BHP

Jimblebar Hub Iron Ore Mining Operations

Proposal Content Document

January 2025
Version 2

Document amendment record

Version	Section/page	Version description	Key changes	Date
0	All	Draft provided for Traditional Owner review	N/A – initial version	08/09/2023
1	All	Final for EPA referral	Minor clarifications only	15/12/2023
2	Table 2	Reissue to EPA to address request for further information	Minor clarifications for groundwater abstraction only	14/01/2025

Introduction

BHP has prepared the Proposal Content Document for the Combined Proposal (Approved Proposals and Significant Amendment), consistent with the EPA's *Instructions: How to identify the content of a Proposal* (EPA October 2021).

As required by the Instructions, amendments to the existing General proposal description of the Approved Proposals are summarised below and the consolidated, updated General proposal description for the Combined Proposal is presented in Table 1. The proposal elements and amendments which have the potential to have a significant effect on the environment are quantified in Table 2.

There are three current Approved Proposals (existing projects) for the Jimblebar operations:

- Jimblebar Iron Ore Project (Revised Proposal): MS1126 (Jimblebar MS1126)
- Orebody 31 Iron Ore Project: MS1021 (Orebody 31 MS1021)
- Orebody 18 Iron Ore Mine: MS439 (as amended by MS1012) (Orebody 18 MS439).

Summary of proposal content amendments

Proposal title

- Amended to consolidate Approved Proposals for individual mines (Jimblebar, Orebody 31 and Orebody 18) into the Combined Proposal for the Jimblebar Hub

Proponent name

- Amended from BHP Billiton Iron Ore Pty Ltd to BHP Iron Ore Pty Ltd (for MS1126, MS1021 and MS1012).

Short description

Amended to:

- consolidate short descriptions of Approved Proposals for individual mines (Jimblebar, Orebody 31 and Orebody 18) into the Combined Proposal for the Jimblebar Hub.
- include specific activities and elements of the Approved Proposals, consistent with the Instructions
- add beneficiation plant and in-pit tailings storage facilities.

Combined Proposal contents

Table 1: General proposal content description

Proposal title	Jimblebar Hub Iron Ore Mining Operations
Proponent name	BHP Iron Ore Pty Ltd
Short description	The Combined Proposal is for mining operations at the Jimblebar Hub, located approximately 40 km east of the town of Newman (Figure 1). The proposal includes, but is not limited to the following activities and elements: • mine pit excavation above and below the water table • groundwater abstraction to dewater mine deposits and for water supply • dewatering, water supply and surplus water infrastructure, including bores and pipelines • surplus water management, including discharge to Ophthalmia Dam, controlled discharge to creeks and injection to aquifers • ore stockpiles and topsoil stockpiles and associated stacking, reclaiming and loading activities • mineral waste management, including overburden storage areas and in-pit tailings storage facilities • haul and access roads • borrow pits and laydown areas • surface water management infrastructure, including culverts and creek diversions • ore processing infrastructure, including crusher and beneficiation plant • ore transportation infrastructure, including overland conveyor • ancillary infrastructure, including workshops, offices, hydrocarbon storage areas, accommodation camp, water treatment plant, wastewater treatment plant. The proposal is located within a 24,684 hectares (ha) development envelope and will require the clearing of up to 12,262 ha of native vegetation.

Table 2: Proposal content elements

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
Physical elements				
Mine and associated infrastructure	Figure 2	**Part IV approved** Clearing of no more than 10,195 ha of native vegetation within the total approved proposal boundary area of 19,291 ha: *Jimblebar MS1126:* • Clearing of no more than 6,902 ha of native vegetation within the development envelope of 14,206 ha *Orebody 31 MS1021:* • Clearing of no more than 2,500 ha of native vegetation within a Mine Development Envelope of 4,075 ha *Orebody 18 MS439:* • Not more than 793 ha within the 1010 ha Maximum Disturbance Boundary	**Additional clearing of 2,067 ha of native vegetation** **Additional development envelope area of 5,393 ha**	Clearing of no more than 12,262 ha of native vegetation, within the 24,684 ha development envelope
Operational elements				
Groundwater abstraction – mine pit dewatering and water supply	Figure 2	**Part IV assessed** Total abstraction up to 45.5 GL/a: *Jimblebar MS1126*: • Not specified. 26.5 GL/a abstraction assessed under Part IV[1] *Orebody 31 MS1021:* • Not specified. 16.2 GL/a assessed under Part IV[2] *Orebody 18 MS439:* • Not specified. 2.8 GL/a assessed under Part IV[3]	**Additional groundwater abstraction for mine pit dewatering at the Jimblebar mine of up to 23.8 GL/a[4]**	Groundwater abstraction of up to 69.2 GL/a[4a]

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
Surplus water management – discharge to Ophthalmia Dam managed aquifer recharge (MAR) system	Figure 1	**Part IV approved** *Jimblebar MS1126:* • Discharge of up to 16.425 GL/a **Part IV assessed** *Orebody 31 MS1021:* • Not specified. 16.2 GL/a assessed under Part IV[5]	No change	Discharge of up to 32.625 GL/a surplus water to the Ophthalmia Dam system
Surplus water management – surface water discharge to watercourses	Figure 3	**Part IV assessed and approved** ***Surface water discharge - Caramulla Creek[6]*** *Jimblebar MS1126:* • Controlled discharge along Caramulla Creek to extend no further than 34 km from the northern boundary of the Development Envelope under natural, no-flow conditions (*up to 75 ML/d (27.375 GL/a) assessed under Part IV*) ***Surface water discharge - Jimblebar Creek[8]*** *Orebody 31 MS1021:* • Dewater discharge to extend no further than 16 km from the discharge point and remain in the main drainage channel of Jimblebar Creek under natural no-flow conditions (*up to 4 GL over 3 months maintenance and emergency discharge assessed under Part IV*) *Jimblebar MS1126 Water Management Plan:* • The Jimblebar Creek wetting front must not reach 200 m from the upstream extent of Innawally Pool under natural no-flow conditions (*up to 2.19 GL/a assessed under Part V*)	No change	**Caramulla Creek** Controlled discharge of up to 27.375 GL/a surplus water must not extend further than 34.8 km along Caramulla Creek from the Caramulla discharge point, during natural, no-flow conditions[7] **Jimblebar Creek** Controlled discharge of up to 4 GL surplus water for a maximum three months per year for contingency purposes, must not extend further than 16 km along Jimblebar Creek from the Orebody 31 discharge point, during natural, no-flow conditions[9] Controlled discharge of up to 2.19 GL/a surplus water must not extend further along Jimblebar Creek than 200 m from the upstream extent of Innawally Pool, during natural, no-flow conditions [10]

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
Surplus water management – aquifer injection	Figure 3	**Part IV approved** ***Aquifer injection - Caramulla MAR[11]*** *Jimblebar MS1126:* • Managed aquifer recharge in the Caramulla area to limit groundwater level rise to 25 m below ground level (*up to 30 ML/d (10.95 GL/a) assessed under Part IV*) **Part V assessed** ***Aquifer injection - South Jimblebar MAR[12]*** *Jimblebar Hub Part V L5415/1988/9:* • Design capacity of 3.65 GL/a ***Aquifer injection – Orebody 18 MAR[13]*** *Jimblebar Hub Part V L5415/1988/9:* • Design capacity of 13.14 GL/a	No change Remove South Jimblebar MAR[12]. Rename Orebody 18 MAR scheme to Orebody 18 (Ninga) MAR[13]	**Caramulla MAR** Groundwater injection of up to 10.95 GL/a surplus water in the Caramulla MAR area must not result in the groundwater level reaching 25 metres below ground level **Orebody 18 (Ninga) MAR** Groundwater injection in the Orebody 18 (Ninga) managed aquifer recharge area of up to 13.14 GL/a surplus water must not result in the groundwater level reaching 10 metres below ground level[14]
Tailings storage – in-pit tailings storage facilities	Figure 2	N/A - new	**Disposal of tailings in mine voids at Orebody 18 (including Orebody 17 deposit), Orebody 31 and Jimblebar**	Disposal of tailings in mine voids at Orebody 18 (including Orebody 17 deposit), Orebody 31 and Jimblebar
Ore processing	Figure 2	**Part IV assessed** Not specified **Part V approved** *Jimblebar Hub Part V L5415/1988/9:* • Production capacity of 92,000,000 tonnes per annum	No change	Processing of up to 92 Mtpa

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
Mine pit voids and pit lakes	Figure 2	Not specified	**Option for additional open voids at East Jimblebar and formation of pit lake/s**	Option for open voids and formation of pit lake/s
Greenhouse Gas Emissions				
Peak annual				
Scope 1	Diesel consumption and land clearing (mining)	**Part IV assessed** *Jimblebar MS1126*: Not specified[15] *Orebody 31 MS1021:* Not specified. 110,163 t CO_2-e per annum assessed under Part IV[16] *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**166,148 tCO_2-e per annum (2034)[17]**	Up to 394,241 tCO_2-e per annum (2030)
Scope 1	Electricity demand	**Part IV assessed** *Jimblebar MS1126*: Not specified[15] *Orebody 31 MS1021:* Not specified. 12,995 t CO_2-e per annum assessed under Part IV[16] *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**84,569 tCO_2-e per annum (2027)[17]**	Up to 151,261 tCO_2-e per annum (2032)
Scope 1**Error! B ookmark not defined.**	Rail iron ore transport	**Part IV assessed** *Jimblebar MS1126*: Not specified. Not assessed under Part IV *Orebody 31 MS1021:*	**86,765 tCO_2-e per annum (2037)**	Up to 149,848 tCO_2-e per annum (2031)

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
		Not specified. Not assessed under Part IV *Orebody 18 MS439:* Not specified. Not assessed under Part IV		
Scope 3	Downstream emissions (including port, iron ore shipping and steel making)	**Part IV assessed** *Jimblebar MS1126*: Not specified. Not assessed under Part IV[15] *Orebody 31 MS1021:* Not specified. Not assessed under Part IV[16] *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**63,600,877 tCO_2-e per annum**	Up to 109,703,663 tCO_2-e per annum (2035)
Annual average life of mine				
Scope 1	Diesel consumption and land clearing (mining)	**Part IV assessed** *Jimblebar MS1126*: Not specified. 414,305 tCO_2-e per annum assessed under Part IV[15] *Orebody 31 MS1021:* Not specified. 86,529 tCO_2-e per annum assessed under Part IV[16] *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**Up to 33,298 tCO_2-e per annum**	Up to 198,361 tCO_2-e per annum.
Scope 1	Electricity demand	**Part IV assessed** *Jimblebar MS1126*: Not specified. 174,803 tCO_2-e per annum assessed under Part IV[15] *Orebody 31 MS1021:* Not specified. 12,964 tCO_2-e per annum assessed under Part IV[16] *Orebody 18 MS439:*	**Up to 22,755 tCO_2-e per annum**	Up to 77,093 tCO_2-e per annum

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
		Not specified. Not assessed under Part IV		
Scope 1	Rail iron ore transport	**Part IV assessed** *Jimblebar MS1126*: Not specified. Not assessed under Part IV *Orebody 31 MS1021:* Not specified. Not assessed under Part IV *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**Up to 18,801 tCO_2-e per annum**	Up to 77,294 tCO_2-e per annum
Scope 3	Downstream emissions (including port, iron ore shipping and steel making)	**Part IV assessed** *Jimblebar MS1126*: Not specified. Not assessed under Part IV [15] *Orebody 31 MS1021:* Not specified. Not assessed under Part IV[16] *Orebody 18 MS439:* Not specified. Not assessed under Part IV	**Up to 13,883,481 tCO_2-e per annum**	Up to 56,770,254 tCO_2-e per annum
Other elements which affect extent of effects on the environment				
Maximum project life:[18]		**Part IV assessed and approved** *Jimblebar MS1126*: Not specified. 50 years (to 2055) approved under Part IV[18] *Orebody 31 MS1021:* Not specified. 30 years (to 2048) assessed under Part IV[19] *Orebody 18 MS439:* Not specified. 15 years (to 2011) assessed under Part IV[21]	**Additional 5 years of operations**	Total mine life of 46 years from the date of issue of the statement: • construction and mine operation: 36 years[21] • decommissioning and closure: 10 years[22]

Element	Location / description	Existing proposals maximum extent, capacity or range (Approved Proposals)	Proposed amendment extent, capacity or range (the Proposal – Significant Amendment)	Combined maximum extent, capacity or range (Combined Proposal)
Commissioning				
Commissioning of the additional dewatering infrastructure and tailings storage facilities will be undertaken subject to the operational elements above				
Rehabilitation and closure				
Progressive rehabilitation will be undertaken, where practicable, when disturbed areas are no longer required for operations. Any permanent pit lake that forms following the permanent cessation of dewatering (if backfilling above the water table cannot be achieved) will be designed and managed to be safe and non-polluting.				

Notes:

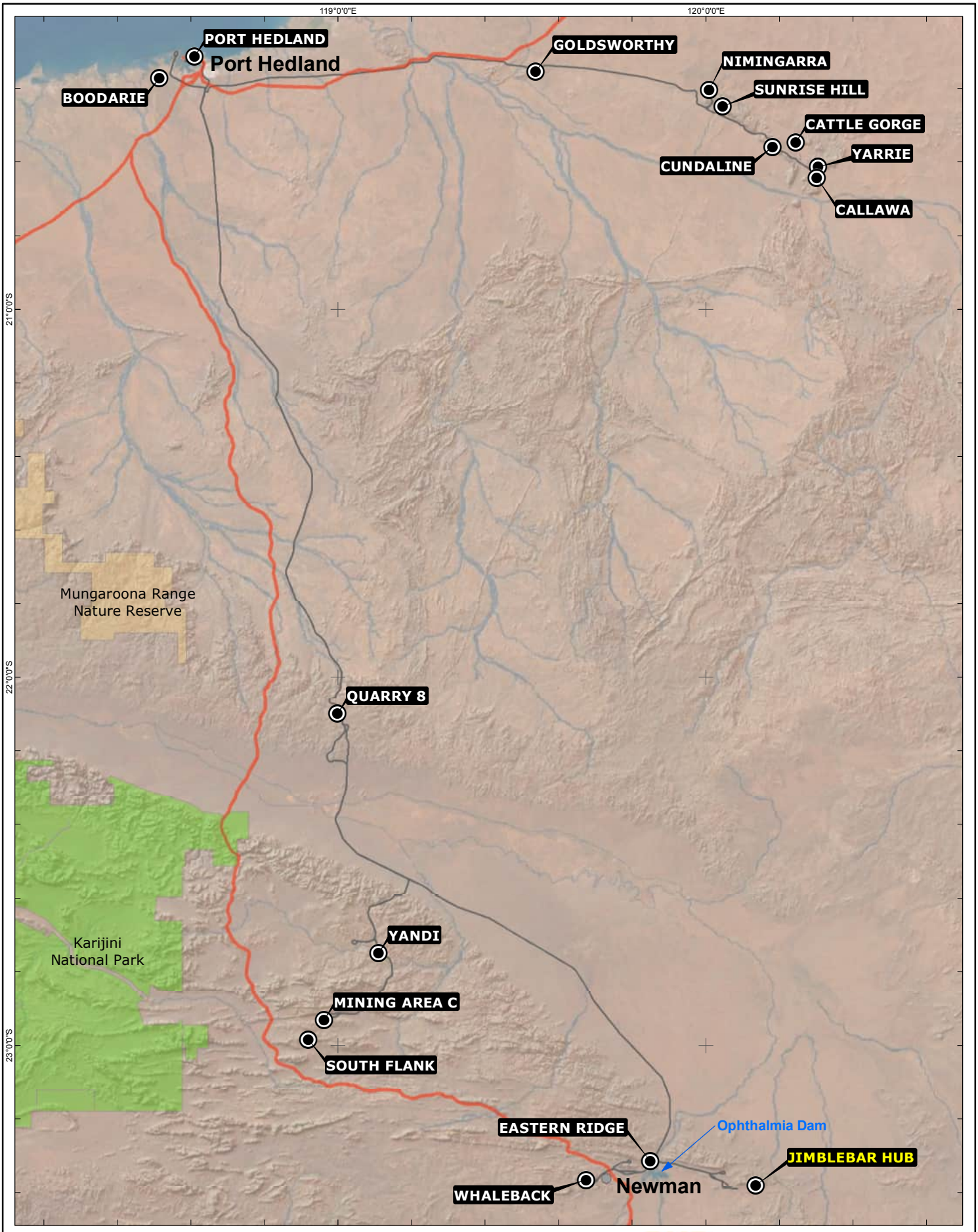
1. 72.1 ML/d dewatering and 0.5 ML/d water supply (72.6 ML/d =26.499 GL/a) assessed under Part IV: BHP Billiton Iron Ore Pty Ltd (2010) *Jimblebar Iron Ore Project Environmental Protection Statement*, September 2010. RiWI GWL158795(11) authorises abstraction up to 26.3 GL/a.
2. 16.2 GL/a dewatering assessed under Part IV: BHP Billiton Iron Ore (2015) *Orebody 31 Iron Ore Mine - Environmental Referral Document*, March 2015. RiWI GWL181025(4) authorises abstraction up to 16.2 GL/a.
3. 2.5 ML/d dewatering and 5.1 ML/d water supply (7.6 ML/d = 2.774 GL/a) at Orebody 17/18 assessed under Part IV: BHP Billiton Iron Ore (2007) *Orebody 18 Mine Modification - Application under Section 45C of the Environmental Protection Act, 1986*, December 2007. RiWI GWL156786(10) authorises abstraction up to 1.8615 GL/a.
4. Additional abstraction is for dewatering at Jimblebar (no change in abstraction at Orebody 31 and Orebody 18). Increase in abstraction from 72.6 ML/d to 137.7 ML/d, i.e. additional abstraction of 65.1 ML/d = 23.7615 GL/a (rounded to 23.8 GL/a).

4a Due to the conversion of the groundwater abstraction rates from ML/d to GL/a and addition of the rates for the individual mines (see notes 1, 2, 3 and 4), the total abstraction for the Combined Proposal is 69.2345 GL/a, rounded to 69.2 GL/a. This comprises 45.473 GL/a for the Approved Proposals (26.499+16.2+2.774), rounded to 45.5 GL/a and 23.7615 GL/a for the Proposal, rounded to 23.8 GL/a.

5. 16.2 GL/a discharge to Ophthalmia Dam assessed under Part IV: BHP Billiton Iron Ore (2015) *Orebody 31 Iron Ore Mine - Environmental Referral Document*, March 2015. Jimblebar Hub Part V Discharge of up to 32.625 GL/a to Opthalmia Dam is authorised under L5415/1988/9 (Instrument Log 21/4/2016: Licence amendment to assess the discharge from OB31 of up to 16.2 GL/a to Ophthalmia Dam and Instrument Log 16/7/19: Licence amendment to discharge up to 16.425 GL/a from Jimblebar to Ophthalmia Dam).
6. 75 ML/d (corresponding to 34 km wetting front extent north of the MS1126 Development Envelope) assessed for Caramulla Creek discharge under Part IV. BHP (2019) Jimblebar Optimisation Project: *Jimblebar Iron Ore Mine Revised Proposal: Environmental Review Document – referral supplementary report*. Jimblebar Hub Part V L5415/1988/9 (Instrument Log 19/7/2022): Design capacity of 32.85 GL/a (90 ML/d) assessed (no increase to Category 6 Assessed production / design capacity total of 47.225 GL/a).
7. Minor rewording from MS1126 wording to clarify and to measure wetting front extent from discharge point, rather than Development Envelope.
8. Contingency discharge (during maintenance or emergency events) to a tributary of Jimblebar Creek for a maximum of three months per year with a maximum discharge of 4 GL/a (corresponding to 16 km wetting front extent) assessed under Part IV. EPA (2015) *Report and recommendations of the Environmental Protection Authority: Orebody 31 Iron Ore Mine Project.* EPA Report 1559. Jimblebar Hub

Part V L5415/1988/9: Combined Design capacity of 35.04 GL/a assessed (32.85 GL/a discharge to Caramulla Creek and 2.19 GL/a to tributaries of Jimblebar Creek – Copper Creek and unnamed tributary).

9. Minor rewording from MS1021 to be consistent with wording in more recent MS1126 and clarify that it is the Orebody 31 discharge point. The Orebody 31 discharge point is on a tributary of Jimblebar Creek.
10. Minor rewording from MS1126 Jimblebar Water Management Plan to clarify that the discharge related to the Innawally Pool extent occurs upstream of Innawally pool, within the Development Envelope. The discharge point (as specified in Jimblebar Hub Part V L5415/1988/9) is on Copper Creek, a tributary of Jimblebar Creek.
11. Jimblebar Hub Part V L5415/1988/9 (Instrument Log 19/7/2022): Design capacity of 10.95 GL/a (30 ML/d) assessed for Caramulla MAR (no increase to Category 6 Assessed production / design capacity total of 47.225 GL/a).
12. Jimblebar Hub Part V L5415/1988/9 (Instrument Log 7/11/2012): Design capacity of 3.65 GL/a (10 ML/d) assessed for South Jimblebar MAR. South Jimblebar MAR is being decommissioned as this area will be mined in the future.
13. Jimblebar Hub Part V L5415/1988/9 (Instrument Log 19/2/2019): Design capacity increase to from 8.76 GL/a to 13.14 GL/a assessed for Orebody 18 MAR to add Ninga area bores. See also *L5415/1988/9 Amendment Notice #2* (DWER 2019)). Renamed Orebody 18 (Ninga) MAR to clarify that the Orebody 18 MAR includes bores in the Ninga area.
14. Corresponding to 10 mbgl trigger in *L5415/1988/9 Amendment Notice #2* (DWER 2019).
15. 0.414 Mt CO_2-e per annum average Scope 1 assessed under Part IV: EPA (2020) *Report and recommendations of the Environmental Protection Authority: Jimblebar Optimisation Project.* EPA Report 1663. Scope 1 and 2 emissions in Table 8-9, SKM (2009) *Jimblebar Iron Ore Project: Air quailty and greenhouse gas impact assessment*. Scope 3 emissions not quantified or assessed
16. Scope 1 and Scope 2 emissions assessed under Part IV: Pacific Environment Liimited (2014) *Orebody 31 – Air quality and greenhouse gas assessment* (Table H5 – Scenario 1). Assumption is that OB31 would replace OB18. Scope 3 emissions not quantified or assessed.
17. From 2023 emissions calculations (Appendix 15 of the Environmental Review Document).
18. Ministerial Statement 683 (2005), Wheelarra Hill Iron Ore Mine Extension, Life-of-Mine Proposal, Mining Lease 266SA, 40 km East of Newman, Shire of East Pilbara.
19. BHP Billiton (2015a) *Orebody 31 Hydrogeological Impact Assessment: Summary Document*. Appendix I to *Orebody 31 Iron Ore Mine Project Environmental Referral Document*.
20. EPA (1996) *Orebody 18 iron ore mine, (ML 244SA), 32 km east of Newman, Shire of East Pilbara*, Bulletin 840.
21. Includes construction of additional elements and activities and mine operation. Dewatering for below water table mining is planned to cease in 2052, but additional time is required for other elements and activities associated with the Combined Proposal.
22. Includes decommissioning phase for removal of infrastructure and closure phase for rehabilitation execution post last ore.



BHP mine
National Park
Nature Reserve
Highway
Rail

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GCS GDA 1994

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PUBLIC

JIMBLEBAR HUB
IRON ORE MINING OPERATIONS
Regional location and context

PLANNING & STANDARDS - IRON ORE

SCALE @ A4:	1:1,500,000	PREPARED:	SPATIAL DATA	FIGURE:	1
DATE:	14/12/2023	REQUESTOR:	ENV. APPROVALS	NO:	A1021/112A

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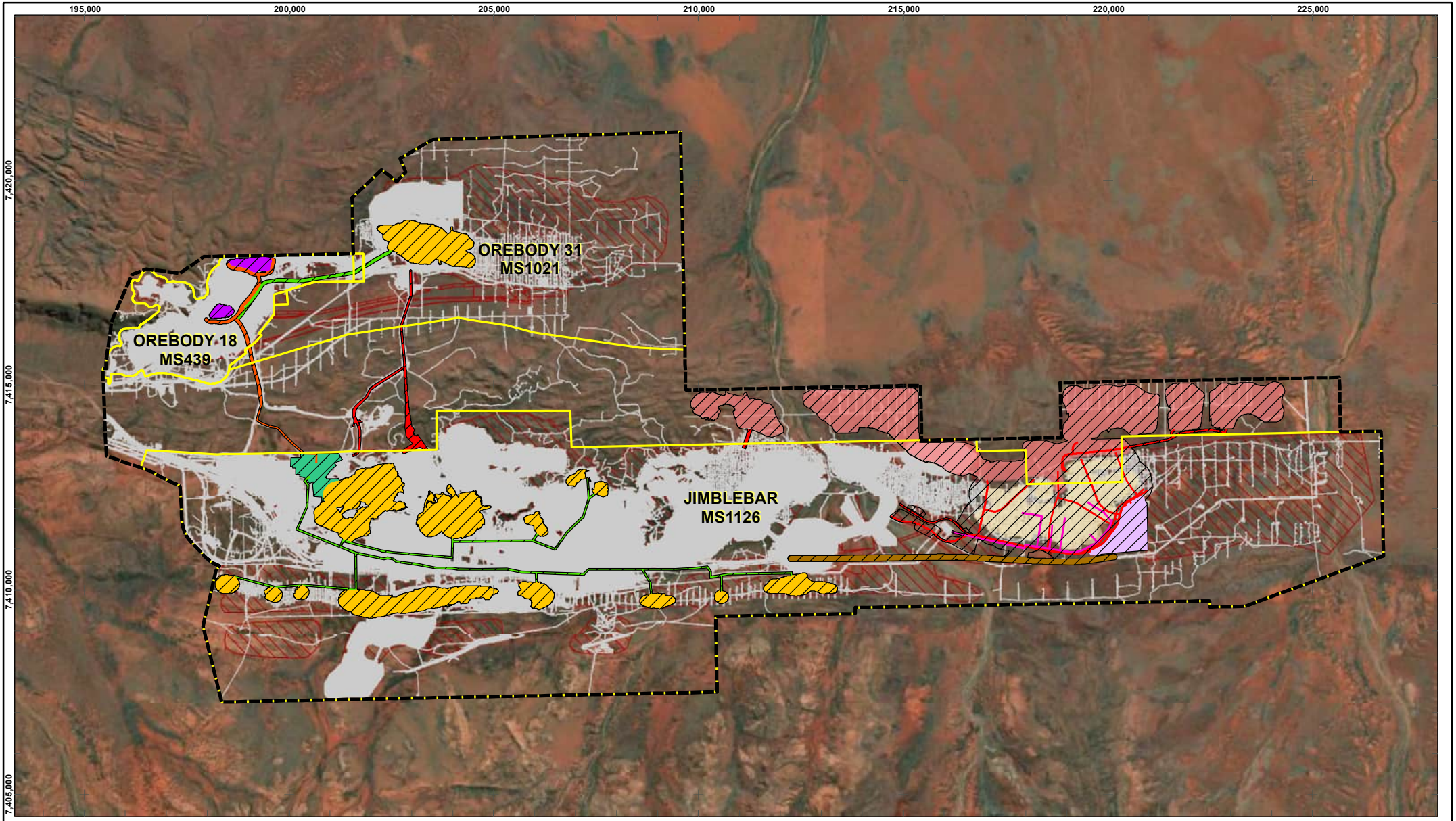

- Proposed Development Envelope
- Indicative Footprint
- Indicative Cleared Area as at FY2022
- Previously Assessed Areas
- Approved Proposal Ministerial Statements boundaries

Proposed pits and infrastructure

- Dewatering pipeline corridor
- Haul road
- Pipeline corridor (short term)
- *Potential In pit TSF (conceptual - long term)*
- *Potential pipeline corridor (conceptual – long term)*
- Beneficiation plant - construction disturbance footprint
- In-pit TSF (short term)
- Overland conveyor corridor
- Processing area
- Pit
- OSA

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GDA 1994 MGA ZONE 51

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JIMBLEBAR HUB
IRON ORE MINING OPERATIONS
Approved Development Envelopes, proposed Development Envelope and Indicative Footprint

PLANNING & STANDARDS - IRON ORE

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DATE:	13/11/2023	REQUESTOR:	ENV. APPROVALS	NO:	1021/113A

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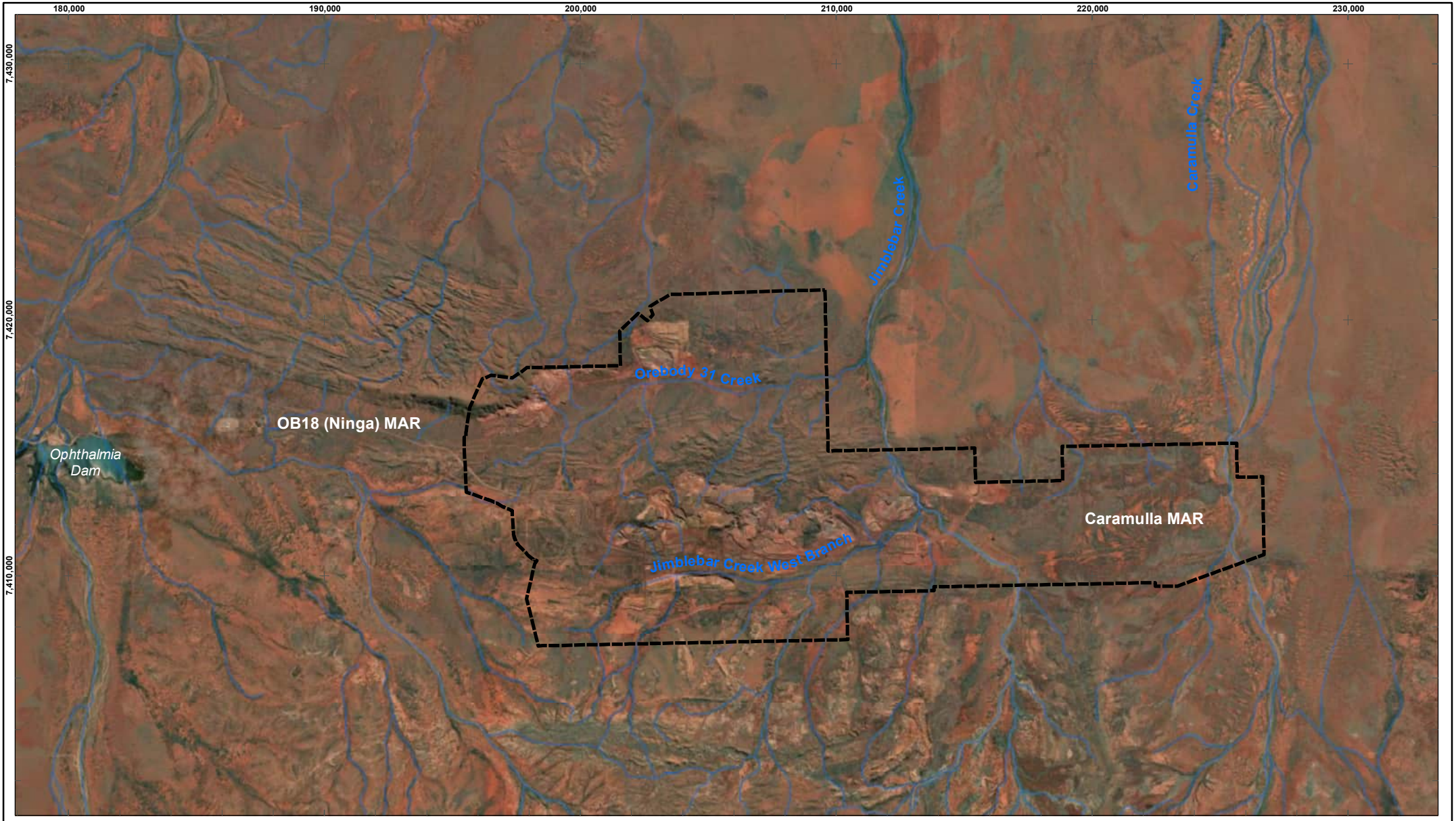

Jimblebar Hub Development Envelope

Watercourse

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GDA 1994 MGA ZONE 51

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IRON ORE MINING OPERATIONS
Operational elements

PLANNING & STANDARDS - IRON ORE

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DATE:	14/12/2023	REQUESTOR:	ENV. APPROVALS	NO:	1021/142A

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