditions, which this MCP will address are provided at Appendix A.

A Revised Proposal for the Eastern Ridge mining operations will be formally referred to the EPA in December 2015. Further details on the overview of operations, which will form part of that Proposal are provided in the *Eastern Ridge Revised Proposal Environmental Referral Supporting Document (ERD)* (BHP Billiton Iron Ore, 2015a).

This MCP addresses how the Eastern Ridge mining operations will be rehabilitated and closed in a manner that satisfies the current legal obligations in accordance with the *Guidelines for Preparing Mine Closure Plans 2015* (DMP/EPA Guidelines) (DMP and EPA, 2015) and BHP Billiton corporate requirements.

This MCP will be used by BHP Billiton Iron Ore and its contractors in the implementation of appropriate rehabilitation and mine closure strategies at the Eastern Ridge mining operations inclusive of proposed modifications. Where there is any conflict between the provisions of this Mine Closure Plan and other statutory requirements (i.e. licences, permits, consent conditions and relevant laws, the statutory requirements are to take precedence.

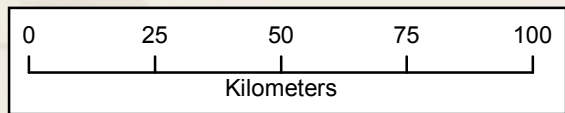
This MCP will be revised at intervals of five years. This revision timeline is consistent with the *Guidelines for Preparing Mine Closure Plans 2015*, and with Western Australian Iron Ore's (WAIO) strategic approach to closure planning across its Pilbara assets.



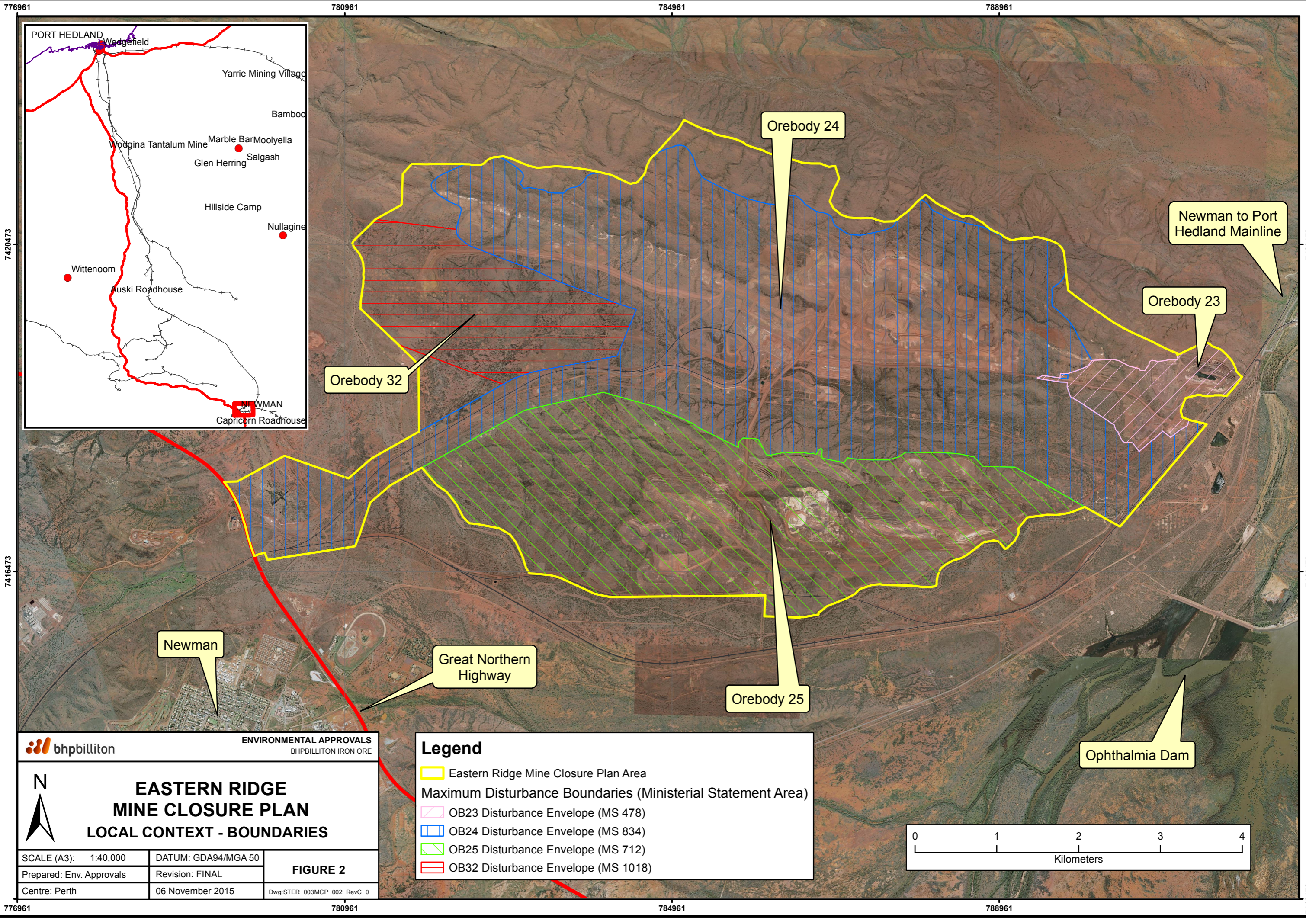
ENVIRONMENTAL APPROVALS
BHPBILLITON IRON ORE

REGIONAL OVERVIEW

SCALE (A3): 1:1,500,000	DATUM: GDA94/MGA 50	FIGURE 1
Prepared: Chris Hopkins	Revision: FINAL	
Centre: Perth	Date: 06 November 2015	



Dwg: STER_002EIA_001_RevC_0



Orebody 32

Orebody 24

Orebody 23

Newman to Port Hedland Mainline

Newman

Great Northern Highway

Orebody 25

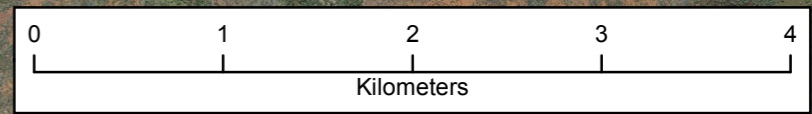
Ophthalmia Dam

bhpbilliton ENVIRONMENTAL APPROVALS
BHPBILLITON IRON ORE

**EASTERN RIDGE
MINE CLOSURE PLAN
LOCAL CONTEXT - BOUNDARIES**

Legend

- Eastern Ridge Mine Closure Plan Area
- Maximum Disturbance Boundaries (Ministerial Statement Area)
- OB23 Disturbance Envelope (MS 478)
- OB24 Disturbance Envelope (MS 834)
- OB25 Disturbance Envelope (MS 712)
- OB32 Disturbance Envelope (MS 1018)



SCALE (A3): 1:40,000	DATUM: GDA94/MGA 50	FIGURE 2
Prepared: Env. Approvals	Revision: FINAL	
Centre: Perth	06 November 2015	

Dwg: STER_003MCP_002_RevC_0

1.2 Document history

Table 1 outlines the history of the closure planning at Eastern Ridge and applicable management plans related to decommissioning and rehabilitation.

Table 1: Overview of closure planning history at the Eastern Ridge mining operations

Year	Mining operation	Approval	Closure Document	Superseded by:
1998	Orebody 23	Ministerial Statement of Approval No. 478	No specific mine closure document applies, although rehabilitation and decommissioning are discussed in the <i>Orebody 23 Environmental Management Plan</i> (BHP Billiton Iron Ore, 2008).	This MCP.
2005	Orebody 25	Ministerial Statement of Approval No. 712.	<i>Orebody 25 Project Decommissioning and Rehabilitation Plan Rev 1</i> (BHP Billiton Iron Ore, 2005a).	The 2010 version of the Orebody 24/25 Upgrade Project Decommissioning and Rehabilitation Plan, and ultimately, this MCP.
2010	Orebody 24/25 Upgrade Project	Ministerial Statement of Approval No. 834 was issued for the implementation of Orebody 24. This new statement did not supersede the requirements of Statement 712 and the two operations are currently managed under two statements. However, the Decommissioning and Rehabilitation Plan was revised to include Orebody 24 scope.	<i>Orebody 24/25 Upgrade Project Decommissioning and Rehabilitation Plan Rev 2</i> (BHP Billiton Iron Ore, 2010a).	This MCP.
2015	Orebody 32 Above Water Table Mining Project	Ministerial Statement of Approval No. 1018.	No specific MCP applies to this Proposal as yet, however, BHP Billiton Iron Ore has committed to addressing Decommissioning and Rehabilitation requirements through a new MCP to be submitted in 2015. This MCP addresses that requirement.	Not applicable
2016	Orebody 24 Orebody 25 Orebody 32 Orebody 25 West (new) Various changes to existing operations at Orebodies 24, 25 and 32.	A Revised Proposal will be formally referred for assessment under Section 38 of the EP Act in December 2015. It is proposed that a new Statement will supersede Ministerial Statements 712, 834 and 1018.	This MCP has been developed to address the anticipated contemporary Decommissioning and Rehabilitation ministerial condition for the Eastern Ridge Revised Proposal.	Not applicable

The first dedicated Decommissioning and Rehabilitation Plan applicable to an operation at the Eastern Ridge mining operations was developed and implemented in 2005 for the Orebody 25 Extension mining operation. In 2010, this plan was revised and updated to incorporate the then proposed Orebody 24 mining operations and became known as the *Orebody 24/25 Upgrade Project - Decommissioning and Rehabilitation Plan Rev 2* (BHP Billiton Iron Ore, 2010). This plan contained a five-year revision commitment.

In early 2015, BHP Billiton Iron Ore wrote to the Chief Executive Officer (CEO) of the Office of the EPA (OEPA) and sought an extension to the five year revision requirement for the current plan. The extension was sought on the basis that BHP Billiton Iron Ore proposed to integrate additional operations which the business was proposing to seek approval for in 2015. This included the Orebody 32 Above Water Table Mine Project (approved in October 2015) and Orebody 25 West (to be formally referred in December 2015). The correspondence also advised that BHP Billiton Iron Ore was also proposing to refer a Revised Proposal for the Eastern Ridge mining operations in late 2015 to amalgamate and supersede current ministerial statements as well as new operations into one new single Ministerial Statement of Approval including new contemporary decommissioning and rehabilitation conditions. This MCP has since been developed to support the Eastern Ridge mining operations, inclusive of any future modifications.

The table of detailed conditions at Appendix A also includes information to explain which section of this MCP addresses each condition or commitment.

1.3 Other relevant Eastern Ridge mining operations management plans

Current mining operations at Eastern Ridge are conducted in accordance with the *Iron Ore (Mount Newman) Agreement Act 1964* and the legal obligations listed in Table 1. A number of current conditions applicable to Eastern Ridge mining operations also require the implementation of environmental management plans.

The following environmental management plans apply to current operations at Eastern Ridge:

- *Orebody 23 Environmental Management Plan* (BHP Billiton Iron Ore, 2008), which was required under Ministerial Statement of Approval No. 478 - Proponent Commitment No. 7 – this plan required a range of factors to be addressed including ‘rehabilitation’ and ‘decommissioning’;
- *Orebody 25 Extension Project Environmental Management Plan* (BHP Billiton Iron Ore, 2005b), required by Ministerial Statement of Approval No. 712. This plan was superseded in 2010 by the below Proposal; and
- Ministerial Statement of Approval No. 834, which requires the implementation of the *Orebody 24/25 Upgrade Project Environmental Management Plan (BHP Billiton Iron Ore, 2010b)*. This plan is still current and is proposed to be superseded through the proposed Eastern Ridge Revised Proposal which will introduce new regional environmental management plans.

1.4 BHP Billiton Iron Ore Business Guidance

BHP Billiton is committed to environmental stewardship. The BHP Billiton Charter is the overarching document that articulates the corporate vision and values and what BHP Billiton stands for. The first value in the Company Charter is:

Sustainability: putting health and safety first, being environmentally responsible and supporting our communities.

This commitment provides the starting point from where the mine closure and rehabilitation policy and procedures begin. The remaining values are integrity, respect, performance, simplicity and accountability.

A series of Group Level Documents (GLDs) that underpin the Charter have been developed, which describe the performance requirements and accountabilities for definitive business obligations, processes, functions and activities. Compliance with the GLDs ensures reputations are managed and minimum standards are met for all BHP Billiton operations.

The GLDs are the foundation for developing and implementing management systems. The GLDs considered relevant to mine closure activities include:

- Environment GLD.009 - establishes the performance requirements for the management of land, biodiversity, water, air, greenhouse gases, hydrocarbons and wastes; the latter including waste rock and tailings (BHP Billiton 2014a);
- Risk Management GLD.017 - establishes the performance requirements for the assessment, control, monitoring and reporting of material risks that could impact the purpose and business plans. It includes risk rankings for both environmental and community aspects (BHP Billiton 2013);
- Major Capital Projects (Minerals) GLD.031 - defines the performance requirements for the initiation, development, execution, close out and transition to operations phases of minerals (including iron ore) major capital projects. It sets out the minimum study requirements for each of these phases including studies specifically related to closure and rehabilitation planning (BHP Billiton 2014b); and
- Corporation Alignment Planning GLD.034 - represents an annual cycle of key activities (known as the CAP cycle) designed to focus the organisation on achieving Our Purpose and Our Strategy by facilitating robust debate, informed decision-making and the disciplined delivery of quality planning outcomes. Mine closure planning is specifically addressed in the annual cycle ensuring closure liabilities, risks and requirements are appropriately managed (BHP Billiton 2014c); and

From the Charter and GLDs flow various Business Level Documents, standards and procedures that provide a framework for the application of the corporate vision and values with respect to mine closure planning and rehabilitation. These include for example:

- WAIO Closure and Rehabilitation Management Strategy Version 001 (BHP Billiton Iron Ore 2013a);
- WAIO Environmental Monitoring, Data Management and Reporting Procedures 0045364 Version 2.0 (BHP Billiton Iron Ore 2013b);
- WAIO Closure Provision Asset Planning 0005144 Version 4.0 (BHP Billiton Iron Ore, 2014d);
- WAIO Rehabilitation Standard 0001074 Version 1.0 (BHP Billiton 2011a);
- WAIO Closure Planning - Business Planning Procedure 0005144 Version 001 (BHP Billiton 2012);
- WAIO Acid and Metalliferous Drainage Management Standard, 0096370 (BHP Billiton Iron Ore, 2014e);
- WAIO Land and Biodiversity Management, 0044650, Version 2.0 (BHP Billiton Iron Ore, 2013d);
- WAIO Water Management, IO.BLD.P01 (2015b); and
- WAIO Health, Safety and Environment, IO.BLD.009 (2014f).

2 Project Summary

2.1 Eastern Ridge mining operations overview

Activities at the Eastern Ridge mining operations, which are currently subject to a decommissioning, closure and/or rehabilitation management plan are:

- exploration, mining and associated activities;
- mining above the water table at Orebody 24 and Orebody 32 and mining below the water table at Orebody 23 and Orebody 25;
- dewatering of the below water table deposits and the disposal of surplus water volumes discharged to Ophthalmia Dam and associated infiltration and recharge ponds;
- overburden backfilled in-pit or construction of ex-pit overburden storage areas;
- ore processed and transported using existing ore handling plants, moveable crushers and existing rail infrastructure; and
- construction and maintenance of ancillary infrastructure, conveyors, roads, service corridors and other associated activities to support exploration, mining, progressive rehabilitation and closure activities.

2.2 Ownership

The Eastern Ridge mining operations are located on Mining Lease ML244SA, which is described further in Table 2.

Table 2: Tenements underlying the Eastern Ridge mining operations

Lease	Description	Grant date	Expiry date
ML 244SA	Mining Lease 244 SA	7 April 1967	6 April 2030

Mining Lease ML244SA (Figure 3) is operated by BHP Billiton Iron Ore on behalf of the Mount Newman Joint Venture. The Mount Newman Joint Venture partners are as follows:

- BHP Billiton Minerals Pty Ltd (ABN 93 008 694 782) - 85%;
- Mitsui – Itochu Iron Pty Ltd (ABN 84 008 702 761) - 10%; and
- Itochu Minerals & Energy of Australia Pty (ABN 44 009 256 259) - 5%.

BHP Billiton Iron Ore is authorised as the manager and agent of the proponents to submit this MCP. All references to BHP Billiton Iron Ore are references to it acting in that capacity.

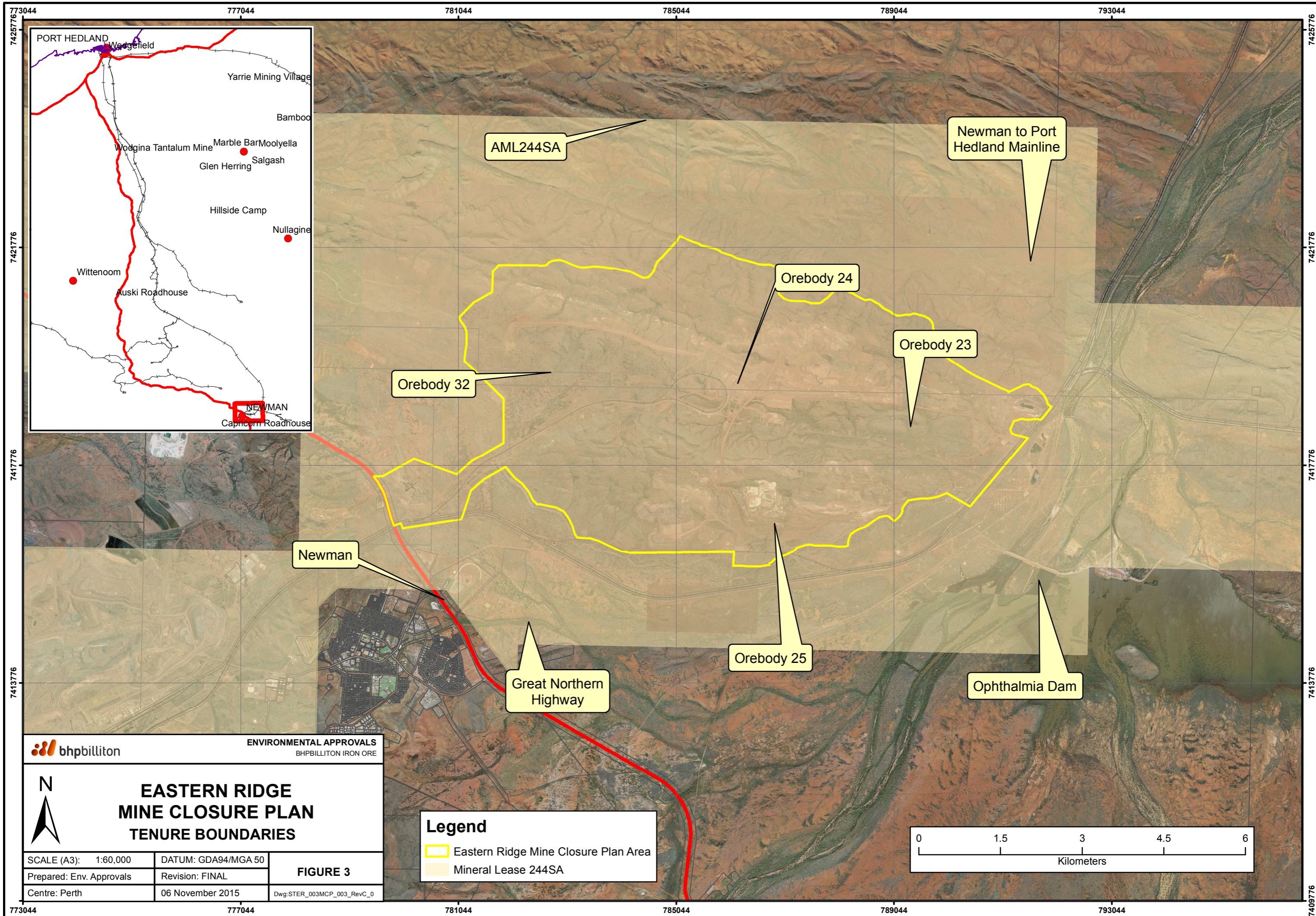
The key contact for this MCP is:

Position: Manager Environment Operations

Company: BHP Billiton Iron Ore Pty Ltd

Address: City Square, 125 St Georges Terrace, PERTH WA 6000

Phone: 6321 6000



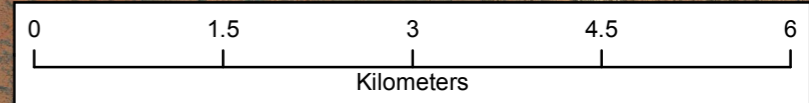
ENVIRONMENTAL APPROVALS
BHPBILLITON IRON ORE



**EASTERN RIDGE
MINE CLOSURE PLAN
TENURE BOUNDARIES**

Legend

- Eastern Ridge Mine Closure Plan Area
- Mineral Lease 244SA



SCALE (A3): 1:60,000	DATUM: GDA94/MGA 50	FIGURE 3
Prepared: Env. Approvals	Revision: FINAL	
Centre: Perth	06 November 2015	

Dwg: STER_003MCP_003_RevC_0

2.3 Closure features and domains

To facilitate effective mine closure planning, the Eastern Ridge mining operations have been divided into a number of physically distinct domains and features (Table 3 and Figure 4). The domains are comprised of features that have similar rehabilitation and closure requirements.

Table 3: Domains and features of the Eastern Ridge mining operations

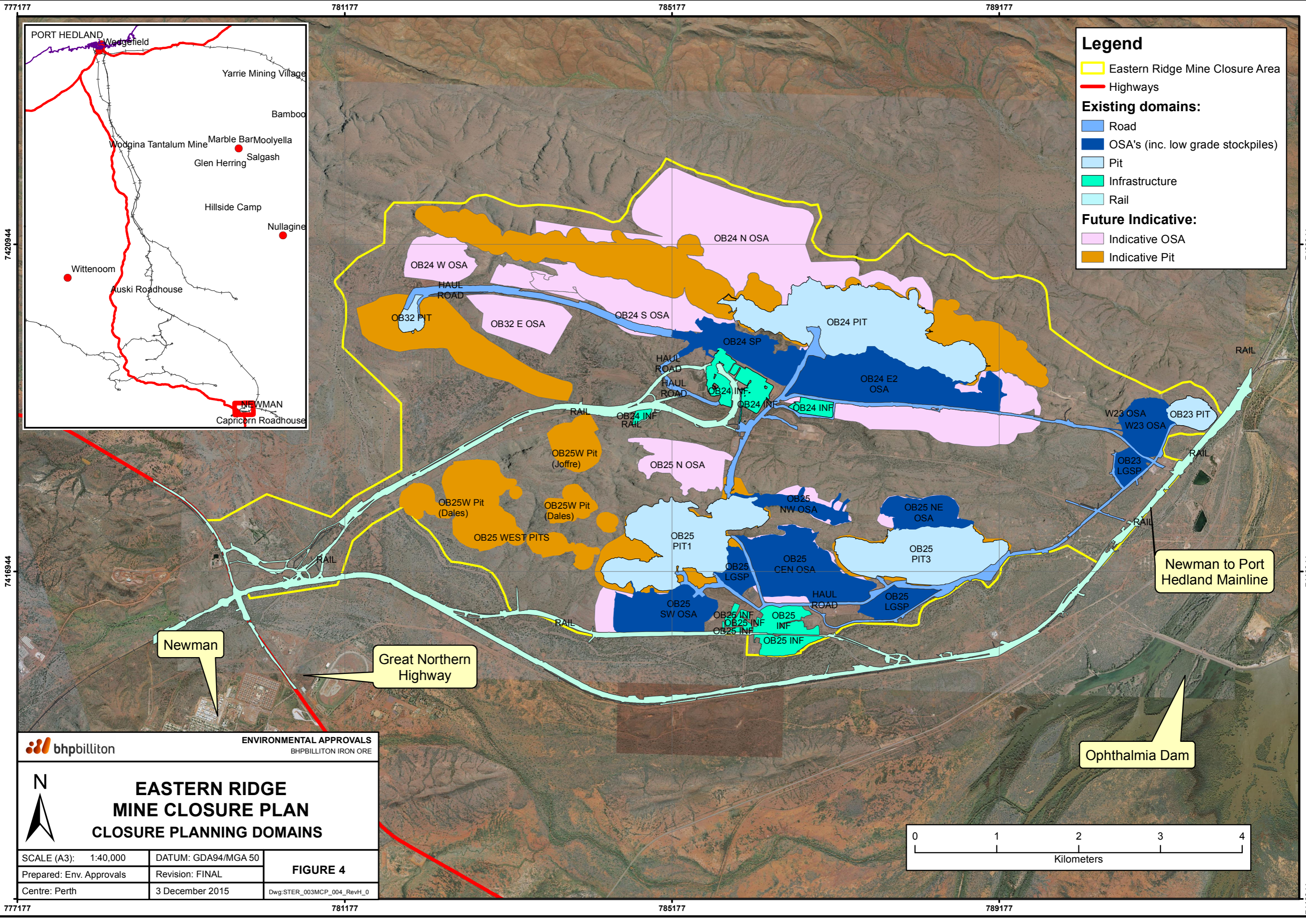
Domain	Feature
Overburden Storage Areas ¹	Orebody 24 north, Orebody 24 south, Orebody 25 north west, Orebody 25 south west, Orebody 25 central, Orebody 32 north east, Orebody 23 west, and various in-pit storage areas.
Infrastructure	Administration offices; fuel storage facilities; refuelling stations; washdown facilities; light and heavy vehicle workshops; warehouses; ammonia nitrate storage facilities; train load-out; ore crushing and processing facilities; WWTPs; inert landfill; rubber dump; contaminated soil stockpiling.
Mine Voids	Orebody 23, Orebody 24, Orebody 25 (Pit 1 and 3), Orebody 25 West and Orebody 32.
Roads and Rail	Main access road, haul roads, access tracks and railway

2.4 Proposed Eastern Ridge mining operations

The key components of the Eastern Ridge mining operation, which have not been included in a previous decommissioning, closure and/or rehabilitation document, but are included in this MCP, are listed below:

- current operations and upcoming closure of Orebody 23;
- campaign mining above the water table at Orebody 32;
- inclusion of new above and below water table mining operations at Orebody 25 West; and
- various changes to current operations at Orebody 24 and Orebody 25.

¹ Named only for the purposes of providing context in relation to this MCP.



Legend

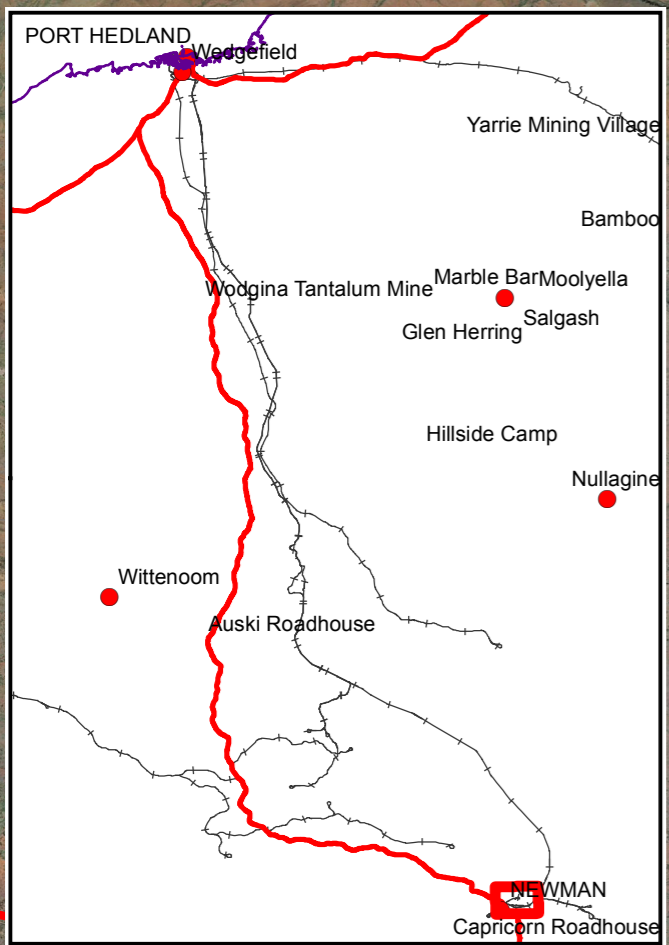
- Eastern Ridge Mine Closure Area
- Highways

Existing domains:

- Road
- OSA's (inc. low grade stockpiles)
- Pit
- Infrastructure
- Rail

Future Indicative:

- Indicative OSA
- Indicative Pit



Newman

Great Northern Highway

Newman to Port Hedland Mainline

Ophthalmia Dam

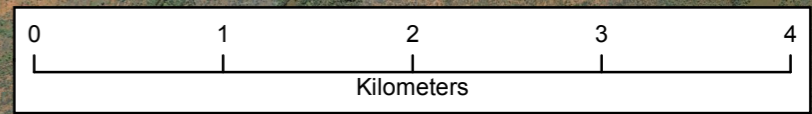
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EASTERN RIDGE MINE CLOSURE PLAN
CLOSURE PLANNING DOMAINS

SCALE (A3): 1:40,000 DATUM: GDA94/MGA 50 **FIGURE 4**

Prepared: Env. Approvals Revision: FINAL

Centre: Perth 3 December 2015 Dwg: STER_003MCP_004_RevH_0



3 Closure obligations and commitments

The management measures contained within this MCP have been developed with reference to State Government rehabilitation requirements, policies and guidance statements, which are summarised below.

3.1 Environmental Protection Act 1986

One environmental licence to operate currently applies to Orebody 24, Orebody 25 and the adjacent Orebody 23 under Part V of the EP Act, for the regulation of prescribed premises (prescribed premises listed under Schedule 1 of the Environmental Protection Regulations 1987)². The Orebody 23, Orebody 24 and Orebody 25 Environmental Operating Licence L6942/1997/13 recognises four categories under Schedule 1 of the Environment Protection Regulations 1987, for regulation (listed below):

- Category 5: Processing or beneficiation of metallic or non-metallic ore;
- Category 6: Mine Dewatering;
- Category 85: Sewage Facility; and
- Category 63: Class I Inert Landfill site;

3.1.1 Ministerial Statements

There are currently four separate Development Envelopes which are approved for existing operations at the Eastern Ridge mining operations (under Ministerial Statements 478, 712, 834 and 1018).

Legally binding closure commitments for the Eastern Ridge mining operations are provided in Appendix A, including a cross-reference to where they are addressed in this MCP.

3.2 Mining Act 1904

The Eastern Ridge mining operations are located within Mining Lease ML244SA issued under the *Mining Act 1904*, therefore the *Mining Act 1978* is not applicable.

3.3 State Agreement Act

Mineral Lease 244SA is held pursuant to *Iron Ore (Mount Newman) Agreement Act 1964* (WA) ("State Agreement Act").

While there are no specific closure clauses in the State Agreement Act, prior to the surrender of this Mineral Lease, BHP Billiton Iron Ore will be required to agree to a rehabilitation plan along with a determined agreement.

The *Guidelines for the Preparation of Mine Closure Plans 2015* (DMP and EPA, 2015) requires that mine closure be managed through Part IV of the EP Act on tenements subject to a State Agreement Act.

The State Agreement Acts essentially defers environmental compliance (including closure and rehabilitation) to the applicable environment legislation.

In regards to infrastructure, prior to removing the rail rolling stock, equipment and removable buildings, BHP Billiton Iron Ore is required to notify the State in writing, giving the option for the State to purchase the infrastructure subject to valuation.

² At the time of writing this MCP, no activities at Orebody 32 trigger licence requirements, therefore the Prescribed Premises boundary does not currently extend over Orebody 32.

3.4 Other closure commitments

The Eastern Ridge Mining Lease (ML244SA) falls within the boundary of the *Nyiyaparli [WC05/6] Native Title Claim (NTC)*. At the time of original development, BHP Billiton Iron Ore entered into Comprehensive Agreement with the *Nyiyaparli People*. This agreement was signed in June 2012.

This Agreement contractually obliges BHP Billiton Iron Ore to consult with the Nyiyaparli Traditional Owners in relation to the operation of the Eastern Ridge mining operations and, therefore, its eventual closure.

Practical examples of consultation would likely include: providing the earliest reasonable notice of potential mine closure to the *Nyiyaparli People*; quantifying the impact this may have on native title royalty payments; providing overviews of proposed environmental or cultural heritage remediation; and identification of appropriate Indigenous involvement or business contracting opportunities.

Given the proximity of the Eastern Ridge mining operations to the Newman Township, BHP Billiton Iron Ore will consult with representatives of the Shire of East Pilbara with regard to the eventual closure of the Eastern Ridge mining operation.

3.5 Closure guidelines and industry standards

BHP Billiton Iron Ore governs closure planning, on a corporate level, by GLD.034 Corporation Alignment Planning (BHP Billiton Iron Ore, 2014c). The purpose of this document is to ensure closure planning is included in the Business Planning Processes throughout the life-cycle of a project.

This MCP has been prepared to satisfy the relevant components of BHP Billiton's Corporation Alignment Planning process, and finalised for external review in line with the DMP/EPA Guidelines. In addition, this MCP incorporates relevant aspects from other closure guidelines and industry standards. A list of relevant publications and a brief summary of their content is provided below.

- *Guidelines for the Preparation of Mine Closure Plans 2015* (DMP and EPA in May 2015).
- *Strategic Framework for Mine Closure* (Minerals Council of Australia (MCA), and the Australian and New Zealand Minerals and Energy Council (ANZMEC) in 2000).
- *Mine Closure and Completion* (Department of Industry, Tourism and Resources in October 2006).
- *Managing Acid and Metalliferous Drainage* (Department of Industry, Tourism and Resources in February 2007).
- *Mine Rehabilitation* (Department of Industry, Tourism and Resources in October 2006).

4 Stakeholder consultation

4.1 Objectives

BHP Billiton Iron Ore's WAIO Stakeholder Engagement Management Plan states that wherever the Company operates it will:

“engage regularly, openly and honestly with our host governments and people affected by our operations, and by taking their views and concerns into account in our decision making.”

BHP Billiton Iron Ore recognises the importance of engaging with relevant stakeholders. The ability to build relationships and work collaboratively and transparently with our host communities is critical to the Company's long-term success. BHP Billiton Iron Ore has established a comprehensive consultation program to support ongoing, effective dialogue with stakeholders potentially impacted by, or interested in, the implications of the Company's operations. This approach is consistent with BHP Billiton Iron Ore's Charter that states a commitment to supporting communities and the BHP Billiton Code of Business Conduct that articulates how this underpins how the Company does business:

“Our ability to build relationships and work collaboratively and transparently with our host communities is critical to our long-term success. Our aim is to be the company of choice, valued and respected by the communities in which we operate. We do this by engaging regularly, openly and honestly with people affected by our operations, and by taking their views and concerns into account in our decision-making.”

BHP Billiton Iron Ore is currently undertaking an ongoing consultation programme relating to its Eastern Pilbara mining operations with government agencies (both state and local), non-government organisations and land-users that have expressed interest in, or are directly impacted by a proposed Project. The objectives of the programme are to:

- provide information and the opportunity to comment to government agencies and other stakeholders who may potentially be interested in activities (including closure and rehabilitation) at the Eastern Ridge mining operations;
- identify the key issues and concerns of government agencies and other stakeholders in regards to the design and management of activities (including closure and rehabilitation) at the Eastern Ridge mining operations;
- discuss objectives for the development of the Eastern Ridge mining operations and its ultimate rehabilitation and closure;
- periodically provide updated information and results of the development and closure planning process to government agencies and other stakeholders as more information comes to hand; and
- allow for adjustments to the design and/or management of any proposed activities to accommodate concerns or issues raised by government agencies and other stakeholders, where relevant.

As part of the broad consultation program for Eastern Ridge mining operations, BHP Billiton Iron Ore consults with identified stakeholders on closure related issues during each project phase (pre-approval, operations, rehabilitation and post closure) to ensure that legal requirements, risks and internal and external stakeholder expectations for closure at Eastern Ridge mining operations are taken into account at an appropriate time and as far as practicable.

4.2 Consultation

The WAIO Stakeholder Engagement Management Plan provides the framework for the communication of results from the ongoing closure planning process.

In line with the *Guidelines for Preparing Mine Closure Plans* (DMP/EPA, 2015), BHP Billiton Iron Ore considers the key stakeholders to be post-mining owners or managers and relevant regulators. The current focus of the Eastern Ridge mining operations closure consultation is primarily with the key

stakeholders Department of Environment Regulation (DER), OEPA and DMP. Consultation undertaken to date is recorded in Table 5.

As some parts of the Eastern Ridge mining operations approach cessation of mining (nominally within five years of this time) closure specific consultation will increase with broader stakeholder groups such as those listed below.

State Government agencies:

- DER;
- DMP;
- OEPA;
- EPA;
- Department of Parks and Wildlife (DPaW);
- Department of Water (DoW);
- Department of State Development;
- Department of Planning;
- Main Roads Western Australia;
- Department of Indigenous Affairs;
- Department of Health;
- Heritage Council of WA; and
- Department of Regional Development and Lands: Office of Pilbara Cities.

Shires, Local Governments and politicians:

- Shire of East Pilbara;
- Pilbara Development Commission;
- Newman Chamber of Commerce and Industry;
- Local Member for the Pilbara;
- Minister for Environment; Water;
- Minister for Mines and Petroleum;
- Minister for Heritage; Local Government; and
- Minister for Regional Development.

Local and regional groups:

- Newman Community;
- Port Hedland Community
- Wildflower Society of WA;
- Tourism operators;
- Greening Australia; and
- Conservation Council of WA.

Land owners and managers

- Traditional landowners: *Nyiyaparli People*;
- Other mining companies, where relevant;

- Pastoral station manager;
- Project employees; and
- Project contractors.

The Eastern Ridge mining operations consultation program has been developed based on the continuity of operations in this area through the utilisation of infrastructure for processing. The focus is therefore on progressive rehabilitation and technical studies updates. An indicative stakeholder consultation programme for the Eastern Ridge mining operations in advance of the next closure plan update (five-yearly cycle) is shown in Table 4 and consultation undertaken to date in in Table 5.

Table 4 Stakeholder consultation program (five-year look ahead)

Stakeholders	Timing	Communications
Traditional owners <i>Nyiyaparli People</i>	Ongoing as part of regular stakeholder consultation (nominally annually, at a minimum with each MCP update).	Progressive rehabilitation and technical studies. Final land use considerations.
DER	Annual.	Update on the contaminated sites management (WAIO-wide).
OEPA, DMP and DoW	Ongoing as part of regular stakeholder consultation (nominally annually, at a minimum in with each MCP update).	MCP update briefing including: <ul style="list-style-type: none"> • progressive rehabilitation; and • technical studies update.

Stakeholder consultation as outlined in Table 4 will be continued over the life of mine and expanded as discussed above.

Table 5: Summary of Stakeholder consultation for the Eastern Ridge mining operations

Date	Description of Engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder Response
Department of Mines and Petroleum					
3 December 2014	This meeting focused on rehabilitation across all current and future BHP Billiton Iron Ore hubs.	DMP BHP Billiton Iron Ore	There was discussion of progress to date on achievements and challenges in the development of Ecological Completion Criteria and alignment on new target date for defining agreed draft criteria, possibly 2020.	BHP Billiton Iron Ore committed to reporting progress in the BHP Billiton Iron Ore Annual Environmental Review documents on an annual basis.	There were no objectives towards this approach.
5 January 2015	Written correspondence to the DMP	Letter signed by BHP Billiton Iron Ore General Manager of Eastern Ridge Mine Hub addressed to Director of Assessment and Compliance of the OEPA on 5 January 2015 (Refer to Appendix B).	The correspondence outlined BHP Billiton Iron Ore's intent to develop a new consolidated Mine Closure Plan for the Eastern Ridge Mine Hub (including Orebody 32) during 2015.	This approach was discussed further with the DMP during the meeting of 29 January 2015 (refer to next line item).	See next line item.
29 January 2015	Presentation meeting to provide the DMP with a general update on closure planning across the business, including Eastern Ridge. BHP Billiton Iron Ore noted that the current Decommissioning and Rehabilitation Plan applicable to Orebodies 24 and 25 is scheduled to be updated in 2015, however, a new consolidated Mine Closure Plan for the wider Eastern Ridge Mine Hub (including the Orebody 32 deposit) was the preferred way forwarding for managing closure.	BHP Billiton Iron Ore DMP	The DMP was supportive of BHP Billiton Iron Ore's approach towards creating a new consolidated Mine Closure Plan to supersede the current plan.	This MCP is BHP Billiton Iron Ore's resolution.	
22 May 2015	Email correspondence. The purpose of this consultation was to advise that BHP Billiton Ore intend to refer a Proposal to the EPA. An overview of the mine closure strategy was presented.	Email from BHP Billiton Iron Ore to DMP	No specific written comments were received by BHP Billiton Iron Ore from the DMP direct. However, the OEPA would have sought comment from the DMP as part of the assessment of the Orebody 32 Above Water Table Iron Ore Mine Project. These comments would have been taken into consideration as part of the Final EPA Report and Recommendations and eventual Ministerial Statement of Approval No. 1018 granted in October 2015. No further questions were received by BHP Billiton Iron Ore from the DMP via the OEPA.	n/a	n/a
27 August 2015	Meeting to provide a closure planning update at Eastern Ridge	BHP Billiton Iron Ore DMP	Noted upcoming submissions and request for 2 week turn around on Closure Plan review.	A recommendation was made for a deep dive presentation for the DMP assessing officer.	No position stated by DMP either way on the ability to meet this timeline.

Date	Description of Engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder Response
21 October 2015	Briefing Deep dive briefing on Eastern Ridge Closure Plan	BHP Billiton Iron Ore DMP	Advised formal response would be provided following receipt and review of the document. General comments provided to make sure to include details of final landform designs for those elements close to closure. DMP asked a question about topsoil stockpiles and amount of topsoil available (specifics to be provided in MCP). DMP advised of the interest in rebound groundwater levels more so than pre-mining groundwater levels.	BHP Billiton Iron Ore to ensure DMP comments addressed in this MCP.	
Office of the Environmental Protection Authority					
10 March 2015	Presentation of the preliminary Eastern Ridge mining operations proposed scope and the proposed preliminary key factors and environmental impact assessments.	OEPA BHP Billiton Iron Ore	The OEPA advised that regional scale management plans need to meet the guidelines for environmental management plans and that site specific information is within these plans for Eastern Ridge mining operations. The OEPA also advised that the proponent will need to ensure that the API-A template contains the supporting information for Ministerial Statement amalgamation as an appendix. The OEPA advised early consultation with government agencies about proposed changes to conditions through the revised Proposal process.	Noted.	
2 July 2015	Presentation of the Eastern Ridge Revised Proposal scope and the supporting impact assessments undertaken for relevant environmental factors. Preliminary results were discussed.	OEPA BHP Billiton Iron Ore	The OEPA advised that there are other recent examples of revised proposals where other proponents have undertaken a Ministerial Statement amalgamation and the proponent needs to provide similar information as is shown in these recent project examples.	Noted.	
5 November 2015	Detailed outcomes of the environmental impact assessments were discussed, in particular the discussions held with the DPaW were discussed, the approach to management plans and the key factors for the Proposal, including approach to <i>Eremophila magnifica</i> subsp. <i>velutina</i> and Pilbara Olive Python. The discussion also included proposed revised conditions that will be superseded, replaced or deemed no longer relevant for the Proposal. Management measures and the draft structure of the management plans were also discussed.	OEPA BHP Billiton Iron Ore	The officers of the OEPA provided advice that they are continuing to work on implementing the approach to outcome-based conditions and the new management plan guidelines in contemporary Ministerial Statements. The officers of the OEPA advised undertaking early consultation with Government agencies prior to referral, particularly in regards to the Pilbara Olive Python and <i>Eremophila magnifica</i> subsp. <i>velutina</i> , and the proposed changes to conditions.	Noted.	
Department of Water					

Date	Description of Engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder Response
7-9 July 2014.	BHP Billiton Iron Ore coordinated a site visit to visit a number of its Pilbara operations.	DoW BHP Billiton Iron Ore	BHP Billiton Iron Ore's proposed EPWRMP (BHP Billiton Iron Ore, 2015c) operation and management of Ophthalmia Dam and general discussions regarding future plans for potable water management across the region.	The DoW was supportive of BHP Billiton Iron Ore's approach towards water management.	
Phone call on 12 May 2014 followed up by formal submission to the DoW via email on 15 May 2015.	BHP Billiton Iron Ore provided various documents to the DoW in May 2015 in relation to the then proposed <i>Orebody 32 Above Water Table Iron Ore Mine Project Proposal</i> . This Mine Closure Plan addresses closure aspects of Orebody32. Documents provided included a technical environmental impact assessment study addressing hydrological aspects of the Orebody 32 Proposal as well as an updated version of the Newman Potable Water Protection Plan (BHP Billiton Iron Ore, 2015d) and a Surface Water Environmental Impact Assessment (RPS Aquaterra, 2015).	DoW BHP Billiton Iron Ore	No written comments were received by BHP Billiton Iron Ore by DoW, however, the Office of Environmental Protection Authority received direct comments from the DoW, which informed the final EPA Report and Recommendations and eventual Ministerial Statement of Approval No. 1018 granted in October 2015.	This approach was discussed further with the DMP during the meeting of 29 January 2015 (refer to next line item).	
16 November 2015	BHP Billiton Iron Ore presented the Eastern Ridge Revised Proposal scope and the approach to groundwater and surface water technical studies and the EPWRMP.	DoW BHP Billiton Iron Ore	The DoW asked for technical assessments to be made available in the consultation process. Queries in relation to regional drawdown, pit backfill strategies, salinisation of pit lakes, PAF risk and the risk of releasing of metals to catchment, categorisation of waste types, and the geological understanding of the area.	BHP Billiton Iron Ore committed to providing this technical information to the DoW through the formal consultation opportunity in relation to the Proposal (BHP Billiton Iron Ore, 2015a).	
Department of Parks and Wildlife					
15 July 2015	BHP Billiton Iron Ore discussed the results of the flora and vegetation environmental impact assessment, which were in progress as well as discussion on amalgamation of Ministerial Statements and superseding conditions.	DPaW BHP Billiton Iron Ore	DPaW had some comments about clearing of priority flora <i>Eremophila magnifica subsp. Velutina</i> . DPaW advised that a "mapping" summary would be highly beneficial.	Follow up discussions will be undertaken with the DPaW regarding the management approach to the <i>Eremophila magnifica subsp. velutina</i> species and population.	BHP Billiton Iron Ore has held further conversations with DPaW regarding the approach to management plans and conditions for the amalgamation (see below).
15 August 2015	Eastern Ridge mining operations were discussed as part of a broader discussion about water management and our knowledge of the existing	DPAW BHP Billiton Iron Ore.	No concerns.		

Date	Description of Engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder Response
	environment through extensive available hydrological data.				
17 September 2015	A site visit to the Eastern Ridge mining operations was undertaken to discuss the results of impact assessments, including flora and vegetation, fauna, troglofauna, preliminary results for stygofauna and hydrological processes.	DPaW BHP Billiton Iron Ore	No concerns.		

5 Post mining land use and closure objectives

In line with BHP Billiton's Charter, we demonstrate environmental responsibility by minimising environmental impacts and contributing to enduring benefits to biodiversity, ecosystems and other environmental resources (BHP Billiton, 2014).

5.1 Closure and Rehabilitation Standards

BHP Billiton Iron Ore employs its Closure Planning Standard (BHP Billiton Iron Ore, 2012a) and Rehabilitation Standard (BHP Billiton Iron Ore, 2011) across its Pilbara assets. The Closure Standard provides the overarching framework for the development of the mine closure strategy and supporting closure provision. The Rehabilitation Standard provides the overarching framework for successful restoration of areas impacted by BHP Billiton Iron Ore operations in the Pilbara.

The Standards provide a consistent approach for closure and rehabilitation across BHP Billiton Iron Ore's WAIO operations.

5.2 Objective and guiding principles

The BHP Billiton Iron Ore's closure and rehabilitation objective is to:

Develop a safe, stable, non-polluting and sustainable landscape that is consistent with key stakeholder³ agreed social and environmental values and aligned with creating optimal business value.

The strategic objective recognises the landscape sustainability focus for closure and rehabilitation within the broader consideration of the surrounding social and environmental values. The importance of key stakeholders' expectations and of optimising business value (i.e., cost, reputation, risk and liability) in decision making is also recognised."

To guide the development and implementation of mine closure and rehabilitation for the Pilbara operations, BHP Billiton Iron Ore has established a set of guiding closure principles which are applied to the Eastern Ridge mining operation.

The current Guiding Closure Principles for BHP Billiton Iron Ore Pilbara operations are as follows:

Final land use: Stakeholder consultation including government, NGOs and community undertaken in the development of post-mining end land use objectives and site specific completion criteria toward site relinquishment.

Land management: Is compatible with a 'whole-of-lease sustainable management approach, so that rehabilitated areas can be integrated into local land management practices, and management requirements (e.g. maintenance of access tracks, fire) are not greater than those of areas prior to mining, or where extra management actions may be required, a mechanism has been put in place for addressing these.

Safety: There will be no unsafe areas where members of the general public could inadvertently gain access. Unauthorised public access risk will be managed through the implementation of controls in accordance with regulatory requirements and consideration of industry guidance.

Landforms: Physically interface appropriately with adjacent features, considering natural hydrological linkages and ensuring surface landform stability. Visual impact assessment, mine waste characterisation (physical, geochemical) hydrology and hydrogeological predictive modelling and surface landform stability assessment will inform final landform design

³ Key stakeholders refers to post-mining land owners or managers and relevant regulators (DMP and EPA, 2015)

(including overburden storage areas, TSF, pit void walls and pit lakes) to achieve the closure objective.

Mine Planning: Closure and rehabilitation requirements are integrated into mine plans (directional and delivery horizons) to achieve optimum business value and the guiding principles.

Ecosystem Sustainability: Areas demonstrated to be sustainable, resilient, and capable of meeting objectives relating to agreed final land use in terms of flora, vegetation, fauna, and surface and groundwater hydrology.

Water: Manage the range of potential hydrological changes (groundwater, surface water and/or soil moisture) resulting from operations impacting on receiving receptors to an acceptable level post closure.

Decommissioning: Infrastructure decommissioning and removal is undertaken (where transfer to another party is not agreed). This includes below ground structures and services as applicable to manage post-mining impact.

Contaminated sites: Prevent and manage contaminated sites in accordance with regulatory requirements

Human Resource: Develop and execute a strategy for BHP Billiton Iron Ore employees affected by closure. Strategy to include; retention, transition and redundancy programs.

Community Assets: Through consultation with the community, develop and execute a strategy to manage the transition of community assets and programs (owned and managed by BHP Billiton Iron Ore) which are affected by closure.

The Objective and Guiding Closure Principles provide the foundation for developing site specific Completion Criteria for the Eastern Ridge mining operations as outlined in Section 6.

5.3 Final land use

As stated in the guiding closure principles, the post mining land use will be determined through stakeholder consultation. The most likely final land use for the area is either water reserve (mining operations are located within Water Reserve 6), low intensity cattle grazing (the current land use for areas not directly affected by mining activities), or inclusion in some form of natural conservation area.

In advance of the final post mining land use being agreed for the Eastern Ridge mining operation, BHP Billiton Iron Ore will assume a native pastoral ecosystem, capable of supporting low intensity grazing as the *provisional* post-mining land use. The provisional land use provides an interim target to which closure and rehabilitation planning can work towards. Notwithstanding, the most likely final land use for the lease area is shown in Table 6 and was illustrated in Figure 4.

Table 6: Provisional Final Land Use by Site Domain

Domain	Post closure land use
Overburden Storage Areas	Areas will support native grasslands
Infrastructure	Areas could support low intensity grazing
Mine Voids	Areas may not support a specific post-closure land-use due to ingress/egress restrictions. Further assessment required as design of mine voids management measures (including in-pit OSAs) progresses.
Roads and Rail	Areas could support low intensity grazing

Final land use will be further refined as closure planning progresses

6 Completion criteria

Completion criteria are the measures against which implementation of closure objective and guiding principles can be assessed. As closure objectives and guiding principles cover a broad spectrum of outcomes, so must the completion criteria for example; final land use, safety, landform, sustainability, hydrology, decommissioning, contaminated sites and land management.

BHP Billiton Iron Ore will continue to work with regulators and stakeholders to refine the completion criteria for the Eastern Ridge mining operations in order to produce robust measures for closure completion.

6.1 Basis for development

Working completion criteria for the Eastern Ridge mining operations have been developed with reference to the following sources of information:

- Relevant guidelines and codes of practice issued by the Australian and Western Australian (WA) Governments, which currently includes:
 - *Guidelines for Preparing Mine Closure Plans* 2015 (DMP and EPA, 2015);
 - *Rehabilitation of Terrestrial Ecosystems* (EPA 2006); and
 - Department of Resources, Energy and Tourism's Leading Practice Sustainable Development Program for the Mining Industry Handbooks on Mine Closure, Mine Rehabilitation, Biodiversity Management, and Performance Assessment – Monitoring and Auditing.
- Key guidelines on mine site closure and rehabilitation issued by industry and international councils that are relevant to the Eastern Ridge mining operations, including:
 - the Strategic Framework for Mine Closure (Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia (MCA) 2000);
 - the Planning for Integrated Mine Closure Toolkit (International Council on Mining and Minerals (ICMM) 2008);
 - International Council on Mining and Minerals (ICMM) - Good Practice Guidance for Mining and Biodiversity (2006); and
 - Minerals Council of Australia (MCA) - Enduring Value, the Australian Minerals Industry Framework for Sustainable Development (2005).

Development of the completion criteria for the Eastern Ridge mining operations will integrate a number of key components related to the establishment, monitoring and management of rehabilitation including:

- rehabilitation objectives, including ecological completion criteria, must be achievable and based on the findings of relevant monitoring and research programs;
- rehabilitation performance will be measurable using accepted monitoring and performance indicators;
- rehabilitation must be sustainable under the designated post-mining land use;
- progressive rehabilitation initiated during early mine design stages, involving material chemical and physical characterisation to inform the design of overburden storage areas and plan dumping and rehabilitation operations;
- the principle of progressive signoff will be adopted where applicable, to facilitate the development of rehabilitation to acceptable standards. Criteria that change over time will not be applied retrospectively;
- specific features that do not reflect typical land uses for the area (such as mine void pit lakes) will be subject to independent environmental risk audits;

- long-term management operations following mining/closure/signoff (e.g. maintenance of access tracks, fire) to be no greater than those of areas prior to mining, or where extra management actions may be required, a mechanism has been put in place for addressing these; and
- ensuring operational criteria reflect key stages of the mining operation, including planning, operations, early establishment, development, and closure.

6.2 Approach

Assessment of rehabilitation against completion criteria will be applied throughout the various stages of rehabilitation planning, operations and management. Assessment of rehabilitation success during the early years of ecosystem development ensures that corrective actions can be carried out if necessary without disturbing older rehabilitation, and while mining operations are still nearby. However, it should be noted that for older rehabilitation, it may not be possible to assess some (perhaps many) of the operational and establishment criteria. For these areas, assessment of rehabilitation success will need to focus on the development stage.

Completion criteria standards and milestones will be formally reviewed every five years, where necessary they will be revised by mutual agreement between BHP Billiton Iron Ore, key stakeholders and regulatory authorities to adopt any significant advances in cost-effective rehabilitation techniques. More frequent review can take place over the next five to ten years where improvement opportunities are identified through research and development programs.

This process has been refined in consultation with regulators, and is applied on a site-by-site basis across BHP Billiton Iron Ore Pilbara operations to develop site-specific criteria. A timeline illustrating this approach is shown in Figure 5 below.

Criteria have been defined based on successive stages of closure:

- **Stage 1 Planning:** Describes criteria that must be met to confirm that the necessary planning and operating procedures have been developed and agreed with regulators and other stakeholders.
- **Stage 2 Rehabilitation Operations:** Describes criteria that must be met to confirm that rehabilitation operations have been implemented according to the above agreed planning and operating procedures. The assessment method for this will be by reviewing and auditing rehabilitation plans and records, and site inspections as required. Note that for older existing rehabilitation a simplified approach to setting agreed criteria may be developed.
- **Stage 3 Early Establishment Rehabilitation:** Assesses whether completed rehabilitation has established with no early problems (e.g. erosion, exposed dispersive material) apparent. The early establishment assessment provides confidence that vegetation is establishing and developing, and identifies where corrective work may be required. Assessment is initially by site inspection, followed by broad scale vegetation establishment monitoring. Note that for older existing rehabilitation, it may not be possible to determine whether some revegetation criteria have been met; nevertheless, rehabilitation records should help determine likely stability and performance.
- **Stage 4 Rehabilitation Development:** Determines whether the rehabilitation is developing appropriately towards the designated final land use and has reached or exceeded various development standards and milestones. Assessment is by site inspections, monitoring (both detailed monitoring of typical rehabilitation, and broad scale monitoring of other sites), and research projects where required.
- **Stage 5 Closure:** Addresses final closure stage management and land capability issues.

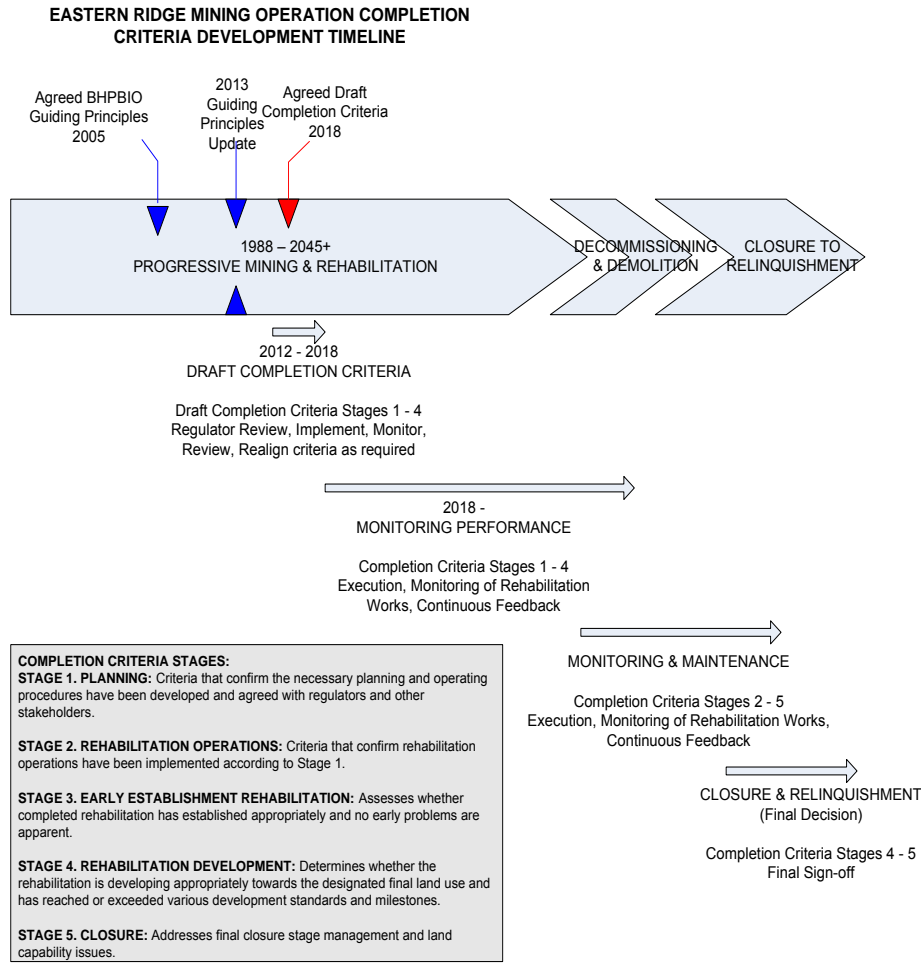


Figure 5: Eastern Ridge mining operations Completion Criteria Development Timeline

6.3 Development of criteria

Closure and rehabilitation objectives are based on the land uses applicable to the particular area, in recognition of the fact that the land is altered fundamentally from its pre-existing condition. The completion criteria for the Operations are designed to confirm that the objectives have been met. They provide both BHP Billiton Iron Ore and government with clear direction for the planning, establishment and management of mine rehabilitation at the site. They also provide a detailed understanding of the desired state of lands influenced by mining operations, at the time when any obligation for ongoing financial input or legal responsibilities by the mining companies effectively ceases, i.e. at signoff.

The purpose of the completion criteria is to ensure areas will display self-sustaining characteristics of surrounding areas and give Government regulators confidence that, to the maximum possible extent, they can be managed in the long term according to the intended land use (or uses), using normal management practices without the input of additional resources.

Completion criteria will continue to be developed by BHP Billiton Iron Ore over the life of mine, with a focus in the next five years being to integrate findings from ongoing research and development programs including landform trials, improved knowledge on the ecosystem development derived from rehabilitation monitoring programs and greening initiatives. Future revisions of the criteria will focus on developing measurable metrics based on site specific data.

The completion criteria for the Eastern Pilbara mining operations are presented in **Table 7**. For clarity, column headings are defined as follows:

- **Criterion Objective:** The purpose or objective of the particular criterion.
- **Criterion Standard or Milestone:** An agreed standard or level of performance which demonstrates successful closure of a site for that particular objective.
- **Verification Procedure:** How BHP Billiton Iron Ore will demonstrate that the criterion has been met. This will generally require either reporting in the Annual Environmental Report when a specific criterion is met, or production of a separate rehabilitation monitoring report addressing one or more criteria, e.g. development of vegetation.
- **Domain:** Areas of similar operational land uses and closure requirements. Additional information relating to closure implementation for each closure domain is provided in Section 9.2.

Table 7: Eastern Ridge mining operations Completion Criteria

Criterion	Criterion objective	Domain	Criterion standard or milestone	Verification procedure ⁴	Mine Closure Plan section
1. Final land use					
1.1 Final Land Use	Agreed final land use has been determined in consultation with relevant stakeholders.	All	<p>End land use for the area is considered likely to revert to pastoral activity, water reserve, or the inclusion in some form of natural conservation area.</p> <p>However, this would be determined in consultation with stakeholders, and approved by the administering authority during the life of the mine.</p> <p>Specific rehabilitation objectives have been developed to ensure that, when met, areas will fulfil the post-mining land use requirements.</p>	Land use objectives are documented in this MCP as reviewed and agreed by the key stakeholders.	5.3 Final land use
2. Safety					
2.1 Safety	There are no unsafe areas where members of the general public could gain inadvertent access.	All	<p>All hazards that could endanger the safety of any person or animal have been identified and eliminated where practical.</p> <p>All residual safety and health hazards have been identified and controlled in accordance with regulatory requirements and consideration of industry guidance.</p>	<p>All relevant regulatory guidelines have been met unless otherwise agreed with the regulator.</p> <p>All sites are assessed as acceptable with regards to safety by the District Mines Inspector.</p>	8.2 Risk Management 10.1.9 Public safety monitoring
2.2 Landform Safety	Final landforms are safe.	All	<p>Landforms are designed and constructed to address safety risks as described in criterion 2.1. They conform to DMP guidelines for structural stability, with no significant slumping or failure of accessible constructed slopes or berms.</p> <p>No unacceptable hazards to humans or wildlife have developed through erosion, subsidence, AMD or otherwise.</p>	<p>Report on landform construction methods, and any additional maintenance works undertaken.</p> <p>Rehabilitation inspections (including undertaken on maintenance earthworks) confirm earthworks have met final landform designs.</p> <p>Rehabilitation monitoring results (including erosion monitoring).</p> <p>Report on performance in relation to design criteria and DMP Guidelines.</p> <p>Inspections of the rehabilitated landforms have been conducted to monitor their stability over time, with monitoring conducted after each significant rainfall season.</p>	8.4 Landforms
3. Landforms					
3.1 Visual Amenity	Visual amenity of constructed landforms is compatible with that of local Pilbara landforms.	All except mine voids	Within the constraints imposed by aspects such as the physical nature of the materials available, tenement boundaries, and proximity to water courses, landforms have been constructed to blend into the surrounding landscape. Landforms are consistent with the agreed final land use (criterion 1.1).	<p>Report on rehabilitation works confirms landform construction undertaken according to BHP Billiton Iron Ore relevant procedure.</p> <p>Rehabilitation inspections confirm earthworks have met final landform designs.</p>	8.4 Landforms 9.1 Standard closure and rehabilitation strategies
3.2 Waste Characterisation	Materials with poor physical or chemical properties do not compromise rehabilitation (landforms stability and revegetation)	Anywhere problem materials present	<p>An overburden storage plan for any new OSA is developed and incorporated into the life of mine plan prior to the commencement of ex-pit dumping activities.</p> <p>All overburden placement in new OSAs has been undertaken in accordance with this plan. Mine waste material likely to provide a poor growth medium (e.g. dispersive and incompetent material), has been placed appropriately in the OSA.</p>	<p>Waste characterisation report available for review.</p> <p>Report on landform construction methods.</p> <p>Rehabilitation inspections confirm earthworks have met final landform designs.</p>	8.4 Landforms 9.1 Standard closure and rehabilitation strategies

⁴ Verification procedures may be updated as part of the continuous improvement process.

Criterion	Criterion objective	Domain	Criterion standard or milestone	Verification procedure ⁴	Mine Closure Plan section
3.3 Landform Stability	Constructed landforms are structurally stable.	All	<p>Post-mining landforms have been designed and constructed taking into account waste characteristics affecting stability (physical and chemical). The design and construction methods conform to DMP guidelines for structural stability.</p> <p>Detailed landform design standards include:</p> <ul style="list-style-type: none"> • Voids have been backfilled where practicable; and • Residual pit voids have been left as run-of-mine (ROM) where geotechnically stable. 	<p>Report on rehabilitation works at construction confirms safety and geotechnical Guidelines have been met and sites constructed according to BHP Billiton Iron Ore relevant procedure.</p> <p>Rehabilitation inspections confirm earthworks have met final landform designs.</p>	<p>8.4 Landforms</p> <p>9.1 Standard closure and rehabilitation strategies</p>
3.4 Surface Stability	The constructed surface is stable and showing no signs of significant erosion.	All	<p>Post-mining landforms have been designed and constructed taking into account waste characteristics (physical and chemical).</p> <p>Slope surfaces are stable, with no dispersive material on the surface; rock armouring is present as required; and no areas are exposed to the risk of significant erosion which may be defined as having:</p> <ul style="list-style-type: none"> • channelised flow resulting in extensive active gullies; • failure of banks, berms or bunds; and • evidence of ongoing significant sheet erosion (including large accumulation of silt at base of slope, exposed subsoil, poor seedling establishment). 	<p>Report on landform construction methods, and any additional maintenance works undertaken.</p> <p>Rehabilitation inspections (including undertaken on maintenance earthworks) confirm earthworks have met final landform designs.</p> <p>Visual assessment and monitoring, taking into account slope, available materials and vegetation cover, and relevant research projects on surface stability of comparable rehabilitated landforms.</p> <p>Rehabilitation monitoring results (including erosion monitoring) indicate gullies and rills are stabilising.</p>	<p>8.4 Landforms.</p> <p>9.1 Standard closure and rehabilitation strategies.</p>
3.5 Landform Surface	Landform surface material promotes water infiltration and reduces erosion and crusting.	All (exc. mine voids and PAF encapsulation OSAs)	Surface treatments (including ripping) undertaken to rehabilitated surfaces to maximise water infiltration, to reduce erosion potential, and support establishment of vegetation.	<p>Report on landform construction methods.</p> <p>Rehabilitation inspections confirm earthworks have met final landform designs.</p>	<p>8.4 Landforms</p> <p>9.1 Standard closure and rehabilitation strategies</p>
4. Sustainability					
4.1 Sustainability	Rehabilitation is sustainable and the land capability and groundwater are suitable for the agreed end land use	All where relevant	Monitoring, research data and site inspections indicate that the rehabilitation will be sustainable and will continue to fulfil rehabilitation objectives relating to the agreed final land use in terms of flora, vegetation, fauna, and surface and groundwater hydrology.	Documented in relevant monitoring and research reports; site inspections.	<p>8.4.5 Sustainability.</p> <p>10.1 Monitoring programme overview</p>
4.2 Resilience	Vegetation is sustainable and resilient to likely impacts such as fire, drought and grazing (where applicable, if managed according to agreed guidelines).	All where relevant	<p>Monitoring and/or research results have shown that recruitment of native perennial species is occurring or is likely to occur on the site (e.g. evidence of flowering, fruiting, soil seed bank or second generation seedlings).</p> <p>Research trials in rehabilitation representative of the same age and technique have demonstrated its ability to regenerate following burning (in terms of key parameters such as cover, richness and density); rehabilitation has reached the age where plants are likely to tolerate fire or regenerate/reseed.</p> <p>Monitoring has shown that the rehabilitation can survive one or more seasons of low rainfall.</p>	<p>Review of progress and performance of rehabilitation monitoring results, and related rehabilitation monitoring procedures.</p> <p>Monitoring results reported in the BHP Billiton Iron Ore Annual Environmental Report (AER).</p> <p>Research findings from trials on representative rehabilitated areas investigating post-disturbance recovery of revegetation.</p>	<p>8.4.5 Sustainability.</p> <p>10.1 Monitoring programme overview.</p>
4.3 Growth Media	A suitable growth medium has been identified to facilitate plant establishment and growth.	All where revegetation is planned.	<p>Material placed on the outer surface of landforms takes into consideration the growth media characteristics required to support sustainable vegetation development.</p> <p>The depth and characteristics of newly constructed landforms, surface soils and subsoils are suitable for plant growth in terms of their structure, water holding capacity, and lack of materials that might affect plant growth or survival (i.e. they are suitable for establishing target vegetation communities and supporting the agreed final land use).</p> <p>Soil stripping has been undertaken in accordance with the BHP Billiton Iron Ore Rehabilitation Standards and Procedures.</p> <p>Topsoil stockpiles have been managed following the BHP Billiton Iron Ore Rehabilitation Standard and Procedures, and the relevant plans and databases have been prepared, updated and maintained.</p> <p>Where available and appropriate to meet the landform design requirements, topsoil has been used to provide a suitable medium for plant establishment and a source of propagules.</p>	<p>Topsoil reconciliation information available.</p> <p>Review of baseline soil report (where available) and site waste characterisation report.</p> <p>Report on landform construction methods.</p> <p>Rehabilitation inspections confirm earthworks have met final landform designs.</p> <p>Rehabilitation monitoring results provide feedback to determine suitability of growth medium.</p>	<p>8.4.5 Sustainability.</p> <p>9.1 Standard closure and rehabilitation strategies.</p>

Criterion	Criterion objective	Domain	Criterion standard or milestone	Verification procedure ⁴	Mine Closure Plan section
4.4 Provenance	Vegetation is locally endemic.	All	Revegetation at Eastern Ridge has used local provenance native seed from the Pilbara IBRA Region consistent with vegetation associations and native species recorded in Eastern Ridge area baseline flora and vegetation. Flora species of conservation significance have been incorporated into the revegetation programme (where practicable) in the event that planned disturbance areas affect known local populations (i.e. where the disturbance cannot otherwise be avoided).	Site Rehabilitation Report including seed mix summary. Seed Database. Rehabilitation monitoring results.	8.4.5 Sustainability. 9.1.3 Revegetation.
4.5 Vegetation Development	Vegetation is suited to the agreed final land use.	All with revegetation.	Established vegetative cover should be self-sustaining and similar to the surrounding undisturbed vegetation. Monitoring of rehabilitated areas has been undertaken until it can be demonstrated that the landscape and vegetation is progressing towards a self-sustaining state. Rehabilitation Development stage density or cover target to be developed.	Monitoring of vegetation reestablishment using BHP Billiton Iron Ore Rehabilitation Monitoring Procedures. Monitoring results reported in the AER. Report on performance in relation to rehabilitation methods, using site inspection and rehabilitation monitoring sites to assess whether criteria have been met.	9.1.3 Revegetation. 10.1.1 Rehabilitation monitoring methodology.
4.6 Weeds	Potential for rehabilitation to meet the agreed post-mining use is not limited by the presence of weeds.	All with revegetation	All requirements of the BHP Billiton Iron Ore Weed Management Procedure have been implemented. No Declared Pests (as defined under the <i>Biosecurity and Agriculture Management Act 2007</i>) are present in greater abundance than baseline records indicate. Populations of environmental weeds have been monitored and controlled; weed abundance does not exceed that in areas representative of the agreed final land use. All Declared Pests and environmental weeds recorded in the rehabilitation have been effectively managed.	Review weed monitoring and control undertaken to ensure compliance with the BHP Billiton Iron Ore Weed Management Procedure. Report on weed monitoring and control records. Measurement of weed abundance compared to representative reference sites, using cover or counts (as appropriate according to the species). Monitoring and visual inspection of vegetation establishment and representative reference areas.	10.1.2 Weed monitoring
4.7 Fauna Recolonisation	Revegetated areas provide suitable fauna habitat.	All where opportunities exist	As per the BHP Billiton Iron Ore Rehabilitation Standard and Procedures include, where practical, the creation of habitat features similar to those found in the Eastern Ridge area prior to mining. Habitat creation initiatives include, but are not limited to the following: <ul style="list-style-type: none"> • Creation of rock piles in OSAs and/or mine void areas to provide potential habitat opportunities for reptiles and mammals; • Return of vegetation debris, logs and rocks to areas which have been disturbed to provide microhabitats for recolonising fauna. Vegetation includes locally endemic species of known importance to fauna. Signs of fauna recolonisation are apparent including (but not limited to) scats, presence of invertebrates. Vertebrate pests (rabbit, dingo, donkey, goat and cat) have been controlled where necessary.	Rehabilitation inspections confirm earthworks have met final landform designs. Fauna habitat assessment using site inspection and evaluation of vegetation monitoring results. Vertebrate pest species have been controlled as required.	9.1 Standard closure and rehabilitation strategies 9.1.3 Revegetation 10.1.1 Rehabilitation monitoring methodology 10.1.3 Fauna monitoring of rehabilitation areas
5. Hydrology					
5.1 Surface Hydrology	Rehabilitation drainage patterns have been established and impacts on natural surface water flows are acceptable at key receptors.	All where relevant	There are no significant, physical off-site impacts at key receptors as a result of BHP Billiton Iron Ore's operations. Baseline conditions for surface water quality and flow regimes in nearby waterways including the Homestead Creek have been maintained to an acceptable level. Surface water quality should fall within guidelines for specific-end land use (e.g. stock watering requirements).	Documents reviewed and signed off as required. Review compliance through the Regional monitoring programme against BHP Billiton Iron Ore's nominated trigger values as defined in the Eastern Pilbara Water Resource Management Plan (EPWRMP), (BHP Billiton Iron Ore, 2015c). Monitoring results reported in the AER and Annual Aquifer Review (AAR) (as required). Site inspection to verify no unplanned impacts on surrounding natural drainage patterns.	7.8.1 Surface water 8.4.3 Surface water
5.2 Groundwater Hydrology	Mining-related impacts on groundwater (levels, quality)	All where relevant.	There are no significant, physical off-site impacts at key receptors as a result of BHP	Review compliance through the regional monitoring programme against BHP Billiton Iron Ore's	7.8.2 Groundwater.

Criterion	Criterion objective	Domain	Criterion standard or milestone	Verification procedure ⁴	Mine Closure Plan section
	and soil moisture) have been minimised.		<p>Billiton Iron Ore's operations.</p> <p>Baseline conditions for groundwater regime (levels and quality) in Ethel Gorge / Ophthemia Dam have been maintained to an acceptable level. Water resource quality is managed within predetermined criteria based on ANZECC Guidelines (ANZECC, 2013).</p> <p>Acceptable levels defined as closure thresholds in the EPWRMP.</p>	<p>nominated trigger values as defined in the EPWRMP (BHP Billiton Iron Ore, 2015c).</p> <p>Monitoring results reported in the AER and AAR (as required).</p>	8.4.2 Groundwater.
6. Decommissioning					
6.1 Infrastructure	Infrastructure has been decommissioned and removed where transfer to a third party is not agreed	All where infrastructure exists	Agreement has been reached with Government regarding whether any infrastructure is required to remain post-mine closure. Infrastructure not required has been removed (and recycled/reused where practicable) and the site rehabilitated.	Site inspection and documentation of infrastructure removal and rehabilitation operations.	9.2.3 Infrastructure, road and rail
7. Contaminated sites					
7.1 Contaminated Sites	Contaminated sites have been documented and addressed	All where relevant	All commitments relating to the identification and management of contaminated sites, as per <i>Contaminated Sites Act</i> (2003) have been fulfilled.	Report documenting compliance with specific requirements.	9.1.5 Site contamination
8. Land management					
8.1 Land Management	Long-term management requirements have been addressed.	All	At the time mine closure is considered complete, site land management requirements will be no greater than those of areas prior to mining (or comparable unmined areas); alternatively, where additional management actions are required, these will be identified in agreement with regulators, and BHP Billiton Iron Ore will make adequate provisions so that this additional management can be undertaken.	Reports into sustainability and long-term management requirements identified in the monitoring and research carried out as per Criterion 4.	10.1 Monitoring programme overview