GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

Mining Area C – South Flank Significant Amendment

BHP Iron Ore Pty Ltd

Report 1811

July 2026

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA). It describes the outcomes of the EPA's assessment of the Mining Area C – South Flank Significant Amendment proposal by BHP Iron Ore Pty Ltd.

This assessment report is for the Western Australian Minister for Environment and sets out:

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

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Chair
Environmental Protection Authority

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Summary

Proposal

The Mining Area C – South Flank Significant Amendment is a significant amendment to the Mining Area C – South Flank operations approved under Ministerial Statement (MS) 1072 by increasing groundwater abstraction to enable further below water table mining at existing pits.

The proponent for the proposal is BHP Iron Ore Pty Ltd.

The significant amendment proposal includes the extension of existing above and below water table mining pits, increased groundwater abstraction for dewatering and operational supply, surplus water management via creek discharge, infiltration and aquifer injection, mineral waste and associated infrastructure and supporting facilities.

The significant amendment has been assessed considering the existing operations. Current operations comprise the Mining Area C (MAC) and South Flank deposits. The significant amendment includes the expansion of existing above and below water table deposits, the increased dewatering to enable this, and new surplus water discharge infrastructure.

The closest third-party iron ore mining operations to the proposal are Rio Tinto's Hope Downs 1 and Baby Hope operations.

Context

The significant amendment (and approved proposal) is located 120 kilometres (km) northwest of Newman in the Central Pilbara region of Western Australia, within the Shire of East Pilbara (Figure 2). It is located on the Native Title Determination Area of the Banjima People (WCD2014/001) but will also pose indirect impacts to areas of the Native Title Determination of the Nyiyaparli People (WCD2018/008).

The significant amendment is located within the Pilbara bioregion under the Interim Biogeographic Regionalisation of Australia and is entirely within the Hamersley subregion. The proposal is 14 km east of the Karijini National Park conservation estate and approximately 47 km southwest of Fortescue Marsh, which is a proposed Ramsar site and is listed as a Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCA).

The combined proposal intersects several surface water catchments including the Coondewanna Flats catchment, west of the development envelope, and the Fortescue Marsh subcatchment area (also known as the Upper Weeli Wolli catchment and Upper Fortescue catchment) east of the development envelope.

Environmental values

Flora and vegetation, terrestrial fauna, inland waters, subterranean fauna, social surroundings and greenhouse gas (GHG) emissions are the key environmental factors that may be impacted by the proposal.

Environmental values are:

- Coondewanna Flats
- Lake Robinson
- Weeli Wolli Spring PEC (P1), including Ben's Oasis
- Marillana Creek and associated pools
- Yandicoogina Gorge
- Karijini National Park
- native vegetation in 'Good' to 'Excellent' condition
- locally significant vegetation associations
- priority flora species
- conservation significant fauna
- Short Range Endemic (SRE) habitat
- restricted and potentially restricted stygofauna
- Aboriginal significant sites:
    - Marillana Creek, including Flat Rocks
    - Yandicoogina Gorge
    - Coondewanna Flats and Lake Robinson
    - Weeli Wolli Creek and Weeli Wolli Springs
    - Ben's Oasis.

Consultation

The EPA published the proponent's referral information for the proposal on its website for seven days of public comment (from 7 March to 14 March 2025) and received five submissions. The EPA considered the comments received during the public consultation period in its assessment. On the 19 March 2025 the EPA decided

to assess the proposal at the level Referral Information with additional information (no public review period). The EPA also engaged in targeted consultation with the Banjima Traditional Owners, who have an ongoing relationship with the proponent which is formalised through a Comprehensive Agreement and associated registered Indigenous Land Use Agreement (ILUA).

Members of EPA Services consulted directly with the Banjima Native Title Aboriginal Corporation (BNTAC) and the Karlka Nyiyaparli Aboriginal Corporation (KNAC) to hear their feedback on the significant amendment. The BNTAC expressed that discharge of water into creek beds as a surplus water management measure was a key interest and their expectations were that the proponent should be looking to alternatives to manage surplus water.

Mitigation hierarchy

The mitigation hierarchy is a sequence of proposed actions to reduce adverse environmental impacts and emissions. The sequence commences with avoidance, then moves to minimisation, then rehabilitation, and offsets are considered as the last step in the sequence.

The proponent considered the mitigation hierarchy in the development and assessment of its proposal, and as a result:

- will delay implementation of the Northern Runaway Valley (RAV) managed aquifer recharge (MAR) until impacts to troglofaunal communities are surveyed and understood
- has designed the indicative footprint to avoid significant flora and vegetation as well as making use of land that has already been cleared or constructing on land adjacent to land that has already been cleared
- has designed the development envelope to avoid all ghost bat caves and water pools (as far as practicable)
- has avoided Scope 1 emissions by minimising land clearing through the use of existing infrastructure, including existing cleared tracks and processing infrastructure
- will avoid direct disturbance of known heritage sites
- will update monitoring trigger and threshold values in the Central Pilbara Water Resource Management Plan at Marillana Creek and Yandicoogina Gorge
- will implement a 90-day drying period for the Upper Marillana Creek discharge and a wetting front limit reaching the confluence of Marillana Creek to reduce mounding

- will limit operational duration of creek discharge schemes to a five-year period from commissioning
- will implement calcium carbonate treatment system for proposed creek discharge water
- has designed the Grand Central Overburden Storage Area (GCOSA) diversion structure to reduce flood inundation, erosion and sedimentation
- will keep mounding below 10 metres below ground level (mbgl) once the North RAV MAR is implemented to retain suitable troglofauna habitat
- will limit additional clearing for the proposal to 1,076 ha of native vegetation and fauna habitat
- will implement a 90-day drying period for the Upper and Lower Marillana Creek discharge and a wetting front limit reaching the confluence of the tributary with Marillana Creek to reduce vegetation dependence on increased water availability
- will use qualified fauna spotters when clearing areas where the Pilbara olive python and/or northern quoll are known to occur
- will install fauna underpasses along the pipeline route
- will undertake construction in daylight hours
- will implement feral cat and cane toad management programs
- will backfill mine voids at Northern Flank and Highway Deposit to five metres (m) above pre-mining groundwater levels to prevent formation of pit lakes
- will implement the Mining Area C Mine Closure Plan.

Consistent with the proponent's commitment to delay implementation of the RAV MAR until impacts to troglofaunal communities are surveyed and understood, the EPA considers an additional mitigation of a similar nature for stygofauna impacted by groundwater drawdown at Coondewanna Flats, South Flank and Weeli Wolli Spring where drawdown exceeds the approved proposal extent.

Assessment of key environmental factors

As the proposal is a significant amendment to an existing proposal, the EPA's assessment has been undertaken in the context of the approved proposal, having regard to the combined and cumulative effects on the environment. The EPA has also considered the combined impacts of the approved proposal and the proposed changes, and cumulative impacts of the revised proposal with other proposals in the region (combined proposal). The EPA has not re-assessed the approved proposal.

The EPA has identified the key environmental factors (listed below) in the course of the assessment. For each factor, the EPA has assessed the residual impacts of the proposal on the environmental values and considered whether the environmental outcomes are likely to be consistent with the EPA environmental factors objectives.

Inland Waters

Residual impact or risk to environmental value		Assessment finding
1.	Modification of surface water regimes	The impacts to pools on Marillana Creek can be avoided through the control of discharge and monitoring the extent of the wetting front. There will be a reduction of 0.55% in catchment draining to Coondewanna Flats from proposed South Flank surface water diversion structures. The EPA considers that subject to limitations and extents of the proposal, limiting the extent of the wetting front extending from creek discharge, no adverse impacts to riparian vegetation as a result of creek discharge, no reductions to Coolibah Lignum PEC at Coondewanna Flats, no reductions to Coolibah and mulga woodland over lignum and tussock grasses at Coondewanna Flats and Part V licensing, that the residual impacts will likely be consistent with the EPA's objective for inland waters.
2.	Groundwater drawdown	Drawdown associated with the combined proposal will significantly increase levels of drawdown from the approved proposal. Groundwater recovery is to be monitored through the Mine Closure Plan. The EPA considers that subject to limitations and extents of the proposal, no reduction to Weeli Wolli Springs PEC, no reductions to Coolibah Lignum PEC at Coondewanna Flats, no reductions to Coolibah and mulga woodland over lignum and tussock grasses at Coondewanna Flats, no reductions to groundwater levels in Karijini National Park, rehabilitation conditions and licensing under the RiWI Act, that the residual impacts will likely be consistent with the EPA's objective for inland waters.
3.	Groundwater mounding	Mounding as a result of the Northern RAV MAR Scheme will cause groundwater levels

		to rise to approximately 10 mbgl. This will impact 162 ha of vegetation. Offsets are required to counterbalance the significant residual impacts to eucalyptus trees and critical and supporting habitat for conservation significant fauna across the Pilbara bioregion. The EPA considers that subject to limitations and extents of the proposal, no increase to groundwater levels at Yandicoogina Gorge beyond historical levels, limiting groundwater mounding in Northern RAV initially to 20 mbgl and then 10 mbgl and offsets for vegetation losses, that the residual impacts will likely be consistent with the EPA's objective for inland waters.
4.	Decline in water quality	Water from a separate aquifer has the potential to impact water quality at Yandicoogina Gorge, however the water quality at Yandicoogina Gorge is similar to abstracted water from MAC. Groundwater is monitored ongoing through licensing. The EPA considers that subject to the limitations and extents of the proposal and Part V Licensing that the residual impacts will likely be consistent with the EPA's objective for inland waters.

Flora and Vegetation

Residual impact or risk to environmental value		Assessment finding or Environmental outcome
1.	Clearing of up to 1,043 ha of native vegetation in 'Good' to 'Excellent' condition within the indicative footprint. The combined effect of the approved proposal and the significant amendment is the loss of 20,740 ha of native vegetation in 'Good' to 'Excellent' condition within the development envelope.	The clearing of 'Good' to 'Excellent' condition vegetation within and immediately adjacent to the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species. The EPA advises that subject to limitations of clearing, and recommended conditions requiring the progressive rehabilitation and offsets, the significant residual impact can be counterbalanced, so that the environmental outcome is likely to be consistent with the EPA objective for flora and vegetation.
2.	Clearing of up to 57 ha of riparian vegetation, of which 10.3 ha represents groundwater dependent vegetation (GDV) (Table 8-10, BHP 2025).	The EPA has formed the view that the proposed impacts to riparian vegetation will result in a significant residual impact. Riparian vegetation covers less than 4% of the Pilbara landscape, with the distribution of riparian and GDVs in the Pilbara being considered restricted, with high regional significance. Of the 1,043 ha of 'Good' to 'Excellent' vegetation, 57 ha of vegetation represent riparian vegetation. Of the 57 ha, 10.6 ha has been assessed as potential groundwater dependent vegetation. The EPA advises that the clearing of riparian vegetation be subject to limitations of extent of clearing. To counterbalance this significant residual impact, the EPA considers the significant amendment should be subject to reasonable conditions which set clearing limits and ensure a level of protection to the remaining occurrences of riparian vegetation, and the requirements of offsets to counterbalance the significant residual impact.
3.	Potential decline or death of eucalypt trees within 162 ha of vegetation impacted by groundwater mounding for the Northern RAV MAR scheme.	Mounding associated with the Northern RAV MAR scheme is likely to adversely affect deep-rooted eucalypt woodland by rising groundwater level up to 10 mbgl. As groundwater levels recede post-operation, dependent trees are likely to experience drought stress, leading to decline or loss of individuals and degradation of vegetation

		condition and habitat structure. Mounding is expected to impact up to 162 ha of vegetation through indirect hydrological and soil disturbance. The potential 162 ha of vegetation loss should be addressed through specific conditions (B2 -1). Adverse impacts demonstrating decline or mortality attributable to mounding are considered residual impacts and warrant offset consideration (B8). Subject to these conditions, the EPA considers the environmental outcome.
4.	Clearing of 3.3% of *Aristida lazaridis* in the significant amendment, resulting in a combined clearing of 22.6% of known population.	The significant amendment will clear 476 individuals of *Aristida lazaridis* within the indicative footprint. The EPA advises that there will be no significant residual impact to *Aristida lazaridis*. Subject to limitations of clearing, the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.
5.	Clearing of less than 0.1% of two Beard vegetation associations (18 and 82).	The EPA advises that no residual direct impact to Beard vegetation associations is anticipated and the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.

Terrestrial Fauna

Residual impact or risk to environmental value		Assessment finding or Environmental outcome
1.	Clearing of up to 810 ha of critical foraging and dispersal habitat for significant fauna species: • ghost bat • northern quoll • Pilbara olive python • grey falcon.	The EPA considers the loss of conservation significant fauna habitat is a residual impact. Where habitat types occur within 12 km of critical ghost bat roosting habitat, all such habitat types are considered critical habitat for ghost bats (with the exception of Artificial Wetlands); 808 ha of mapped habitat was determined to be critical ghost bat habitat. The following habitat types were considered critical habitat for other recorded priority fauna species: • 27.3 ha northern quoll critical habitat (Gorge/Gully, Breakaway/Cliff, and Major Drainage Line) • 28.3 Pilbara olive python critical habitat (Artificial Wetland, Major Drainage Line, Gorge/Gully, and Breakaway / Cliff) • 10.14 ha grey falcon critical habitat (Major Drainage Line and Drainage Area/Floodplain). The EPA advises that with limits of clearing, the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna. Offsets are required to counterbalance the significant residual impacts to critical and supporting habitat for conservation significant fauna across the Pilbara bioregion.
2.	Clearing of up to 1,045 ha of supporting habitat for significant fauna species: • northern quoll • Pilbara olive python • Pilbara leaf-nosed bat • grey falcon • ghost bat.	The EPA considers the loss of conservation significant fauna habitat is a residual impact. Where habitat was not in 12 km range of ghost bat critical roosting habitat, habitat types were considered supporting ghost bat habitat (with the exception of Artificial Wetland). • 40 ha northern quoll supporting habitat (Artificial Wetland, and Minor Drainage Line) • 39 ha of Pilbara olive python supporting habitat (Minor Drainage Line)

		• 1,044 ha Pilbara leaf-nosed bat supporting habitat (Major and Minor Drainage Line, Breakaway/Cliff, Gorge/Gully, Hillcrest/Hillslope, and Drainage Area/Floodplain) • 395 ha grey falcon supporting habitat (Medium Drainage Line) The EPA advises that with limits of clearing, the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna.
3.	Potential degradation and/or loss of 160.7 ha of eucalypt trees that provide critical and supporting fauna habitat within the groundwater mounding contours of the Northern RAV MAR scheme.	Groundwater mounding from the Northern Rav MAR scheme may cause indirect adverse impacts to 162 ha of vegetation, of which 160.7 ha provide critical and/or supporting fauna habitat. Five habitat types exist within the predicted mounding contour: • Drainage Area/ Floodplain (30.5 ha) • Medium Drainage Line (35.8 ha) • Mulga Woodland (4.1 ha) • Stony Plain (90.0 ha) • Hardpan Plains (1.1 ha). The potential 162 ha of vegetation loss should be addressed through specific conditions (B2). Adverse impacts demonstrating decline or mortality attributable to mounding are considered significant residual impacts and warrant offset consideration (B8). Subject to these conditions, the EPA considers the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna
4.	Potential indirect impacts to ghost bat caves located within 450 m of the conceptual footprint as a result of increased dust, light, noise and vibration.	Given the nature of the significant amendments proposed works, which will predominantly involve micro-tunnelling, indirect impacts from dust, noise and vibration are expected to be minimal. The EPA considers that these impacts can be effectively managed through standard environmental management measures under recommended condition B3 and are not significant. No new caves were identified as part of the significant amendment with impacts to ghost bat caves assessed during the original

		proposal. Therefore, ghost bat caves were not assessed further as part of this significant amendment.
5.	Clearing of significant fauna records including: • northern quoll – four records • Pilbara olive python – two records • Western pebble-mound mouse – 17 records.	The EPA considers that the clearing of habitat associated with recorded occurrences of conservation-significant fauna species is a significant residual impact. Given the significance of these fauna species, the EPA recommends conditions that set limits disturbance to fauna habitat types and require the use of fauna spotters prior and during clearing activities. Subject to these conditions, the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna.
6.	Clearing of records of four potential/uncertain SRE species.	The combined proposal intersects areas where SRE and potential SRE invertebrate taxa have been recorded; however, all taxa are known from multiple locations within and outside the Indicative Footprint and occur across a range of habitat types. The proposed clearing is not expected to restrict species' ranges or isolate any known populations. Accordingly, the EPA considers that the impacts to terrestrial fauna will not be significant and that the proposal is likely to meet the EPA's objective for terrestrial fauna.

Subterranean Fauna

Residual impact or risk to environmental value		Assessment finding or Environmental outcome
1.	Groundwater mounding from the implementation of the Northern RAV MAR Scheme. Reduction of troglofauna habitat. Reduction or loss of restricted and potentially restricted troglofauna species.	The presence of suitable habitat extending outside the mounding contours of the Northern RAV MAR Scheme, along with the survey reports provided that indicate that all species have distributions that extend beyond the boundaries of the mounding contours. Verification from the proponent will occur through the Troglofauna Survey Report. Given the significance of subterranean fauna, the EPA recommends conditions that set limits on groundwater mounding and disturbance to subterranean fauna habitat and requiring the proponent to prepare a Troglofauna Survey Report to confirm the occurrence of potentially restricted troglofauna species in non-impacted areas, and/or habitat connectivity between the impacted and non-impacted areas. This plan requires approval by the CEO. The groundwater mounding shall be limited, retained at approved proposal extent, until distribution of potential restricted troglofauna species are confirmed. Subject to these conditions, the environmental outcome is likely to be consistent with the EPA objective for subterranean fauna.
2.	Groundwater drawdown from the implementation of the Northern RAV MAR Scheme. Reduction of stygofauna habitat. Reduction or loss of restricted and potentially restricted stygofauna species.	The EPA has applied the Precautionary Principle to all stygofauna species it considers likely to occur within the Coondewanna Flats, South Flank and Weeli Wolli Spring areas to be impacted by drawdown from the significant amendment based on: 1. insufficient survey information in supporting documents 2. insufficient information to support interpretation of supporting documents in the ERD and RFI response from the proponent 3. consideration of combined proposal impacts on a species, community and/or ecosystem for other proposals 4. Coondewanna Flats, South Flank and Weeli Wolli Spring are of significance due to the drawdown impacting

Residual impact or risk to environmental value		Assessment finding or Environmental outcome
		stygofauna species in these areas for the combined proposal. Given the significance of subterranean fauna, the EPA recommends conditions that set limits on groundwater drawdown and disturbance to subterranean fauna habitat, and requiring the proponent to prepare a Stygofauna Report to identify all potentially restricted stygofauna in the impacted and non-impacted areas, and/or habitat connectivity between the impacted and non-impacted areas. This plan requires approval by the CEO. The groundwater drawdown shall be limited, retained at approved proposal extent, until distribution of potential restricted stygofauna species are confirmed. The proponent identified nine potentially restricted stygofauna species in the drawdown area of the combined proposal. EPA Services assessment identified a further 17 potentially restricted stygofauna species in the drawdown area of the combined proposal. Condition B1-3 requires the proponent to demonstrate either: • that the affected species' distribution occurs outside the groundwater drawdown area of impact; and/or • that habitat connectivity extends beyond the groundwater drawdown area of impact and non-impacted areas. Until this is demonstrated, drawdown at Coondewanna Flats, South Flank and Weeli Wolli Springs will be restricted to levels already approved under MS 1072. After this is demonstrated, groundwater drawdown can increase to levels modelled as part of the significant amendment. Subject to these conditions, the environmental outcome is likely to be consistent with the EPA objective for subterranean fauna. The EPA considers that the impacts of the proposal, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for stygofauna.

Greenhouse Gas Emissions

Residual impact or risk to environmental value		Assessment finding
1.	The significant amendment scope 1 emissions are expected to be on average 34,563 t CO_2-e per annum (up to a maximum of 242,126 t CO_2-e). The combined proposal scope 1 emissions are expected to be on average 431,311 t CO_2-e per annum (up to a maximum of 1,032,246 t CO_2-e). The significant amendment proposal scope 2 emissions are expected to be on average 10,317 t CO_2-e per annum (up to a maximum of 62,137 t CO_2-e). The combined proposal scope 2 GHG emissions are estimated to be on average 120,408 t CO_2-e per annum, with a peak of 171,979 t CO_2-e. Scope 3 GHG emissions are estimated to be on average 120,822,587 t CO_2-e per annum with a peak of 207,440,658 t CO_2-e.	Implementation of the significant amendment is expected to produce up to 1,313,404 t CO_2-e scope 1 emissions and the combined proposal is expected to produce 16,389,815 t CO_2-e scope 1 GHG emissions over the life of the proposal. The average annual estimated scope 1 emissions from the proposal would, at commencement of operations, constitute approximately 0.52% of Western Australia's total emissions and 0.1% of Australia's total reported GHG emissions. Scope 1 emissions from the significant amendment and combined proposal, except those associated with vegetation clearing, are covered by the Safeguard Mechanism. The Safeguard Mechanism requires the proponent to take actions to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. Emissions associated with vegetation clearing are well below 100,000 t CO_2-e per annum (annual maximum (peak) of 25,377 t CO_2-e). The EPA notes that offsets are likely to meet the emissions reduction trajectory and considers that the proponent has undertaken due diligence and its proposed portfolio of offsets. The scope 2 emissions from the significant amendment are those associated with electricity generation from Yarnima Power Station. The EPA notes that Yarnima Power Station is itself a 'designated large facility' under the NGER Act and is required to take actions to reduce emissions to achieve Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050. The EPA notes that scope 3 emissions form a large proportion (>99%) of total GHG emissions over the life of the proposal. The EPA considers that the proponent is taking

		all practicable measures currently available to reduce scope 3 emissions. In consideration of this, the EPA is of the view that the likely environmental effects of the proposal can be mitigated through the obligations required under the *National Greenhouse and Energy Reporting Act 2007* to ensure the environmental outcome is likely to be consistent with the EPA objective for greenhouse gas emissions.

Social Surroundings

Residual impact or risk to environmental value		Assessment finding or Environmental outcome
1.	Indirect impacts to Aboriginal cultural heritage values.	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage values associated with changes to groundwater and surface water regimes. The EPA advises that this residual impact should be subject to condition B1 to ensure that environmental values associated with significant sites are preserved.
2.	Direct impacts to Aboriginal heritage features/sites.	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage associated with disturbance to heritage sites or features. The EPA advises that this residual impact should be subject to recommended condition B5-1 to ensure impacts to Aboriginal heritage sites are identified and avoided unless consent is granted through another decision-making process in consultation with the Traditional Owners (recommended condition B5-1). The EPA concludes that subject to regulation by other DMAs and the recommended conditions, the environmental outcome is likely to be consistent with the EPA's objective for social surroundings.
3.	Loss or restriction of access to land for cultural purposes.	The EPA advises there is a residual impact to Aboriginal cultural heritage through the loss of access to, or restriction of access to, the land for cultural activities. The EPA recommends condition B5-1 to ensure Traditional Owners' access to the land for traditional or cultural purposes, subject to reasonable health and safety requirements. The EPA considers that implementation of the recommended condition would ensure consistency with the EPA's objective for social surroundings.

Holistic assessment

The EPA considered the connections and interactions between relevant environmental factors and values to inform a holistic view of impacts to the whole environment. The EPA formed the view that the holistic impacts would not alter the EPA's conclusions about consistency with the EPA factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors
- the EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- the principles of the *Environmental Protection Act 1986* (EP Act).

The EPA has recommended that the proposal may be implemented subject to conditions recommended in Appendix A.

Other advice

The EPA may, if it sees fit, include other information, advice or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA it its assessment of a proposal.

Rehabilitation

The EPA notes that the rehabilitation and closure of mining and associated activities should consider the involvement of Traditional Owners at all stages, including the design of waste landforms, seed collection, revegetation and re-establishment of natural water flows.

Overall, the EPA believes that it is important to establish clear objectives and success criteria for the rehabilitation in the Pilbara. Further work and coordination is

required across government, industry and research organisations to establish these objectives.

The EPA notes that the Pilbara region is experiencing increasing cumulative pressure from existing and proposed mining activities, particularly related to surface water and groundwater resources. The EPA recognises that information gaps remain in relation to cumulative water-related impacts at a regional scale and considers collaboration between proponents, regulators and Traditional Owners to be critical to addressing these gaps.

The EPA has recommended condition B1-4 that requires the proponent to prepare a water balance to demonstrate its compliance with outcomes set in condition B1-1. The EPA recognises that multiple proponent's share differing levels of responsibility for the long-term impacts on sensitive receptors such as Weeli Wolli Springs. The EPA considers that the water balance required by condition B1-4 should form part of a larger strategic effort that requires the active participation of the EPA and proponents operating in the vicinity of Weeli Wolli Springs.

The EPA considers that this offers a coordinated approach to managing environmental impacts in a manner that is consistent with the principles of environmental stewardship and long-term protection of Weeli Wolli Springs.

1 Proposal

The Mining Area C – South Flank Significant Amendment (significant amendment) is located 120 kilometres (km) northwest of Newman, in the Central Pilbara region of Western Australia (Figure 2). The significant amendment is within the Shire of East Pilbara. The significant amendment is located on the Native Title Determination Area of the Banjima People (WCD2014/001) but will also pose indirect impacts to areas of the Native Title Determination of the Nyiyaparli People (WCD2018/008).

The proposal is a significant amendment to the approved proposal authorised under Ministerial Statement (MS) 1072 and has been assessed considering the existing operations. Current operations comprise of the Mining Area C (MAC) and South Flank deposits. The significant amendment includes the expansion of existing above and below water table deposits, the increased dewatering to enable this, and new surplus water discharge infrastructure.

The significant amendment is located within the Pilbara bioregion under the Interim Biogeographic Regionalisation of Australia (IBRA) and is entirely within the Hamersley subregion (BHP 2025). The proposal is 14 km east of the Karijini National Park conservation estate and approximately 47 km southwest of Fortescue Marsh, which is listed in the Directory of Important Wetlands in Australia (DCCEEW 2024), is a proposed Ramsar site (DoE 2013) and is listed as a PEC by DBCA.

The proposal intersects several surface water catchments including the Coondewanna Flats catchment, west of the development envelope, and the Fortescue Marsh subcatchment area (also known as the Upper Weeli Wolli catchment and Upper Fortescue catchment) east of the development envelope.

The closest third-party iron ore mining operations to the proposal are Rio Tinto's Hope Downs 1 and Baby Hope operations.

The proponent submitted the Mining Area C Revised Proposal under section 38(1) of the EP Actin May 2016, expanding operations to include satellite iron ore pits at Southern Flank and to manage these with the existing pits under a consolidated Ministerial Statement. This was approved in February 2018, MS 1072. The EPA assessed one section 45C amendment under this proposal in 2020.

A new consolidated Ministerial Statement will be published with conditions that supersede, consolidate and modernise the existing operations.

The proposal is set out in section 2 of the proponent's referral supporting report (BHP 2025), which is available on the EPA website.

The EPA has assessed the residual impacts of the significant amendment by considering the expansions and changes which are now proposed in the context of

the approved proposal. The EPA has also considered the combined impacts of the approved proposal and the proposed changes, and cumulative impacts of the revised proposal with other proposals in the region (combined proposal). The EPA has not re-assessed the approved proposal.

The elements of the significant amendment which have been subject to the EPA's assessment are included in Figure 1. The development envelope and disturbance footprint of the approved proposal and the combined proposal are provided in Figure 3.

The following terminology is used throughout this report:

Significant amendment: the proposed expansion of operations at Mining Area C – Southern Flank, including the expansion of existing above and below water table deposits, the increased dewatering to enable this, and new surplus water discharge infrastructure.

Approved proposal: Mining Area C – Southern Flank operations approved under MS 1072 in February 2018.

Combined proposal/Proposal: the combination of the significant amendment with the approved proposal.

Development envelope: refers to the combined development envelope of the approved proposal and the significant amendment.

Indicative footprint: refers to the new areas to be directly disturbed for the significant amendment.

Table 1: Significant amendment proposal content document (BHP 2025)

Proposal element	Location	Existing Maximum extent or range	Proposed amendment extent, capacity or range	Combined maximum extent
Physical elements				
Mine and associated infrastructure: • open pits • haul roads • overburden storage areas • ore processing and blending	Figure 3, Figure 4	Part IV assessed and approved: • clearing of no more than 21,824 ha of native vegetation within the development envelope of 38,909 ha	Additional clearing of 1,076 ha of native vegetation Additional development envelope area of 1,150 ha	Clearing of no more than 22,900 ha of native vegetation, within the 40,059 ha development envelope
Operational elements				
Groundwater abstraction – mine pit dewatering and water supply		Part IV assessed and approved: • total abstraction up to 37.3 GL/a for dewatering	Additional groundwater abstraction for mine pit dewatering of up to 28.4 GL/a	Groundwater abstraction of up to 65.7 GL/a
Surplus water management		Part IV assessed and approved: • up to 34.84 GL/a via managed aquifer recharge, infiltration ponds, discharge from sedimentation basin and discharge to a drainage line that leads to Pebble Mouse Creek	Additional surplus water discharge volume of up to 21.37 GL/a	Surplus water management up to 56.21 GL/a
Surplus water management – surface water discharge to watercourses	Figure 4	Part IV assessed and approved Surface water discharge, Pebble Mouse Creek: • controlled discharge along drainage line and Pebble Mouse Creek to extend no further than 14 km from the discharge point or extend beyond the boundary of the Mining Area C development • shall be intermittent under natural no flow conditions for maximum of 120 days in any 12-month period. (up to 34.84 GL/a assessed under Part IV)	Additional surface water discharge to watercourses of up to 60 ML/d	Upper Marillana Creek: • controlled discharge of up to 30 ML/day of surplus water must not extend further than 27 km along Marillana Creek tributary from the discharge point. • a dry period of 90-days proposed in any 12-month period. • maximum operational duration of five years Lower Marillana Creek: • controlled discharge of up to 30 ML/d surplus water from existing

Proposal element	Location	Existing Maximum extent or range	Proposed amendment extent, capacity or range	Combined maximum extent
		Part V Approved MAC Environmental Licence L7851/2002/6: • 12.76 tonnes per annum (tpa) surface water discharge to Pebble Mouse Creek		licenced discharge point in the BHP Yandi Mine Site • a dry period of 90-days proposed in any 12-month period • maximum operational duration of five years Pebble Mouse Creek: • controlled discharge along drainage line and Pebble Mouse Creek to extend no further than 14 km from the discharge point or extend beyond the boundary of the Mining Area C development • shall be intermittent under natural no flow conditions for maximum of 120 days in any 12-month period
Surplus water management – aquifer injection	Figure 4	Part IV assessed and approved Aquifer injection – South Flank MAR: • managed aquifer recharge in the South Flank Area to limit groundwater level rise to 30 m from ground level within an area of 400 m around SF0095R bore • up to 35 ML/d (12.78 GL/a) Infiltration – Runaway Valley: • up to 30 ML/d (10.95 GL/a) Aquifer Injection – Juno Downs MAR: • up to 30 ML/d (10.95 GL/a) Central Sedimentation Basin: • up to 23.5 ML/d (8.58 GL/a) Western Sedimentation Basin: • up to 12 ML/d (4.38 GL/a) Part V approved MAC Environmental Licence L7851/2002/6: • 12,760,000 tpa (12.76 GL/a) South Flank MAR	Additional surplus water discharge via managed aquifer recharge. Northern RAV MAR: • groundwater injection and infiltration of up to 20 ML/day (7.3 GL/a) via managed aquifer recharge Yandicoogina GDE Groundwater Supplementation: • groundwater injection of up to 10 ML/d (3.65 GL/a) via managed aquifer recharge as an environmental water requirement for the Yandicoogina GDE	Northern RAV MAR: • groundwater injection and infiltration of up to 20 ML/d (7.3 GL/annum) via managed aquifer recharge Yandicoogina GDE Groundwater Supplementation: • groundwater injection of up to 10 ML/day (3.65 GL/a) via managed aquifer recharge as an environmental water requirement for the Yandicoogina GDE South Flank MAR: • managed aquifer recharge in the South Flank area to limit groundwater level rise to 30 m from ground level within an area of 400 m around SF0095R bore • groundwater injection of up to 35 ML/d (12.78 GL/a) Runaway Valley:

Proposal element	Location	Existing Maximum extent or range	Proposed amendment extent, capacity or range	Combined maximum extent
		• 16,425,000 tpa (16.43 GL/a) Runaway Valley Infiltration Ponds (listed as Packsaddle Infiltration Ponds in the licence) • 12,775,000 tpa (12.78) Junda Downs MAR • 8,760,000 tpa (8.76 GL/a) Central Sedimentation Basin • 10,950,000 tpa (10.95 GL/a) Western Sediment Basin • 12,760,000 tpa (12.76 GL/a) surface water discharge to Pebble Mouse Creek		• Infiltration of up to 30 ML/day (10.95 GL/a) Juna Downs MAR: • Groundwater injection of up to 30 ML/day (10.95 GL/a) Central Sediment Basin: • Infiltration of up to 23.5 ML/day (8.58 GL/a) Western Sedimentation Basin: • Infiltration of up to 12 ML/day (4.38 GL/a)
Grand Central Overburden Storage Area Surface Water Diversion Structure	Figure 3	None	Inclusion of surface water diversion structures to mine infrastructure	Surface water diversion to protect flood inundation of the overburden storage area
Ore processing	Figure 4	Part IV assessed 151,000,000 tonnes of ore per annual period Part V approved MAC Environmental Licence Part V L7851/2002/6 Production capacity of 151,000,000 tonnes per annum	No change	Processing of up to 151,000,000 tpa
Mine Pit voids and pit lakes	Figure 4	Part IV assessed: • in Mining Area C and Highway deposit (South Flank) all below water table pits to be backfilled to prevent the formation of pit lakes • backfill in other deposits at South Flank to be assessed as part of the closure planning process	No change	• In Mining Area C and Highway deposit (South Flank) all below water table pits to be backfilled to prevent the formation of pit lakes • Backfill in other deposits at South Flank to be assessed as part of the closure planning process
Greenhouse Gas Emissions				
Peak Annual				
Scope 1	Mine Emissions covered by	Part IV assessed Mining Area C MS1072:	242,126 t CO_2-e per annum (2045)	Up to 1,032,246 t CO_2-e per annum (2035)

Proposal element	Location	Existing Maximum extent or range	Proposed amendment extent, capacity or range	Combined maximum extent
	Safeguard Mechanism	• Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt t CO_2-e per annum		
Scope 2	Electricity supply – (Grid connected electricity demand)	Part IV assessed Mining Area C MS1072: • Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt CO_2-e per annum	62,137 t CO_2-e per annum (2041)	Up to 171,979, t CO_2-e per annum (2050)
Scope 3	Downstream emissions (including rail transport, port, iron ore shipping and steel making)	Part IV assessed Mining Area C MS1072: • Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt t CO_2-e per annum	59,782,907 t CO_2-e per annum (2041)	Up to 207,440,658 t CO_2-e per annum (2029)
Annual average life of mine				
Scope 1	Mine Emissions covered by Safeguard Mechanism	Part IV assessed Mining Area C MS1072: • Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt t CO_2-e per annum	Up to 34,563 t CO_2-e per annum	Up to 431,311 t CO_2-e per annum
Scope 2	Electricity supply – (Grid connected electricity demand)	Part IV assessed Mining Area C MS1072: • Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt CO_2-e per annum	Up to 10,317 t CO_2-e per annum	Up to 120,408 t CO_2-e per annum
Scope 3	Downstream emissions (including rail transport, port, iron ore shipping and steel making)	Part IV assessed • Mining Area C MS1072: • Scope 1,2 and 3 emissions were not individually specified • Maximum annual cumulative 1,975 kt CO_2-e per annum	Up to 5,888,132 t CO_2-e per annum	Up to 120,822,587 t CO_2-e per annum
Elements which affect extent of effect on the environment				

Proposal element	Location	Existing Maximum extent or range	Proposed amendment extent, capacity or range	Combined maximum extent
Maximum project life		Part IV assessed and approved Until 2073	No change	Expected life of asset: 2073
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				

Units and abbreviations
ha – hectare
tpa – tonnes per annum
ML/d – Megalitres per day
GL/a – Gigalitres per annum
t CO_2-e – tonnes of carbon dioxide equivalent
kt CO_2-e – kilo tonnes of carbon dioxide equivalent
km - kilometres

Application of *Environmental Protection Act 1986* amendments to the proposal

The proposal was referred as a significant amendment to the existing Mining Area C – South Flank which was approved through MS 1072. The EPA decided to assess the significant amendment on 19 March 2025.

Proposal alternatives

The proponent did not consider alternative locations for the significant amendment.

A range of project alternatives were considered by the proponent during the assessment, which are discussed in section 2.4 of the referral supporting document (BHP 2025).

The significant amendment will utilise the proponent's existing infrastructure including railway and ports, power, communications and road networks. This will reduce the extent of new infrastructure required and result in a smaller disturbance footprint that would otherwise be required for a greenfield project.

Original proposal implementation

The proponent obtained approval to implement the Mining Area C Project under the EP Act in December 1998 (MS 491) for the development at deposits A-F and R, P1-P6 and the Brockman Detrital, on-site processing and other infrastructure.

The EPA has assessed six section 45C amendments under this proposal in 2007, 2008, 2009, 2013, 2014 and 2017. The EPA inquired into the implementation conditions of MS 491 under section 46C of the EP Act at the request of the proponent, which was approved in 2014.

The proponent submitted the Mining Area C Revised Proposal under section 38(1) of the EP Act in May 2016, expanding operations to include satellite iron ore pits at Southern Flank and to manage these with the existing pits under a consolidated Ministerial Statement. This was approved in February 2018 (MS 1072). The EPA assessed one section 45C amendment under this proposal in 2020.

The original proposal commenced operations in 2018. Annual compliance assessment reports have been submitted since commencement as required by MS 1072.

Key conditions from the original proposal included:

- cultural heritage management – including the continued implementation of the Cultural Heritage Management Plan
- water management – no reduction Priority Ecological Community occurrences on the Coondewanna Flats and Weeli Wolli Spring, including Ben's Oasis

- ghost bat management – to maintain the long-term viability of the ghost bat population in the development envelope, and no disturbance of the retained high value ghost bat caves
- greenhouse gas – reporting of annual emissions
- rehabilitation/decommissioning – rehabilitating and decommissioning in an ecologically sustainable manner, including backfilling of Highway Deposit Pits.

The objectives of the previous approval have been maintained and developed further as required in the proposed approval conditions, considering the significance of this amendment.

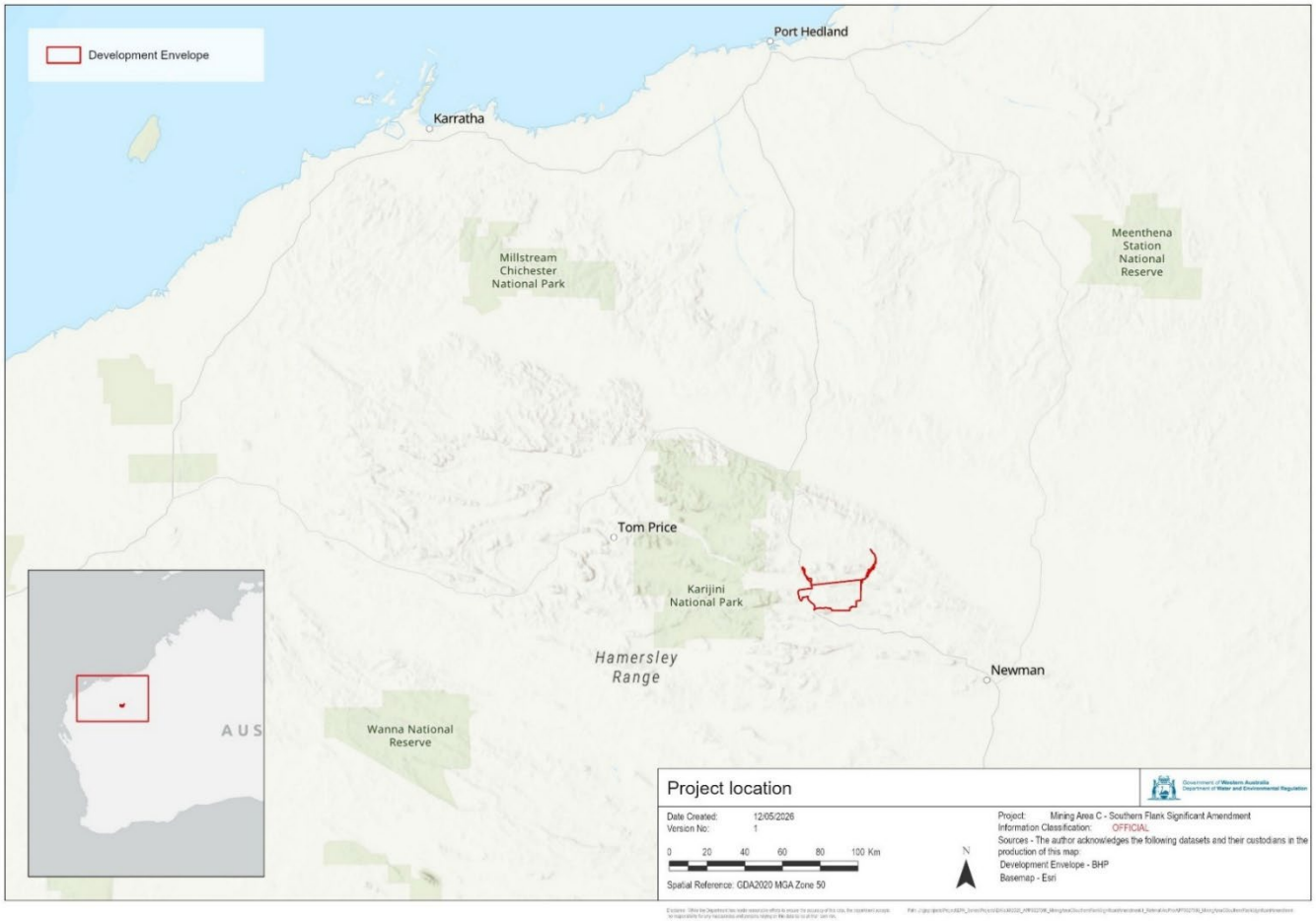

Figure 1: Proposal location

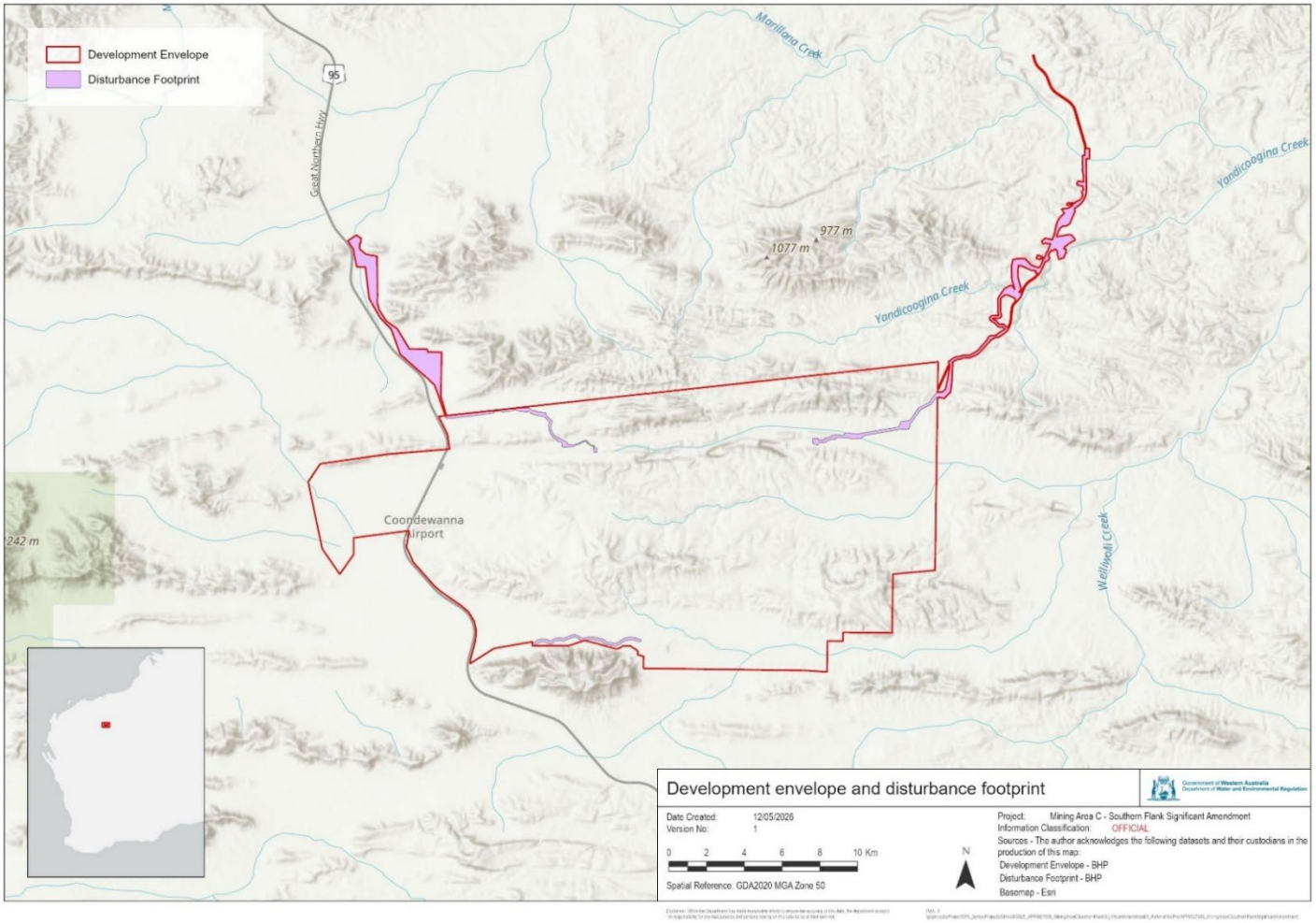

Figure 2: Development envelope, disturbance footprint and operational elements

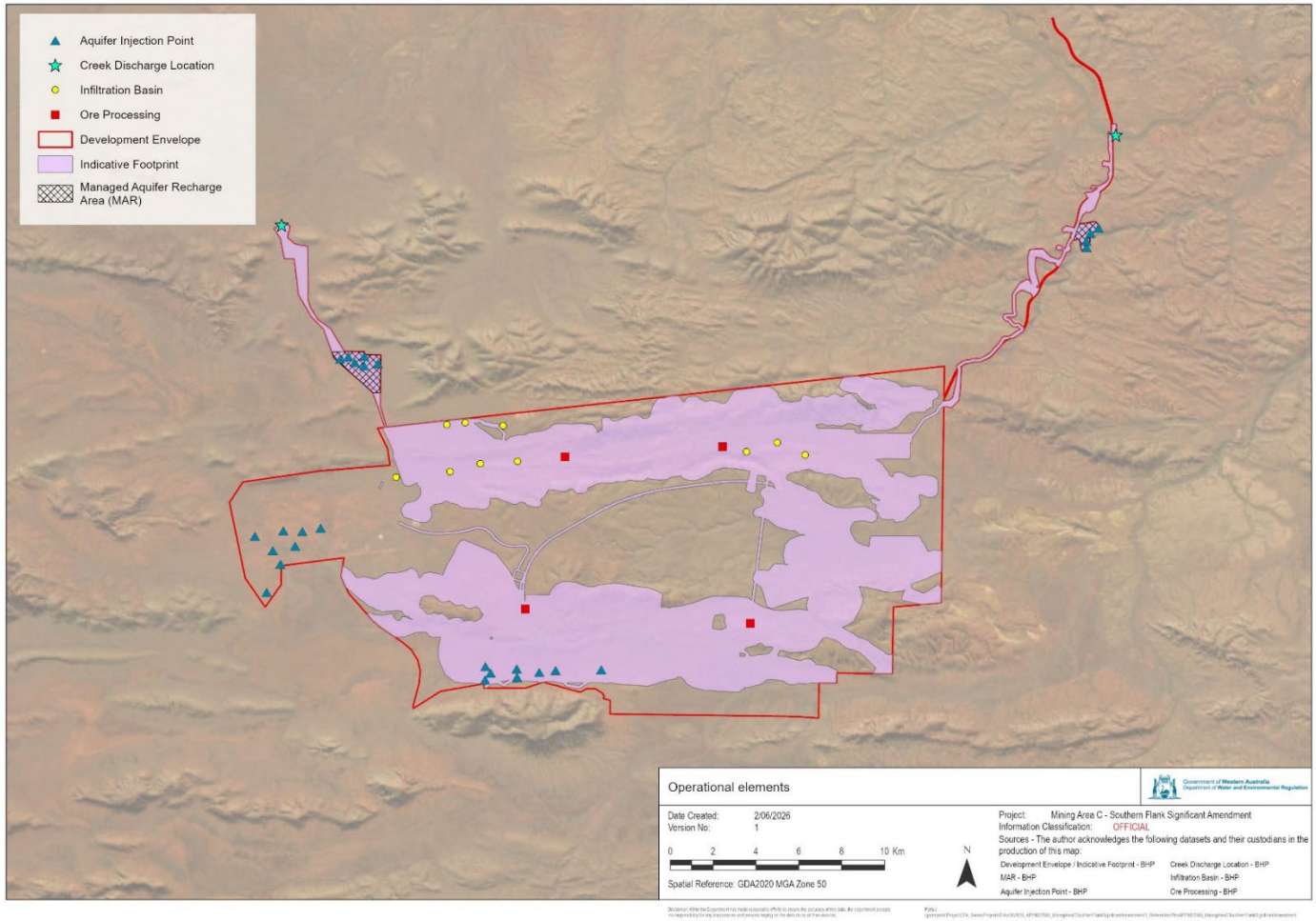

Figure 3: Operational elements

2 Assessment of key environmental factors

This section includes the EPA's assessment of the key environmental factors. The EPA also evaluated the impacts of the proposal on other environmental factors (landforms, terrestrial environmental quality and air quality) and concluded these were not key factors for the assessment. This evaluation is included in Appendix D.

The EPA has assessed the proposal in the context of the approved proposal (MS 1072) while having regard to the combined and cumulative effect that the implementation of the approved proposal may have on the following environmental factors.

2.1 Inland Waters

2.1.1 Environmental objective

The EPA environmental objective for flora and vegetation is to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected (EPA 2018).

2.1.2 Investigations and surveys

The EPA advises the following investigations, surveys and peer reviews were used to inform the assessment of the potential impacts to inland waters:

- Marillana Creek Infiltration Proposal Geotechnical Mapping and Investigation Report (4DG 2019)
- Marillana Creek Wetting Front Modelling (AQ2 2019)
- Yandi E8 Creek Discharge Wetting Front (BHP 2021e)
- Update of South Flank Grand Central Overburden Storage Area Surface Water Management Plan and Surface Water Impact Assessment (WSP 2024)
- Coondewanna Flats Natural History (Astron 2021)
- Central Pilbara Hydrogeological Assessment (BHP 2025a)
- Runaway Valley North Updated Hydrogeological Assessment of MAR (Advisian 2024)
- Hydrogeological Investigation Drilling Program, Ministers North (RPS 2021)
- FY23 Ministers North SUR Phase 1 Hydrogeological Drilling Completion Report (BHP 2023c)

- Technical Memorandum Ministers North Conceptual Hydrogeological Model (BHP 2019b)
- FY22 Mick's Bore SUR Phase 2 Hydrogeological Drilling Completion Report (BHP 2023b)
- Yandicoogina Gorge Numerical groundwater modelling (BHP 2023i)
- Central Pilbara Hydrogeological Assessment Groundwater Modelling Peer Review (HydroGeoLogic, 2025)
- GW Operating Strategy for Mining Area C & South Flank v7.1 (BHP, 2025f)
- Memorandum: Yandicoogina Gorge Mitigation Trial 3-Month Summary Report (BHP 2025g)
- Jugari Short-term Trial Groundwater Supplementation Scheme Trigger Action Response Plan (TARP) (BHP 2024i)
- Carbonate Precipitation from Groundwater – Source, Controls and Management (Earth Systems 2023)
- Preliminary PFAS Assessment Mining Area C (Cardno 2022)
- Acid and Metalliferous Drainage Risk Assessment – Mining Area C and South Flank (BHP 2021b)
- Yandicoogina Gorge Mitigation Water Quality Desktop Review (Biologic 2023f)
- Memorandum: Yandicoogina Gorge Mitigation Trial 3-Month Summary Report (BHP 2025f)
- Ministers North Ecohydrology (AQ2 2022)

The inland waters studies were largely consistent with the *Technical Guidance – Inland Waters* (EPA 2018). The EPA considered that the relevant studies are appropriate to inform the assessment of the potential impacts to the above environmental factor.

The EPA sought advice from DWER in relation to the surface and groundwater modelling that was considered as part of this assessment.

2.1.3 Assessment context – existing environment

Surface Water

The combined proposal is located in the Pilbara-Gascoyne Drainage Division within two regional River basins, the Fortescue River and the Ashburton River. The Fortescue River flows west through the Fortescue Marsh, which is listed in the

Directory of Important Wetlands in Australia and is culturally significant to the Traditional Owners of the area. The Ashburton River flows to the north-west, ultimately into the Indian Ocean. Part of the catchment for the Turee Cree East Branch that sits within the broader Ashburton Catchment, accounts for a relatively minor area of the study area (approximately 2%). As such the Ashburton Catchment is unlikely to experience any significant additional impacts as a result of the combined proposal.

The study area for the significant amendment contains three subcatchments. These being the Coondewanna, Weeli Wolli, and Marillana Creek catchments. The current disturbance to these catchments is 6.9%, 6.2% and 0.6% respectively.

The Coondewanna sub catchment has area of approximately 860 km2 and drains internally towards Lake Robinson which lies within the Coondewanna Flats, where it infiltrates and contributes to groundwater recharge.

The Weeli Wolli sub catchment is approximately 1,450 km^2. Two major features of this sub catchment are the Weeli Wolli Spring (WWS) and Ben's Oasis. The Weeli Wolli Spring occurs where there is a natural damming caused by low permeability shale and ironstone and is listed as a Priority 1 PEC. Ben's Oasis (also within the PEC) is a permanent pool in Weeli Wolli Creek that is located approximately 20 km upstream of WWS and occurs as a natural expression of groundwater which mounds upstream of a dolerite dyke. The Weeli Wolli Creek flows north-east and into Fortescue Marsh.

Marillana Creek flows east through the proponent's Yandi Operations until it enters Weeli Wolli Creek. There are some semi-permanent pools upstream of the proponent's Marillana Creek (Yandi) Operations, which are reflections of where relatively impermeable geology impedes flow and causes water to accumulate.

Groundwater

The proposal is located within a complex and highly interconnected regional groundwater system comprising detrital, calcrete and bedrock aquifers that mainly drain toward the Weeli Wolli Creek valley and discharge at WWS.

The study area comprises of the Hamersley Formation overlying Tertiary Detritals. There are two orebody aquifers, these being the Marra Mamba Formation and Brockman Iron Formation. There are also regional aquifers which include the Weathered Paraburdoo Formations and Wittenoom Formation, and also sand, gravel and calcrete deposits in the Tertiary Detritals.

Depth to groundwater across the catchment ranges from 0 – 15 m at WWS, up to 170 m at the South Flank and Packsaddle Deposits. In some areas the regional aquifers are in direct contact with the orebody aquifers, whereas in other areas they are separated by shale formations. This leads to a complex hydrogeological system.

Groundwater quality varies across the study area with pH ranging between 5.7 and 8.0, and EC varying between 340 µS/cm to 1,400 µS/cm.

The proponent has undertaken AMD risk assessments identifying that most waste has a risk rating of low to moderate, with the only exception being the Grand Central deposits with a rating of moderate to high. The proponent also undertook a per- and polyfluoroalkyl substances (PFAS) investigation that did not identify exceedances of regulatory guidelines or ecological 95% species protection limits.

The proponent is currently authorised to abstract up to 37.3 GL/a, regulated through four Section 5C licences (GWL 110044, GWL166389, GWL178477, GWL174613). and dispose of 34.48 GL/a of surplus water, including two Managed Aquifer Recharge (MAR) schemes operating under an EP Act Part V Licence - L7851/2002/6.

Environmental Values

There are a number of environmental values that could potentially be impacted by the significant amendment and subsequent combined proposal. These being:

- Coondewanna Flats, which includes an occurrence of the Coolibah and Mulga woodland over lignum and tussock grass on clay plain PEC (P3). This area provides groundwater recharge which feeds through to Weeli Wolli Spring.
- Lake Robinson, that lies within the Coondewanna Flats, which contains the only known occurrence of the Coolibah woodlands over lignum over swamp wandiree PEC (P1).
- Weeli Wolli Spring PEC (P1), including Ben's Oasis, which has been impacted by reductions in groundwater levels and is currently maintained through artificial discharge from Rio Tinto's Hope Downs operations. Weeli Wolli Creek and Ben's Oasis support groundwater dependent vegetation.
- Marillana Creek and associated pools. A series of semi-permanent to permanent pools which lie downstream of the proposed Marillana discharge location and upstream of the proponent's Yandi Mine. These pools contain aquatic communities and groundwater dependent vegetation.
- Yandicoogina Gorge, which contains series of seeps and pools which support groundwater dependent vegetation and extend for approximately 3.5 km along the gorge as well as potentially, the Priority 2 PEC 'Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara.

- Karijini National Park is located about 17 km to the west of the development envelope. Groundwater levels are approximately 60 – 80 metres below ground level.

Key inland water features in proximity to the development envelope are presented in Figure 4.

2.1.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the Request for Additional Environmental Information (dated 10 July 2025 and 10 December respectively) and revised Environmental Review Document (BHP 2025).

The key issues raised and how they have been considered in the assessments are described in the following sections. Matters relating to potential impacts on subterranean fauna from changes in groundwater regimes are addressed in section 2.4.

2.1.5 Potential impacts from the proposal

The significant amendment has the potential to significantly impact on inland water as a result of:

- changes to groundwater regimes from groundwater abstraction for mine dewatering (direct)
- changes to groundwater regimes from MAR/supplementation schemes (mounding) (direct)
- connection of aquifers due to drilling (direct)
- changes in groundwater quality from MAR/supplementation schemes (direct)
- changes to surface water regimes from the discharge of surplus water (direct)
- changes to surface water quality from surplus water discharge to creek (direct)
- changes in surface water flow regime and quality due to catchment diversion (direct)
- mounding in aquifers associated with Marillana Creek discharge (Upper and Lower) (direct)
- changes to surface water and groundwater quality from mining activities (indirect)

- increased sediments in surface water from infrastructure and drainage (indirect)
- changes in surface water quality in Yandicoogina Gorge Pools due to the Yandicoogina GDE Supplementation Scheme (indirect).

2.1.6 Avoidance measures

The proponent has designed the proposal to avoid impacts to inland waters by continuing to implement the avoidance measures for the approved proposal in the Central Pilbara Water Resource Management Plan (CPWRMP). The CPWRMP was conditioned under MS 1072 and is the framework by which the impacts associated with the approved proposal have been managed.

2.1.7 Minimisation measures (including regulation by other DMAs)

In addition to implementing the management framework of the CPWRMP, the proponent has proposed the following additional measures to minimise impacts to inland waters, from the proposal:

- Revise the CPWRMP to include further information on monitoring triggers and thresholds for management of environmental receptors, including Karijini National Park, Marillana Creek and Yandicoogina Gorge.
- Install groundwater bores consistent with guideline requirements and best practice.
- Use of groundwater (dewatering) consistent with water use hierarchy in order of priority: environmental water requirements, operational use, MAR, and creek discharge.
- Use of MAR to minimise any groundwater regime changes that may impact the extent of Weeli Wolli Spring PEC (Weeli Wolli Springs and Ben's Oasis occurrence) and Coondewanna Flats PEC.
- Implement a 90-day drying period for the Upper Marillana Creek discharge and a wetting front limit reaching the confluence of the tributary with Marillana Creek to reduce mounding in the underlying aquifer and extent of wetting front.
- Limit operational duration of creek discharge schemes to a five-year period.
- Implementation of calcium carbonate treatment system to prevent precipitate build-up in proposed creek discharge.
- Construction of creek crossings consistent with best management practices for avoiding erosion and sedimentation.

- Engineering design of Grand Central Overburden Storage Area (GCOSA) diversion structure to reduce flood inundation, erosion and sedimentation.
- Implement and optimise MAR schemes to mitigate impacts to WWS from dewatering post-closure of Rio Tinto Iron Ore's (RTIO) Hope Downs Operations.

Rights in Water and Irrigation Act 1914

The combined proposal is located in a proclaimed groundwater area under the *Rights in Water and Irrigation Act 1914* (RiWI Act). The proponent has groundwater licences (GWL110044, GWL166389, GWL178477, GWL174613) that regulate the approved proposal that include conditions intended to mitigate impacts of taking water and describe how the water resource must be monitored and managed. To increase the approved groundwater abstraction rates associated with the significant amendment from 37.3 GL/a to 65.7 GL/a the proponent would be required to obtain or amend approvals under the RiWI Act.

In accordance with the RiWI Act, a Ground Water Operating Strategy (GWOS) will be required as part of the groundwater licence, which includes monitoring, management and reporting requirements to ensure that the groundwater abstraction and drawdown can be monitored and managed. The proponent will seek an amendment to the proposal's 5C licence to increase the abstraction entitlement and will update the Operating Strategy.

Part V, Division 3 of the EP Act

To manage the emissions and discharges during construction and operation of the proposal, the proponent is required to obtain a works approval and licence under Part V of the EP Act. For activities that may impact on inland waters, it would be Category 6 (Mine Dewatering) that would be relevant.

A Works Approval and Licence amendment under Part V of the EP Act will be required to facilitate these additional mine activities, specifically through the amendment to Category 6 of the licence. A water quality management plan can be required under the Part V licence that includes quarterly water quality monitoring at emission point of surplus dewatering water, when discharging or reinjecting.

2.1.8 Rehabilitation measures

The proponent has proposed the following rehabilitation measures associated with inland waters:

- Backfilling of mine voids at Northern Flank and Highway Deposit (at South Flank) to 5 m above pre-mining groundwater levels to prevent the formation of

pit lakes to be undertaken at closure, further development of backfill of South Flank mine subject to future assessment.

- Rehabilitation at closure consistent with the Mine Closure Plan.

2.1.9 Assessment of impacts to environmental values

Surface Water

The combined proposal is located in the Pilbara-Gascoyne Drainage Division within two regional River basins, the Fortescue River and the Ashburton River. The Fortescue River flows west through the Fortescue Marsh, which is listed in the Directory of Important Wetlands in Australia and is culturally significant to the Traditional Owners of the area. The Ashburton River flows to the northwest, ultimately into the Indian Ocean. Part of the catchment for the Turee Cree East Branch that sits within the broader Ashburton Catchment, accounts for a relatively minor area of the study area (approximately 2%). As such, the Ashburton Catchment is unlikely to experience any significant additional impacts as a result of the combined proposal.

The study area for the significant amendment contains three subcatchments. These being the Coondewanna, Weeli Wolli, and Marillana Creek catchments. The current disturbance to these catchments is 6.9%, 6.2% and 0.6% respectively.

The Coondewanna subcatchment has an area of approximately 860 km^2 and drains internally towards Lake Robinson, which lies within the Coondewanna Flats, where it infiltrates and contributes to groundwater recharge.

The Weeli Wolli sub catchment is approximately 1,450 km^2. Two major features of this subcatchment are the Weeli Wolli Spring and Ben's Oasis. The Weeli Wolli Spring occurs where there is a natural damming caused by low permeability shale and ironstone and is listed as a Priority 1 PEC. Ben's Oasis (also within the PEC) is a permanent pool in Weeli Wolli Creek that is located approximately 20 km upstream of WWS and occurs as a natural expression of groundwater which mounds upstream of a dolerite dyke. The Weeli Wolli Creek flows northeast and into Fortescue Marsh.

Marillana Creek flows east through the proponent's Yandi Operations until it enters Weeli Wolli Creek. There are some semi-permanent pools upstream of the proponent's Marillana Creek (Yandi) Operations, which are reflections of where relatively impermeable geology impedes flow and causes water to accumulate.

Groundwater

The significant amendment is located within a complex and highly interconnected regional groundwater system comprising detrital, calcrete and bedrock aquifers that

mainly drain toward the Weeli Wolli Creek valley and discharge at Weeli Wolli Spring.

The combined proposal area comprises the Hamersley Formation overlying Tertiary Detritals. There are two orebody aquifers, these being the Marra Mamba Formation and Brockman Iron Formation. There are also regional aquifers which include the Weathered Paraburdoo Formations and Wittenoom Formation, and sand, gravel and calcrete deposits in the Tertiary Detritals.

Depth to groundwater across the catchment ranges from 0 – 15 m at Weeli Wolli Spring, up to 170 m at the South Flank and Packsaddle Deposits. In some areas the regional aquifers are in direct contact with the orebody aquifers, whereas in other areas they are separated by shale formations. This leads to a complex hydrogeological system. Groundwater quality varies across the study area with pH ranging between 5.7 and 8.0, and Electrical Conductivity (EC) varying between 340 micro-Siemens per centimetre (µS/cm) to 1,400 µS/cm.

The proponent has undertaken Acid Mine Drainage (AMD) risk assessments identifying that most waste has a risk rating of low to moderate, with the only exception being the Grand Central deposits with a rating of moderate to high. The proponent also undertook a PFAS investigation that did not identify exceedances of regulatory guidelines or ecological 95% species protection limits.

The proponent is currently authorised to abstract up to 37.3 GL/a, regulated through four section 5C licences (GWL 110044, GWL166389, GWL178477, GWL174613) and dispose of 34.48 GL/a of surplus water, including two Managed Aquifer Recharge (MAR) schemes operating under an EP Act Part V Licence - L7851/2002/6.

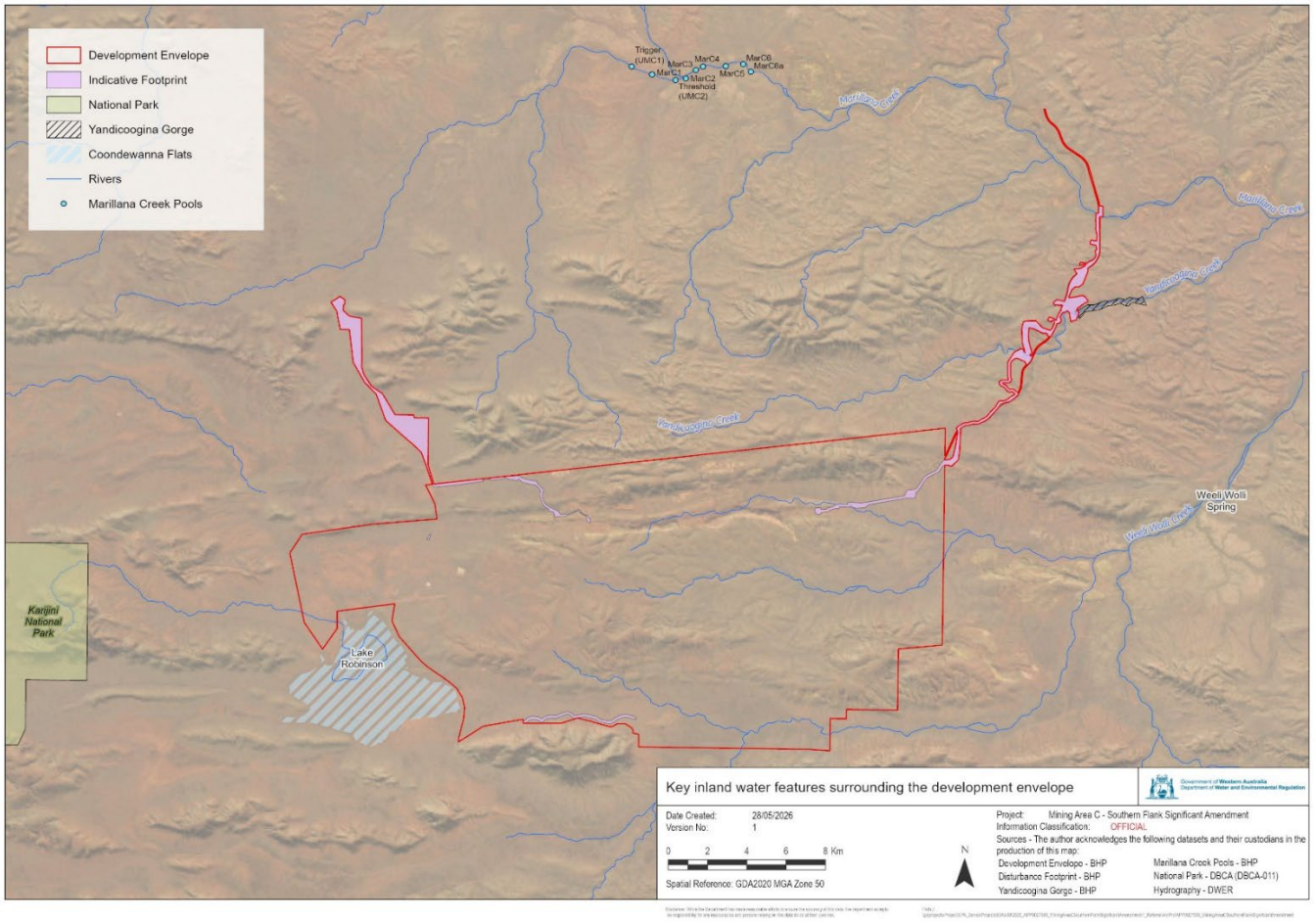

Figure 4: Key inland water features surrounding the development envelope

Groundwater drawdown

The proponent has indicated that the additional dewatering and abstraction associated with the combined proposal would result in the 1 m drawdown contour extending 21 km east, 5 km south, and 22 km west of the development envelope, with the northern extent remining within the development envelope.

Modelling for the approved Proposal, provided by the proponent, predicted drawdown at Weeli Wolli Spring of between 3 m – 14 m up to 2045, and 1 m - 2.5 m after 2045. More recent modelling predicts a drawdown up to 2045 of between 2.4 m - 5.6. This includes drawdown from Rio Tinto mining activities. The proponent has undertaken modelling that indicates the combined proposal would contribute to 13% (0.4 m) of the total drawdown, and that expected drawdown up to 2045 remains within limits of the approved proposal (3 m – 14 m).

The EPA notes advice from DWER indicating that impacts to Weeli Wolli Spring represents the key receptor at risk, with predicted reductions in groundwater levels, baseflow and throughflow posing a risk to the long-term ecohydrological function of the spring and the extent of the associated PEC. The groundwater contours predicted at Weeli Wolli Spring from the combined proposal are shown in Figure 6.

The EPA notes that Weeli Wolli Spring is impacted by multiple parties and that the combined proposal will be responsible for a relatively minor contribution to drawdown at that location. The cumulative impacts require coordinated management between BHP and RTIO and joint decision-making.

While information provided indicates that groundwater levels at Weeli Wolli Spring are partially sustained during operations through existing mitigation, the greatest risk occurs following the closure of RTIO Hope Downs, when artificial support is reduced and drawdown migration from upgradient compartments becomes more influential.

The EPA notes that the proponent's modelling indicates that the risk of impacts to Ben's Oasis may be reduced due to the presence of dolerite dyke that provides a relatively impermeable barrier, and that information relating to Rio Tinto's Hope Downs 2 operation indicated low permeability units around Ben's Oasis which are likely to reduce impacts from drawdown. The groundwater contours predicted at Ben's Oasis from the combined proposal are shown in Figure 7.

The impact of the combined proposal on Weeli Wolli Spring and Ben's Oasis is unlikely to be significantly different from the approved proposal.

The CPWRMP includes monitoring of tree health within the Weeli Wolli Spring PEC and at Ben's Oasis, along with monitoring of waters at both sites in conjunction with Rio Tinto. The plan also includes commitments to ongoing collaboration with Rio Tinto.

The Yandicoogina GDE Supplementation Scheme is the highest priority for use of surplus water and is aimed at maintaining groundwater at levels previously recorded in 2018 and is intended to contribute to mitigating the impacts on Yandicoogina Gorge. Groundwater levels at the permanent pool in Yandicoogina Gorge have reduced approximately 1 m since 2020, causing a decline in groundwater dependent vegetation health and some tree deaths. The cause of the reduction in levels has not been definitively identified (reductions may be as a result of climate variability and/or dewatering of the channel iron deposit (CID)), however the proponent is currently investigating and taking actions to mitigate further impacts, including a supplementation trial. The proponent is liaising with the Banjima Traditional Owners, Rio Tinto, and regulators to mitigate further decline in groundwater levels. The groundwater contours predicted at Yandicoogina Gorge from the combined proposal are shown in Figure 8.

The CPWRMP has been revised to contain measures to monitor groundwater levels within the Yandicoogina Gorge along with the nearby Ministers North aquifer, as well as monitoring surface water levels in permanent and semi-permanent pools.

The approved proposal predicted drawdown beneath Coondewanna Flats of between 8 m to 22 m. The combined proposal will increase this drawdown to up to 110 m at its eastern edge and 40 m – 60 m at its western edge. This increase in drawdown is unlikely to cause additional impacts to Coondewanna Flats as the PECs are not groundwater dependent. The groundwater contours predicted at Coondewanna Flats from the combined proposal are shown in Figure 9.

The proponent predicted unmitigated drawdown of up to 2.5 m beneath the eastern edge of Karijini National Park. The approved proposal predicted drawdown of up to 1 m. However, the proponent has committed to preventing drawdown reaching the National Park. The groundwater contours predicted at Karijini National Park from the combined proposal are shown in Figure 10.

Monitoring and early warning triggers and thresholds are included to prevent groundwater drawdown reaching Karijini to refine the modelling and are included in the CPWRMP.

Given the conservation significance of the environments with the potential to be impacted by groundwater drawdown, the EPA considers that an outcome-based condition is warranted to ensure that there are no adverse impacts on Weeli Wolli Spring, Ben's Oasis, Yandicoogina Gorge, and Karijini National Park (Condition B1-1).

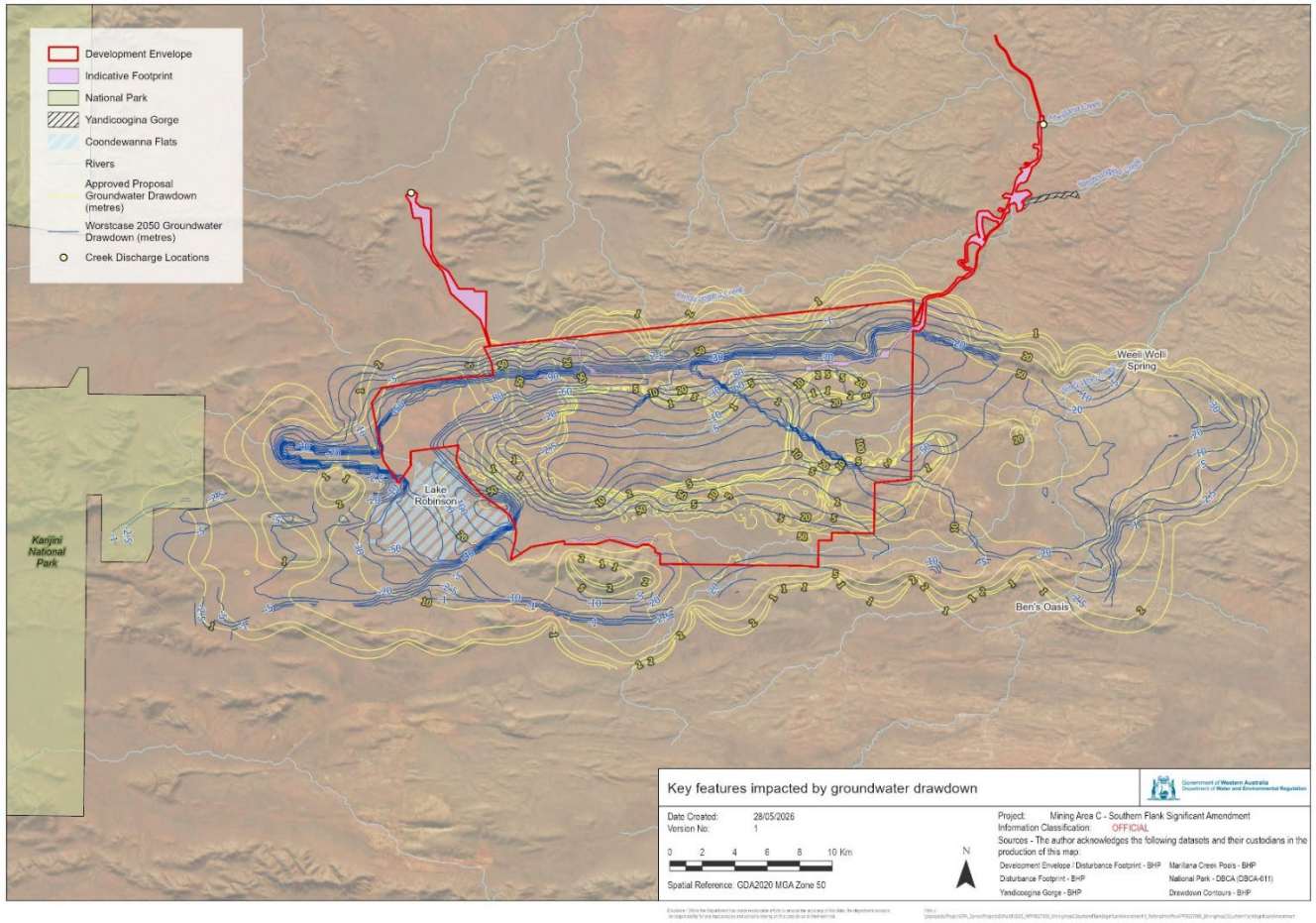

Figure 5: Key inland water features impacted by groundwater drawdown

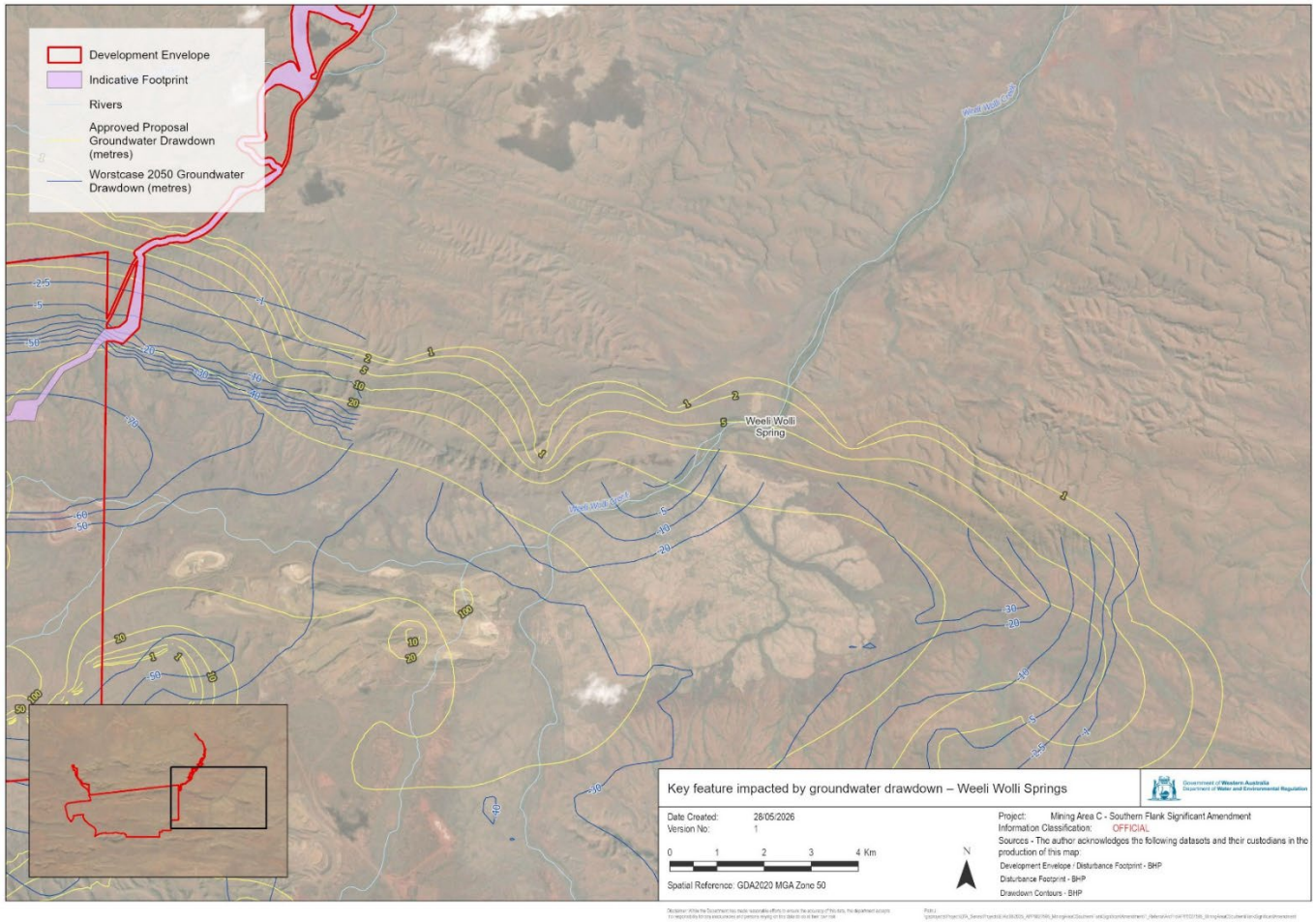

Figure 6: Key feature – impacted by groundwater drawdown – Weeli Wolli Springs

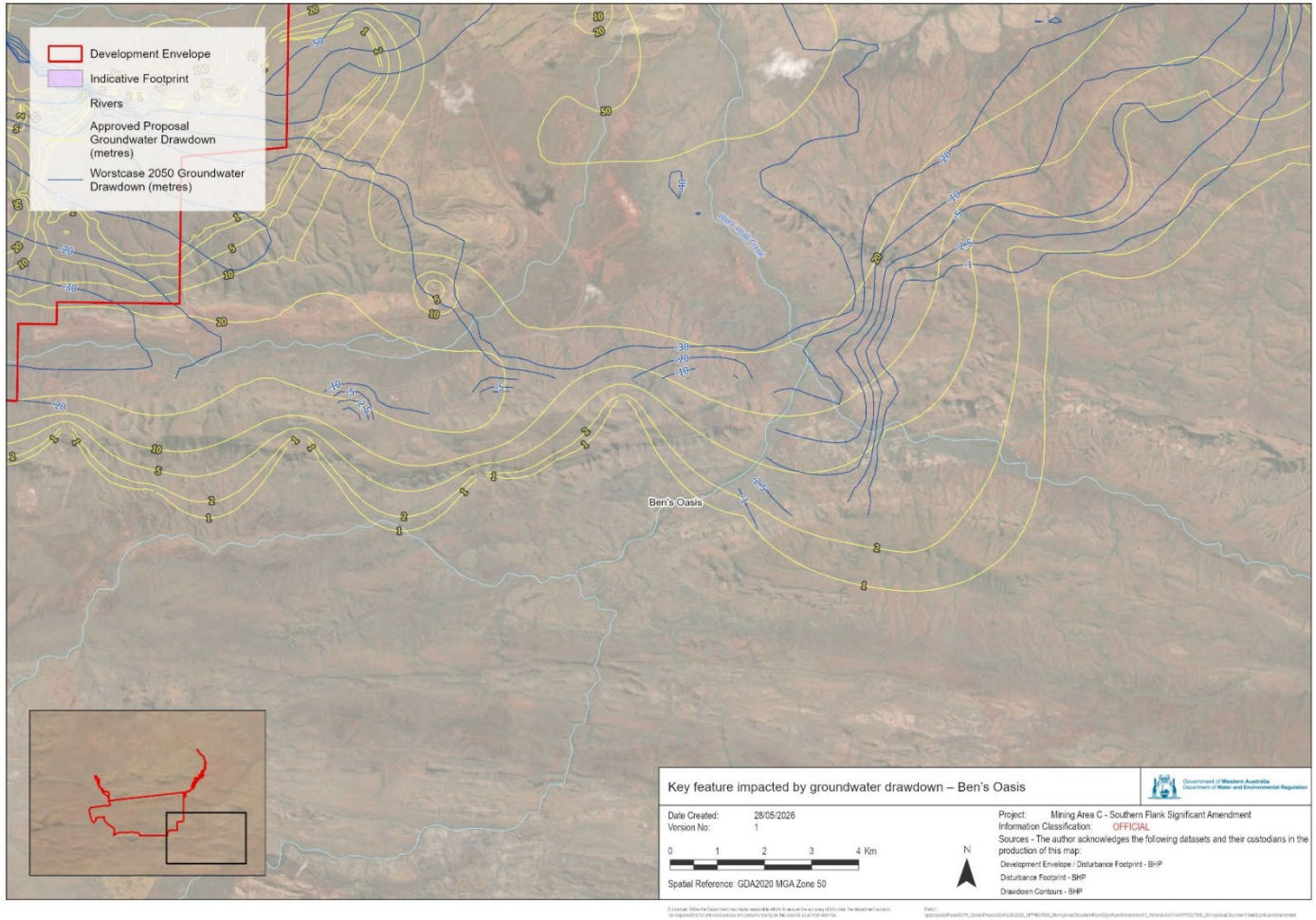

Figure 7: Key feature – impacted by groundwater drawdown – Ben's Oasis

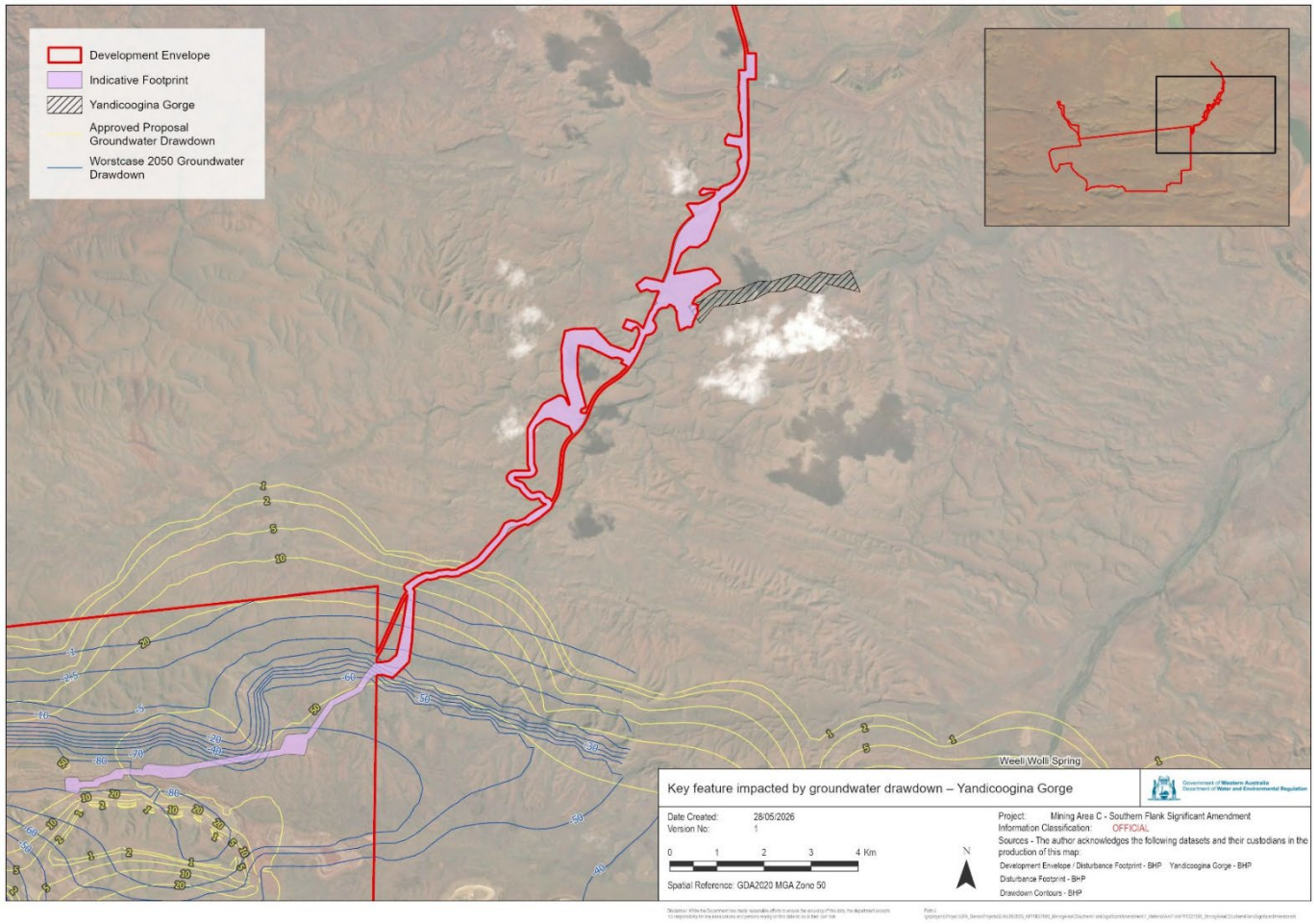

Figure 8: Key feature – impacted by groundwater drawdown – Yandicoogina Gorge

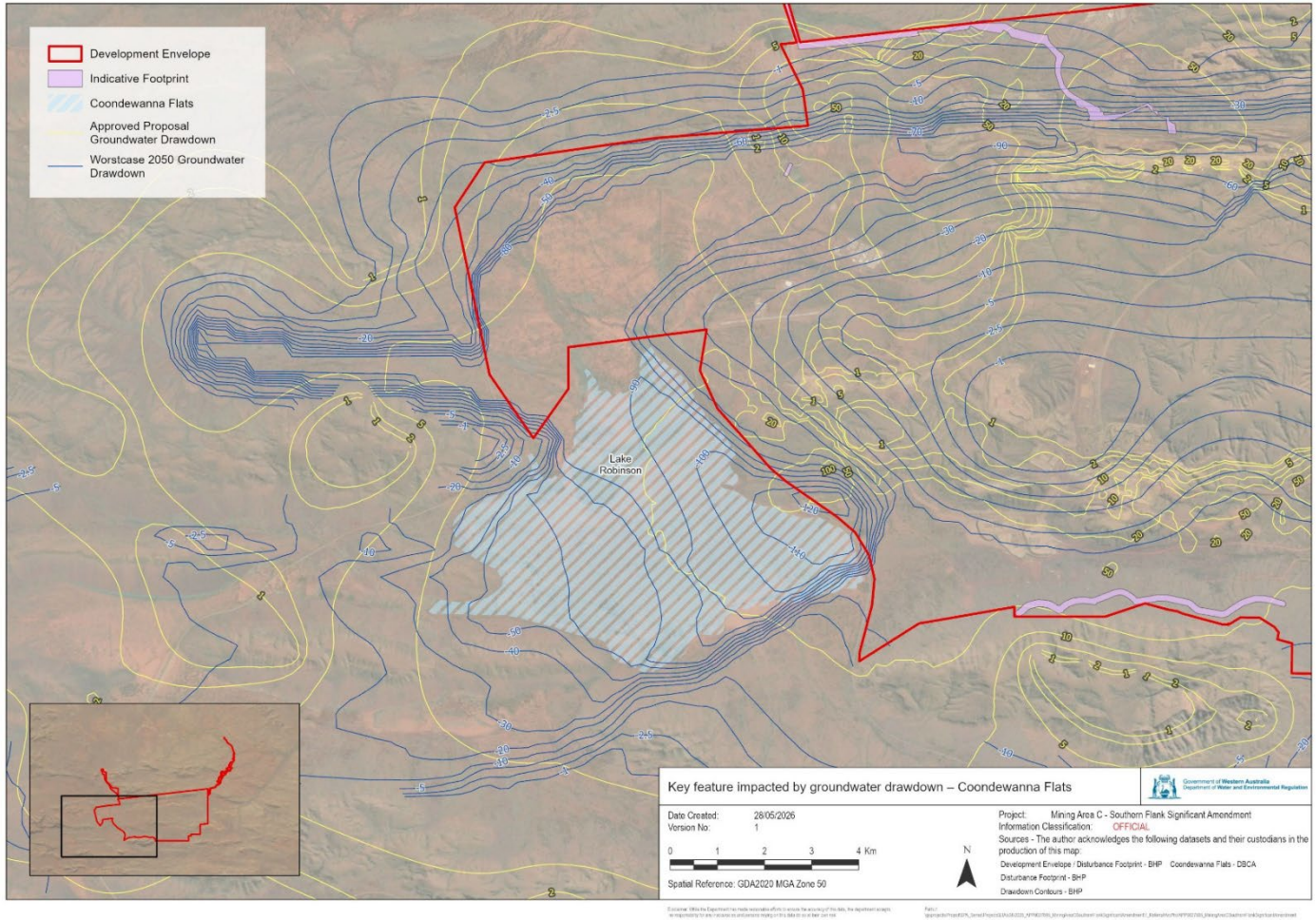

Figure 9: Key feature – impacted by groundwater drawdown – Coondewanna Flats

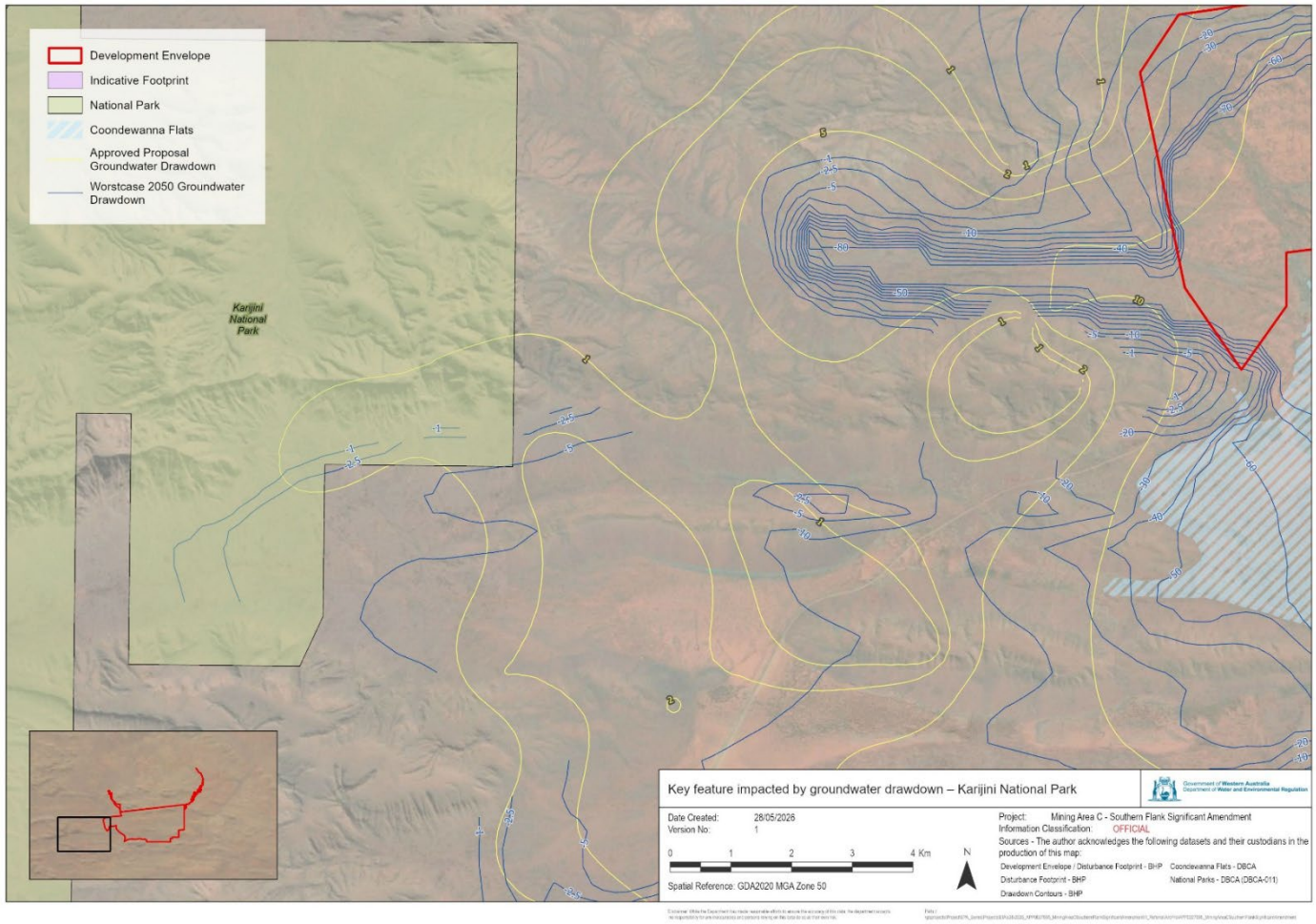

Figure 10: Key feature – impacted by groundwater drawdown – Karijini National Park

Groundwater mounding

The EPA notes the proponent intends to implement a water management strategy to minimise discharge volumes which includes:

- Supplying up to 10ML/d to Yandicoogina Gorge to meet environmental water requirements.
- Supplying 15 ML/d for operational use for the approved proposal and also the proposed Minister's North mine.
- Reinjection and infiltration back into the aquifer.

This is in addition to the ongoing implementation of the CPWRMP.

After supplementation of Yandicoogina Gorge and use for mining operations, the proponent would use MAR. The proponent operates Juna Down and South Flank MAR Schemes, and the Runaway Valley Infiltration Ponds as part of the approved proposal and proposes to develop the Northern RAV MAR and Yandicoogina Supplementation Schemes as part of the significant amendment (Figure 3).

The Juna Downs and South Flank MAR Schemes and Runaway Valley Infiltration Ponds are regulated through EP Act Licence L7851/2002/6. The proponent does not intend apply to change these schemes and consequently the EPA considers that they are unlikely to contribute to any additional impacts as part of the combined proposal.

Modelling for the Northern RAV MAR Scheme provided by the proponent indicates a high probability that mounding will rise to 10 mbgl between 2 – 5 years from commencement of reinjection depending on reinjection rates. This mounding has the potential to impact on 162 ha of vegetation within Coondewanna Flats. The groundwater contours predicted at Coondewanna Flats from the combined proposal are shown in Figure 9, and the groundwater contours predicted at Coondewanna Flats from the combined proposal are shown in Figure 11. The EPA notes that five of the vegetation associations occur in the impacted area containing deep-rooted species such as *Eucalyptus xerothermica*, *Eucalyptus leucophloia subsp. leucophloia* or *Eucalytpus victrix*, which may be impacted or lost by groundwater mounding caused by the proposal. None of the impacted vegetation associations are considered regionally or locally significant and the deep-rooted species are not considered reliant on groundwater. The vegetation provides foraging habitat for significant species. The EPA notes that the proponent does not expect this mounding to extend to Karijini National Park.

These MAR Schemes will require a Works Approval prior to their construction and ultimately be included in EP Act Licence L7851/2002/6.

Bores required to implement the MAR Schemes will require a 26D Licence under the RiWI Act to ensure they are properly constructed and do not cause unintended environmental impacts.

The EPA considers that regulation through EP Act Licence L7851/2002/6 and RiWI Act 26D licences, along with implementation of the CPWRMP are sufficient to ensure that its objective for inland water can be met.

Given the conservation significance of the potential impacts on Coondewanna Flats by groundwater mounding, the EPA considers that an outcome-based condition is warranted to ensure that there are no adverse impacts on the PECs that occur on Coondewanna Flats (Condition B1-1).

The EPA also considers that the potential impact on 162 ha of vegetation that provides foraging habitat for significant species and contains mature eucalypt trees is a significant residual impact and will require an offset and has included this as part of the recommended offset condition (Condition B8).

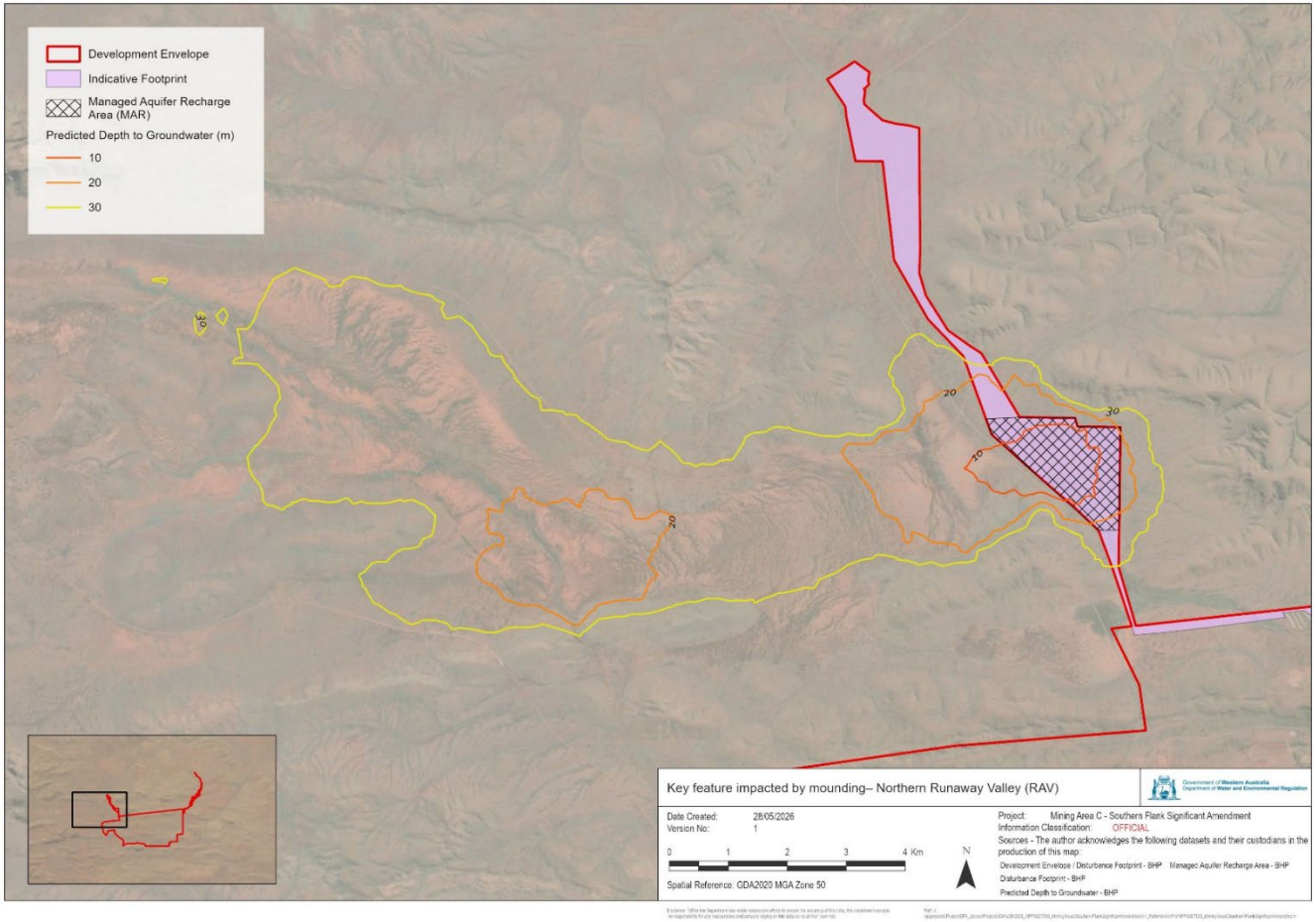

Figure 11: Key feature – impacted by mounding – Northern Runaway Valley

Modification of surface water regimes

The EPA notes that the proponent intends to implement a water management strategy, to minimise discharge volumes, that includes discharge to Upper and Lower Marillana Creeks, as a contingency surplus water management method:

- Upper Marillana Creek Discharge (up to 30 ML/d, with 90-day no discharge in dry season with maximum 5-year operating life and maximum wetting front extent of 27 km), as shown in Figure 12
- Lower Marillana Creek Discharge (up to 30 ML/d, with 90-day no discharge in dry season with maximum 5-year operating life), as shown in Figure 13.

Periodic discharge to Marillana Creek of up to 30 ML/d for up to 90 days is proposed as part of the significant amendment. This discharge, at a point approximately 4 km from the intersection of the Upper Marillana Creek and the Yandi Access Road, will be greatest during the first five years of operation as the other discharge schemes will not have sufficient capacity to absorb all of the surplus water.

The unmitigated wetting front for the maximum proposed discharge rate of 30 ML/d is predicted to reach 24 km based on five years of discharge and 27 km based on 10 years of discharge and would therefore impact Pool MarC1 at Flat Rocks (a series of semi-permanent pools in Marillana Creek). The proponent has committed to manage discharge rates to control the extent of the wetting front. The CPWRMP includes monitoring of the wetting front extent, tree health within the wetting front extent, and water levels in MarC1 to ensure there is no impact on the GDE at MarC1.

As part of the approved proposal, there is a discharge point at Pebble Mouse Creek, however this is only used for emergency releases, and is regulated through L7851/2002/6, along with discharge to the Central and Western Sediment Basins, which are also contingencies in the event that emergency releases are necessary.

Additional surface water management structures are proposed including diversions, bunds and floodways at South Flank to protect the GCOSA. Coondewanna Flats is the nearest receptor and modelling provided by the proponent indicates that these structures will reduce the catchment by 0.55%. The EPA considers that this reduction is unlikely to have a significant impact on Coondewanna Flats.

The EPA considers that regulation through EP Act Licence L7851/2002/6 along with implementation of the CPWRMP are sufficient to ensure that its objective for inland water can be met.

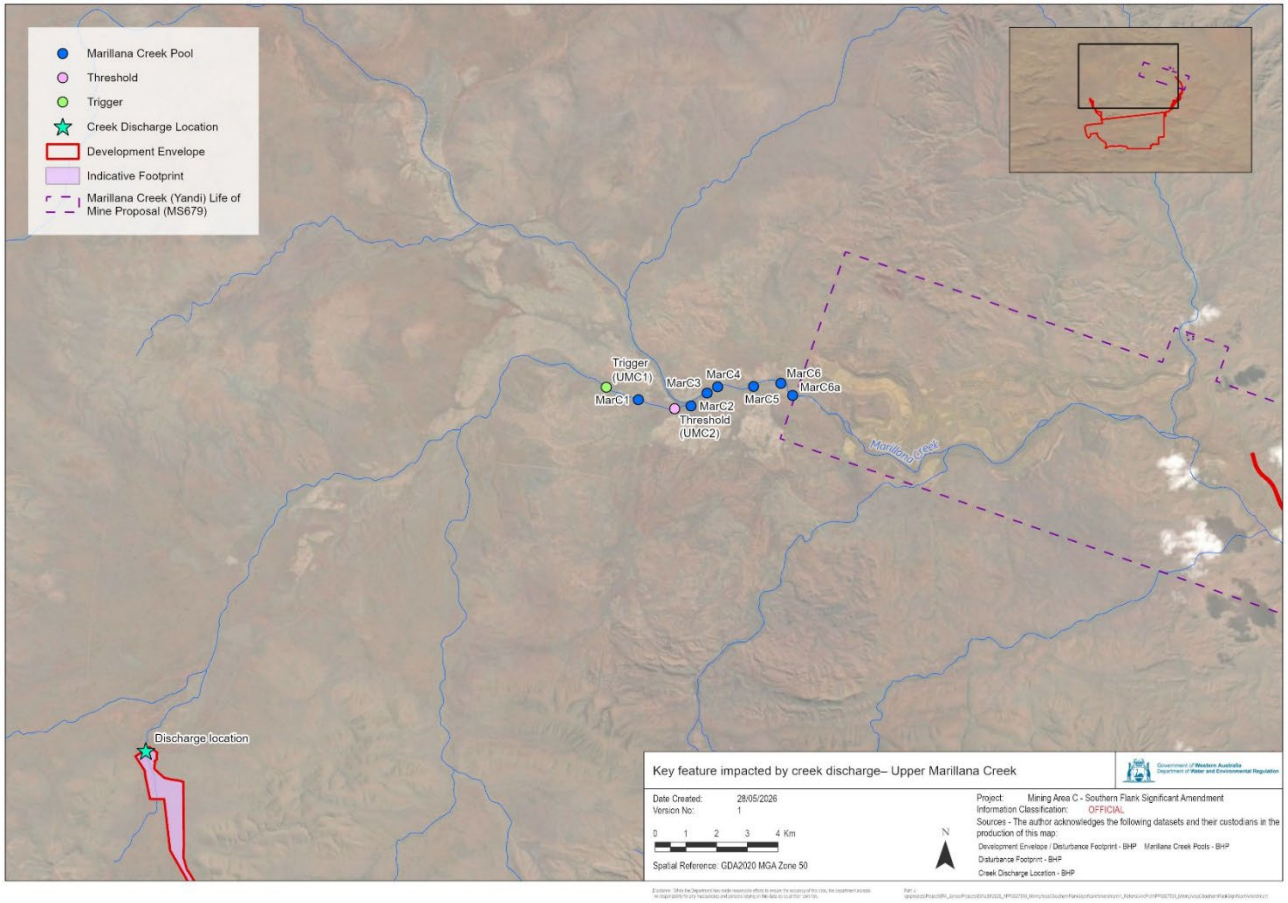

Figure 12: Key feature – impacted by creek discharge – Upper Marillana Creek

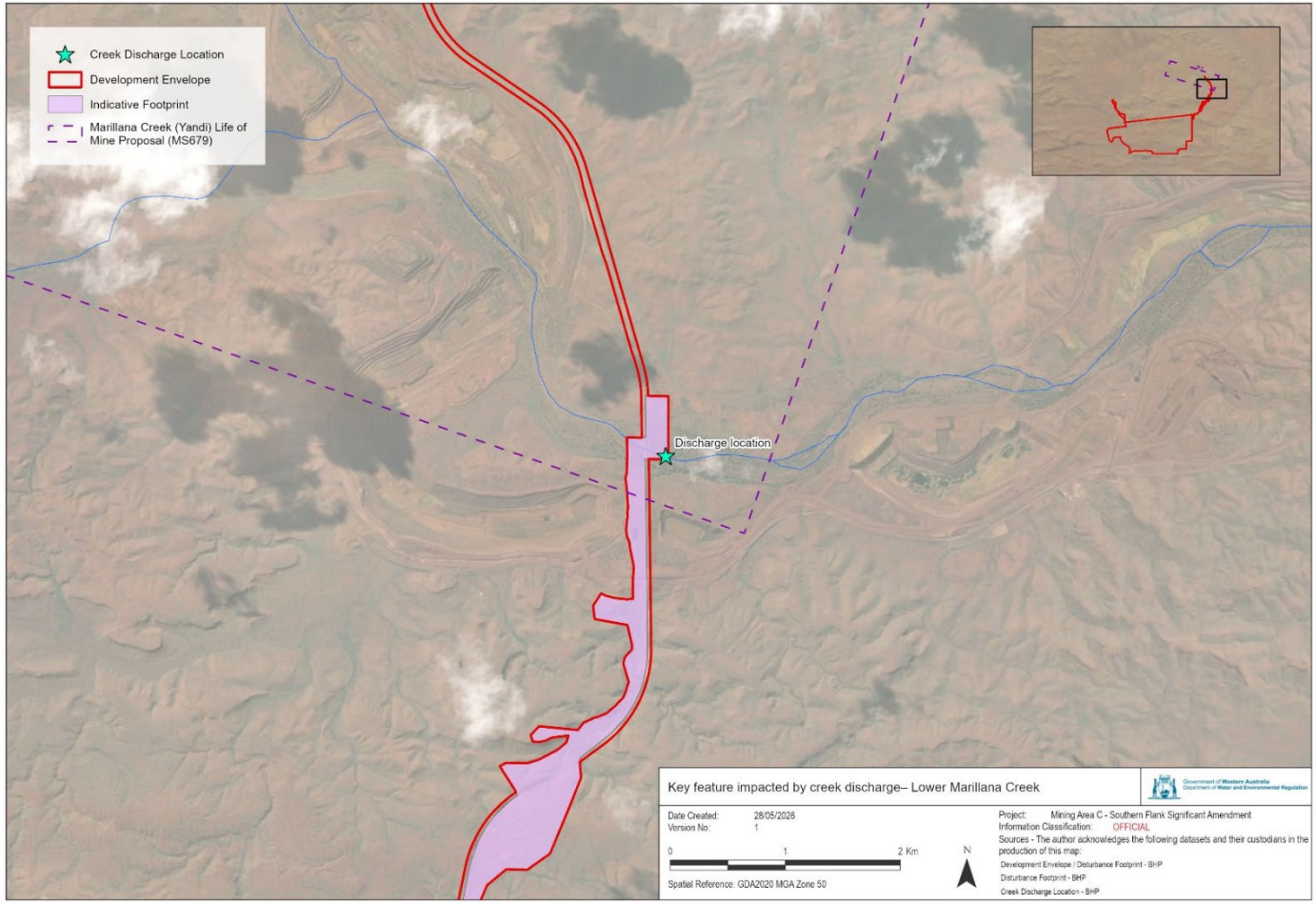

Figure 13: Key feature – impacted by creek discharge – Lower Marillana Creek

Decline in water quality

The proponent has indicated that the Northern RAV MAR has the potential to impact water quality of the receiving aquifers. The proposal also has the potential to impact surface water through the release of contaminants through spills.

The proponent has identified that using water from a separate aquifer has the potential to impact water quality at Yandicoogina Gorge and undertook a comparison which found that water quality at Yandicoogina Gorge was similar to that of groundwater being abstracted at MAC, with higher concentrations of nitrates at MAC being the main difference. Further to this groundwater quality monitoring has been undertaken as part of the Short-term Groundwater Supplementation Trial which showed no significant impacts.

The EPA notes that these potential impacts to water quality are managed through EP Act Licence L7851/2002/6 and the CPWRMP and considers this is adequate to ensure its objectives for inland waters are met.

Rehabilitation and mine closure

The proponent intends to backfill the pits at North Flank and Highway Deposit at South Flank to at least 5 m above the pre-mining water level (D deposit and F deposit have already been backfilled to pit crest). Backfilling of pits at Highway deposit at South Flank is required as part of the approved proposal.

The proponent has modelled (BHP 2024) recovery of groundwater and has modelled rebound with all pits backfilled, and with all pits being backfilled except for South Flank pits Vista Oriental and Grand Central. The proponent expects recovery of groundwater levels to vary over different parts of the development envelope due to the variable hydrogeology, with recovery being more rapid in the area of Weeli Wolli Spring and the Hope Downs aquifer and potentially taking hundreds of years in other areas. The proponent intends to develop the closure strategy for South Flank as part of mine closure planning with Traditional Owners and relevant stakeholders.

The EPA considers that the impact of the significant amendment, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for inland waters, and considers that an outcome-based condition for rehabilitation is warranted (Condition B6).

Cumulative impacts

The assessment of cumulative impacts of groundwater abstraction from the combined proposal in the above sections has incorporated water abstraction from Rio Tinto's neighbouring Hope Downs 1 operation. To summarise:

- groundwater drawdown of between 23 and 64 m beneath Coondewanna Flats is 100% attributable to the combined proposal
- groundwater drawdown of between 13 and 21 m east of the dyke separating Ben's Oasis and Hope Downs groundwater compartment. 3.1 m (19%) of this drawdown is attributable to the combined proposal
- groundwater drawdown between 2.4 and 5.6 m at Weeli Wolli Springs up to 2045. This increases to between 11.4 and 13.4 m beyond 2045. Of this, 3.5 m (28%) is attributable to the combined proposal.

The assessment of cumulative impacts of changes to surface water regimes has incorporated the combined proposal as well has Rio Tinto's Hope Downs 2 operation. To summarise:

- there will be a small reduction in the catchment area of Coondewanna Flats, however, surface runoff into the catchment is expected to be maintained in historic ranges
- there will be a 1.2 % (48.5 km^2) reduction in catchment area to the Weeli Wolli Spring and creek system. This reduction will be within 5% of natural variation of seasonal rainfall runoff.

The EPA is of the view that the environmental outcome as a result of cumulative impacts is likely to be consistent with the EPA objective for inland waters, subject to the recommended conditions.

2.1.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the significant amendment on inland waters environmental values, including:

- Coondewanna Flats occurrence of the Coolibah and Mulga woodland over lignum and tussock grass on clay plain PEC
- Lake Robinson occurrence of the Coolibah woodlands over lignum over swamp wandiree PEC
- Weeli Wolli Spring PEC, including Ben's Oasis
- Marillana Creek and associated pools
- Yandicoogina Gorge
- Karijini National Park.

In its assessment, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 2.

The EPA advises that the significant residual impact can be regulated through reasonable conditions (recommended conditions A1 and B1) and counter-balanced by offsets (recommended condition B8) so that the Coondewanna Flats, Lake Robinson, Weeli Wolli Spring PEC, including Ben's Oasis, Marillana Creek and associated pools, Yandicoogina Gorge, and Karijini National Park are protected, and the environmental outcome is consistent with the EPA objective for inland waters.

The EPA has also recommended condition B1-4, which requires the proponent to develop a long-term strategy to achieve outcomes stated in B1-1. Part of this requirement is the development of a water balance to demonstrate the proponent's contribution to changes in baseflow and surface water flows and assess cumulative impacts to Weeli Wolli Springs.

The EPA has had regard to its conclusions in other recent assessments, including Marillana Creek (Yandi) Life of Mine Proposal.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 2: Summary of assessment for inland waters

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1.	Modification of surface water regimes	The impacts to pools on Marillana Creek can be avoided through the control of discharge and monitoring the extent of the wetting front. Reduction of 0.55% in catchment draining to Coondewanna Flats.	**Condition A1 (Limitations and extent of proposal)** **Condition B1 (Inland Waters)** No adverse impacts to Coolibah-lignum PEC in Coondewanna Flats, no reduction to Coolibah and mulga woodland in Coondewanna Flats, wetting front extent limit to Upper Marillana Creek discharge, no adverse impacts to riparian vegetation in Upper Marillana Creek.
2.	Groundwater drawdown	Drawdown associated with the combined proposal will not	**Condition A1 (Limitations and extent of proposal)**

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
		significantly increase levels of drawdown from the approved proposal Groundwater recovery to be monitored through the Mine Closure Plan.	Groundwater abstraction limit. **Condition B1 (Inland Waters)** No adverse impacts to Weeli Wolli Springs PEC at Weeli Wolli Springs and Ben's Oasis, no reduction to groundwater levels in Karijini National Park. Development of water balance. **DMA regulation** Licensing of water abstraction under the RiWI Act.
3.	Groundwater mounding	Mounding as a result of the Northern RAV MAR Scheme will cause groundwater levels to rise to approximately 10 mbgl. This will impact 162 ha of vegetation. Offsets are required to counterbalance the significant residual impacts to eucalyptus trees and critical and supporting habitat for conservation significant fauna across the Pilbara bioregion.	**Condition A1 (Limitations and extent of proposal)** **Condition B1 (Inland Waters)** Restriction of groundwater mounding in Northern RAV to 10 mbgl. Development of water balance. **Condition B8 (Offsets)** Contribution to the Pilbara Environmental Offsets Fund for clearing conservation significant fauna habitat where required.
4.	Decline in water quality	Water from a separate aquifer has the potential to impact water quality at Yandicoogina Gorge, however the water quality at Yandicoogina Gorge is similar to abstracted water from MAC. Groundwater is monitored ongoing through licensing.	**Condition A1(Limitations and extent of proposal)** **DMA regulation** Licensing of water discharge through Part V, Division 3 of the EP Act.

2.2 Flora and Vegetation

2.2.1 Environmental objective

The EPA environmental objective for flora and vegetation is to protect flora and vegetation so that biological diversity and ecological integrity are maintained (EPA 2016X).

2.2.2 Investigations and surveys

The EPA advises the investigations and surveys used to inform the assessment of the potential impacts to flora and vegetation from the significant amendment are provided in Appendix E.

A total of 50 flora and vegetation surveys were conducted partially or wholly within the development envelope. These comprise of 31 detailed surveys, 12 targeted surveys, four reconnaissance and three desktop assessments. The proponent has provided a summary of all flora and vegetation surveys that are relevant to the significant amendment, which is included as Appendix 10 of the revised Environmental Review Document (BHP 2025).

The surveys are not entirely consistent with the Technical Guidance – Flora and vegetation surveys for environmental impact assessment (EPA 2016b). Survey effort was not quantifiable with multiple surveys conducted across and adjacent to the development envelope used for the impact assessment by the proponent. A small portion of the development envelope remains unsurveyed. The proponent states “some periphery areas of the development envelope have minimal or no survey information available due to survey boundary misalignment and age of surveys” and “these areas account for less than 0.1% of the Development Envelope" (BHP 2025). Additionally, the EPA notes the traverse distances of up to 75 m each side of a traverse is not an appropriate distance to observe significant flora species of cryptic, rare and small nature.

The EPA determined it could proceed with its assessment of the significant amendment when considering the information provided in the response to request for further information, revised Environmental Review Document (BHP 2025), and relevant appendices, combined with the limited clearing proposed for the proposal and historical and current disturbance from mining in the development envelope.

2.2.3 Assessment context – existing environment

A total of 21,824 ha of native vegetation clearing within a 38,909 ha development envelope was approved under MS 1072. The significant amendment proposes an additional 1,076 ha of native vegetation clearing and an increase of 1,150 ha to the development envelope.

Vegetation

A total of 84 vegetation associations were mapped within the development envelope, of which 45 occur within the significant amendment (BHP 2025). Of the 84 vegetation associations, 29 associations are considered locally significant. Nineteen of those occur within the significant amendment area. The dominant vegetation association is Triodia Hummock Grassland, making up approximately 27% of the development envelope.

A total of 24 riparian vegetation associations were mapped within the development envelope. An additional 86 occurring outside the development envelope (within 30 km) and are considered to have potential for groundwater dependence. Of the 24 riparian vegetation associations, eight associations were rated as moderate likelihood for groundwater dependence. Three were assessed as having high likelihood of groundwater dependence (GDV):

- MA EcrEvMa AcpAamAthe TydCyv occurs in the northern-most part of the northeast scheme, along Marillana Creek within the Yandi mining lease
- MA Eco EuaTtSogl AtpGoroCule occurs along the northeast scheme, approximately halfway between the MAC-South Flank and Yandi tenements, along Yandicoogina Creek
- MA MaEco CyvTydFis TtEua also occurs along the northeast scheme, approximately halfway between the MAC-South Flank and Yandi tenements, along Yandicoogina Creek.

The modelled groundwater mounding and vegetation associations at Northern RAV MAR is shown in Figure 15. The location of riparian vegetation is shown in Figure 16.

No threatened ecological communities (TECs) listed by the BC Act or the EPBC Act were recorded within the development envelope (Rio Tinto 2023a).

The Coondewanna Flats PEC is located to the west of the development envelope, with a buffer zone that overlaps the development envelope (Rio Tinto 2023a). The Coondewanna flats is located directly south of the Juna Downs MAR. This PEC is associated with two PEC sub-types:

- Priority 1: Coolibah woodlands over lignum (*Duma florulenta*) over swamp wanderrie (*Eriachne benthamii*)
- Priority 3: Coolibah and Mulga (*Acacia aptaneura*) woodland over lignum and tussock grass on clay plains (Coondewanna flats and Wanna Munna Flats).

Locations of PECs are shown in Figure 17.

The Weeli Wolli Spring Community (P1) occurs within 10 km to the east of the development envelope (Rio Tinto 2023a), supporting ecological values and ground dependent vegetation (GDV). Ben's Oasis, located 20 km upstream and south of Weeli Wolli Spring, is also included part of Weeli Wolli (DPaW 2014).

Vegetation condition within the development envelope ranged from 'Excellent' to 'Completely Degraded'. The majority of vegetation (approximately 85%) within the development envelope was classified being in the 'Very Good' to 'Excellent' condition.

The EPA considers that the impact of the significant amendment, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for inland waters.

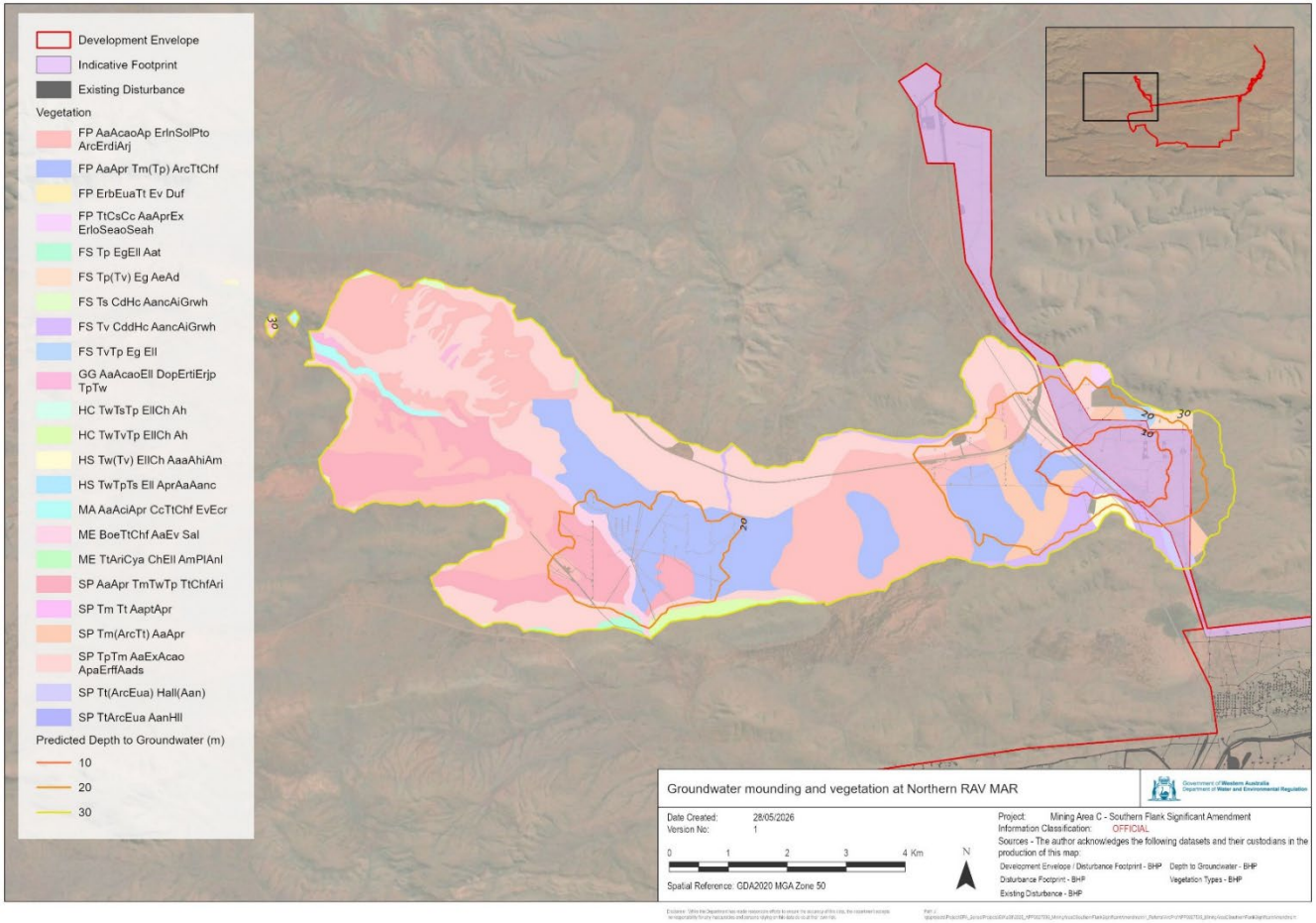

Figure 14: Groundwater mounding and vegetation at Northern RAV MAR

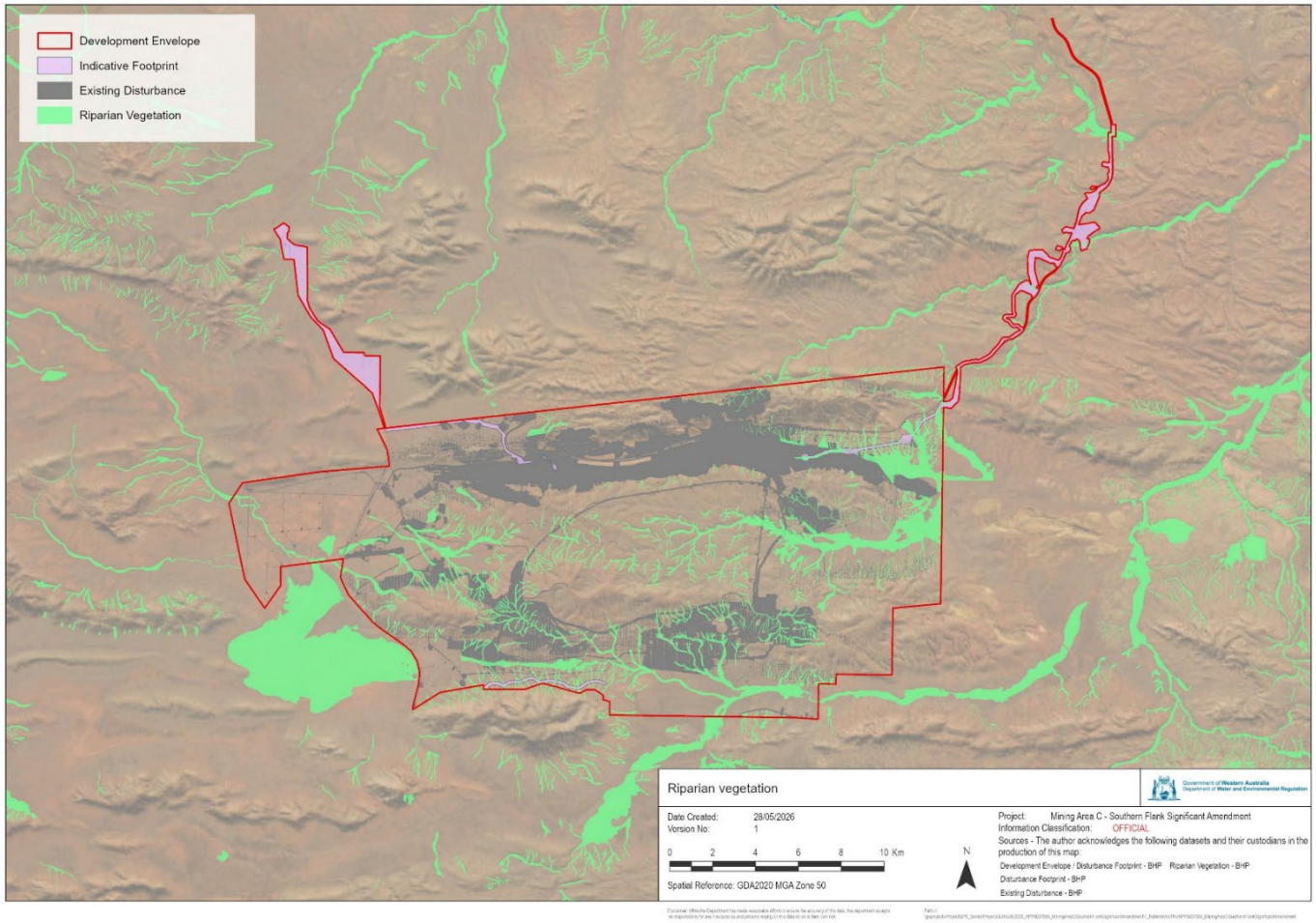

Figure 15: Riparian vegetation

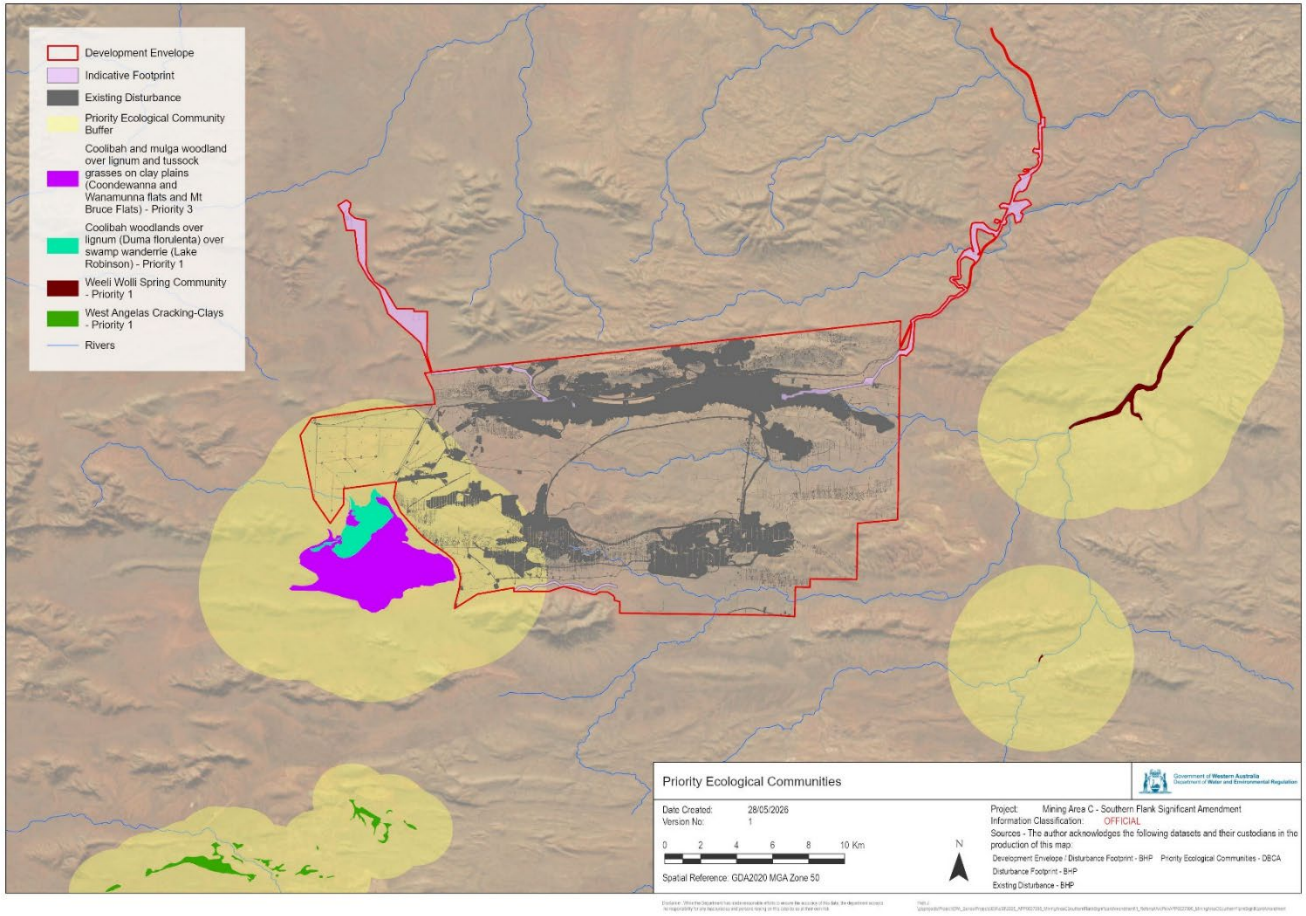

Figure 16: Priority Ecological Communities

Flora

No threatened flora listed under the BC Act or EPBC Act were recorded within the development envelope. A total of 13 priority flora species were recorded in the development envelope:

- *Acacia bromilowiana* (P4)
- *Aristida jerichoensis var. subspinulifera* (P3)
- *Aristida lazaridis* (P3)
- *Eremophila magnifica subsp. magnifica* (P4)
- *Grevillea saxicola* (P3)
- *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (P2)
- *Isotropis parviflora* (P3)
- *Lepidium catapycnon* (P4)
- *Nicotiana umbratica* (P3)
- *Rostellularia adscendens var. latifolia* (P3)
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4)
- *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3)
- *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3).

Locations of recorded conservation significant flora are shown in Figure 18.

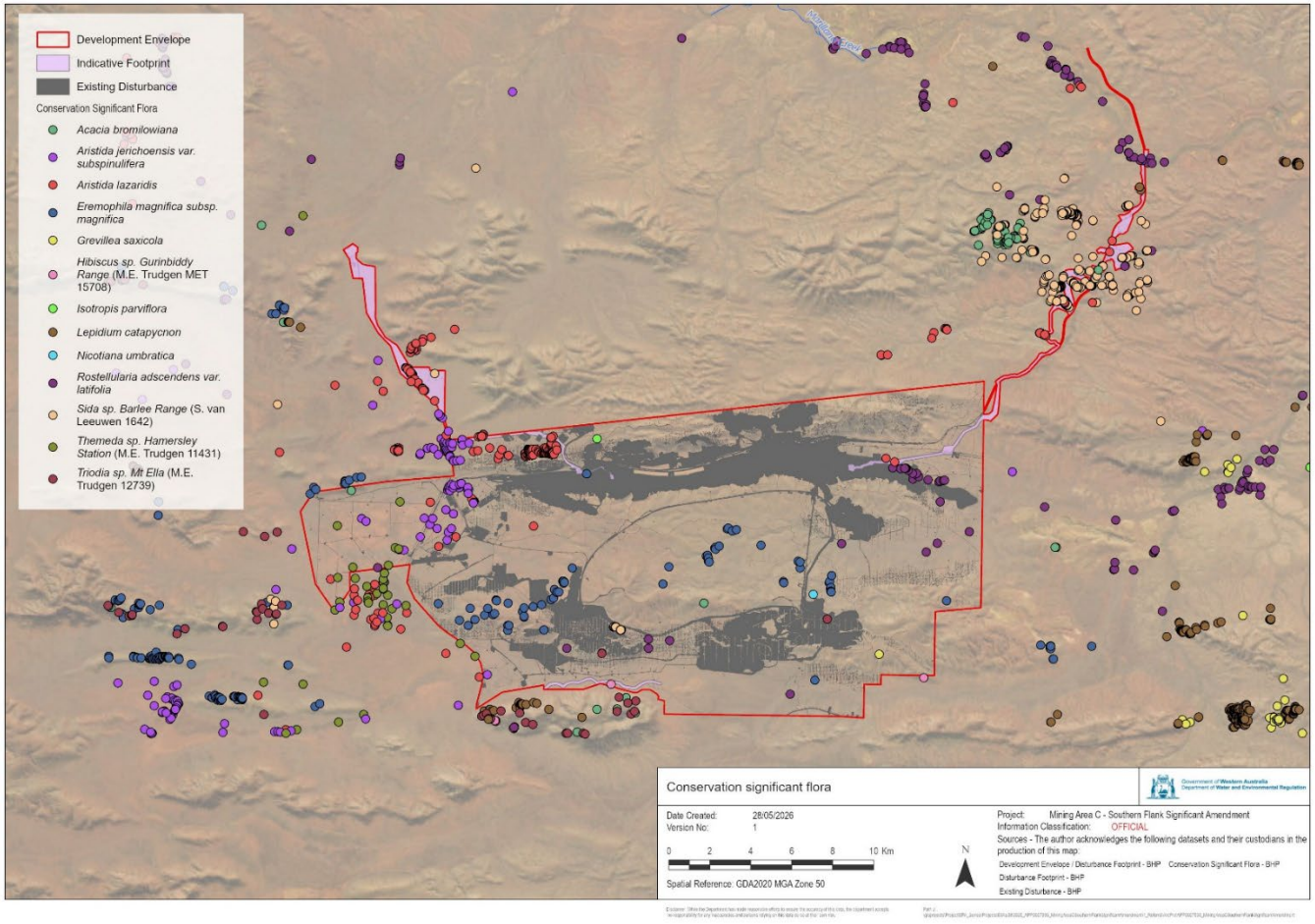

Figure 17: Conservation significant flora

Environmental Values

The environmental values that could be impacted by the significant amendment and combined proposal are:

- native vegetation in 'Good' to 'Excellent' condition
- locally significant vegetation associations
- priority flora species.

2.2.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the Request for Additional Environmental Information (dated 10 July 2025 and 10 December respectively) and revised Environmental Review Document (BHP 2025). Public consultation on the referral of the significant amendment resulted in comments regarding significant impacts to flora and vegetation from increased groundwater abstraction and surplus water discharge, and clearing of 1,076 ha of native vegetation.

2.2.5 Potential impacts from the proposal

The significant amendment has the potential to significantly impact on flora and vegetation as a result of:

- Clearing of up to 1,076 ha of native vegetation, of which 1,043 ha is in 'Good' to 'Excellent' condition (direct).
- Clearing of 57 ha of riparian vegetation (direct).
- Clearing of flora species (direct):
    - 8 individuals of *Acacia bromilowiana* (P4)
    - 105 individuals of *Aristida jerichoensis var. subspinulifera* (P3)
    - 476 individuals of *Aristida lazaridis* (P3)
    - 1 individual of *Lepidium catapycnon* (P4)
    - 43 individuals of *Rostellularia adscendens var. latifolia* (P3)
    - 80 individuals of *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4).
- Causing substantial damage to native vegetation (clearing of 164 ha of riparian vegetation) due to groundwater mounding and root inundation (direct).
- Alteration to groundwater and surface water regimes and systems (indirect).
- Impact to the health of vegetation due to dust deposition, introduction/spread of weeds, and increased risk of bushfire (indirect).

2.2.6 Avoidance measures

The proponent has designed the significant amendment to avoid impacts to flora and vegetation as far as practicable by prioritising the use of existing cleared land where possible, or to construct immediately adjacent to existing cleared land.

2.2.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to flora and vegetation:

- Placing infrastructure within or adjacent to existing disturbed areas as far as practical, minimising the clearing of flora and vegetation required.
- Managing surplus water from the combined proposal in accordance with the combined proposal water management plan CPWRMP including the implementation of new monitoring locations in the vicinity of Ben's Oasis.
- Ongoing monitoring of groundwater levels and vegetation health at key receptors (Coondewanna Flats, Weeli Wolli Spring and Ben's Oasis), with trigger management responses.
- Yandicoogina GDE Supplementation Scheme (trial), with a trigger action response plan (TARP) to manage potential adverse environmental impacts.
- Upper Marillana Creek discharge management, through defined flow limits, wetting-front triggers and thresholds to minimise impact to GDV.
- Lower Marillana Creek discharge monitoring of riparian vegetation.

Part V, Division 3 of the EP Act

The Northern RAV MAR Scheme will be managed through the Part V licence (L7851/2002/6) of the EP Act.

2.2.8 Rehabilitation measures

The proponent has proposed progressive rehabilitation, including:

- Use of local province seed within a specified seed mix for rehabilitation.
- Plant species selection linked to landforms and species lists identified from the baseline flora and vegetation surveys.
- Rehabilitation at closure consistent with the Mine Closure Plan.

2.2.9 Assessment of impacts to environmental values

The EPA advises that the assessment of residual risks to flora and vegetation have been based on the proponent's investigations and DWER's advice.

The EPA recognises the application of the mitigation hierarchy by the proponent in modifying the proposal to avoid direct disturbance impacts on native vegetation and significant flora.

The EPA considered the key environmental values for flora and vegetation are likely to be impacted by:

Clearing of native vegetation, including groundwater mounding causing significant damage to native vegetation (refer to definition of clearing in EP Act).

The EPA has assessed the significant amendment in the context of the approved proposal while having regard to the combined and cumulative effect that the implementation of the proposal may have on the flora and vegetation factor.

Vegetation

The information provided by the proponent in response to the request for further information on impacts to riparian and groundwater dependent vegetation is not adequate, as it provides a qualitative discussion not supported by sufficient evidence. As a result, the revised impact estimates cannot be independently verified. In the absence of appropriate supporting evidence, the EPA considers that the significant amendment will substantially impact the two vegetation units defined by Biologic (2024) as FS Tp EgEll Aat and FS TvTpTw Ell AbApaAanc, with proposed impacts of 23% and 69% respectively. Whilst the proposed clearing is significant, these vegetation associations do not contain restricted species, the EPA considers that, with conditions to limit direct vegetation clearing, the impacts can be managed and there will be no significant residual impacts.

The proponent is currently authorised to disturb up to 21,824 ha of native vegetation with the development envelope as part of the approved proposal. The proponent is proposing to remove an additional 1,076 ha of which approximately 96.93 percent (1,043 ha) is in ‘Good’ to ‘Excellent’ condition, and includes two vegetation associations that are well represented throughout the Pilbara bioregion, and have more than 99% of their pre-European extent remaining across the Pilbara bioregion.

The EPA has assessed that the overall impact of the combined proposal to vegetation in ‘Good’ to ‘Excellent’ condition (including locally significant vegetation and potential GDEs) to be significant given the cumulative impacts within the Pilbara region.

The EPA considers that the impact of the significant amendment, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA’s objectives for flora and vegetation.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for flora and vegetation.

Groundwater dependent vegetation

The proponent is proposing to remove 57 ha of riparian vegetation within the proposed 1,076 ha of native vegetation clearing. This clearing will include 17.5% of vegetation association MA CcCs Aci EcrEv, occurring along major ephemeral water courses.

Altered hydrological regimes resulting from mine dewatering has the potential to indirectly impact riparian vegetation through groundwater drawdown as shown in Figure 8-8 of the ERD.

The proponent proposes to implement the Northern RAV MAR scheme north-east of the proposal area. This scheme is predicted to result in mounding within 10 meters of the ground surface over an area of 162 ha. Five vegetation associations are located within the mounding band and are likely to be impacted by predicted rise in groundwater levels. The EPA notes that deep-rooted species *Eucalyptus xerothermica*, *Eucalyptus leucophloia subsp. leucophloia* or *Eucalytpus victrix* provide foraging habitat for significant species are likely to be impacted resulting in degradation and death of species.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B1 to limit groundwater impacts, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for flora and vegetation.

Priority flora

Thirteen priority flora species were recorded within the development envelope. Of these 13 species, six have been recorded within the indicative footprint. The combined impact, provided by the proponent, is considered in the context of the combined proposal. Estimations of percentage impact in the vicinity of the proposal and at the state level were based on the number of individuals in the development envelope and known records within the state (Table 3).

Aristida lazaridis, a Priority 3 species (DBCA), will be directly impacted by the proposed significant amendment through the loss of 3.3% of the known state population (476 individuals). Cumulative impacts are estimated to reduce the state population by 22.6% The EPA considers that, while the amendment contributes a relatively small proportion of the total impact, the cumulative reduction represents a significant impact on the known population. However, the EPA notes that the species occurrence in adjacent Karijini National Park and considers that, with conditions to limit direct impacts on the species, the significant residual impacts can be managed.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for flora and vegetation.

Table 3: Potential direct impacts to priority flora from the significant amendment

Species	Regional Individuals1	Individuals in development envelope2	Individuals in approved proposal	Individuals in indicative footprint	Combined proposal impact to individuals3	Combined proposal impacts of known population (%)
Acacia bromilowiana (P4)	4,099	10	1	8	9	0.2
Aristida jerichoensis var. subspinulifera (P3)	17,779	2,587	951	105	1,056	5.9
Aristida lazaridis (P3)	14,370	3,874	2,774	476	3,250	22.6
Lepidium catapycnon (P4)	38,035	1	0	1	1	<0.01
Rostellularia adscendens var. latifolia (P3)	7,276	65	297	43	340	4.7
Sida sp. Barlee Range (S. van Leeuwen 1642) (P4)	10,158	86	47	80	127	1.3

1. Based on BHP database, comprising of BHP survey data, publicly available data and data sourced from DBCA (BHP 2025)
2. Excluding surveyed areas
3. Potential impact from the combined proposal

Cumulative Impacts

The combined proposal total clearing includes 22,900 ha of native vegetation within the development envelope, of which approximately 73.09 percent (16,410 ha) is in 'Good' to 'Excellent' condition. Of the 'Good' to 'Excellent' condition vegetation, 15,367 ha has been cleared under the approved proposal, and additional clearing from the significant amendment of 1,043 ha.

The proponent has proposed to offset the significant residual impacts to native vegetation through financial contributions to the Pilbara Environmental Offsets Fund (PEOF), which is reflected in recommended condition B8.

The combined proposal significantly impacts two vegetation units within the development envelope, with 23% of FS Tp EgEll Aat and 69% of FS TvTpTw Ell AbApaAanc affected.

The EPA advises that this impact can be considered in the broader context of clearing of 'Good' to 'Excellent' condition vegetation. The EPA notes that whilst the impact within the development envelope is significant, species present in both vegetation associations occur throughout the Pilbara and as such do not have a significant regional impact.

2.2.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the significant amendment on flora and vegetation environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 4.

The EPA advises that the significant residual impact can be regulated through reasonable conditions (recommended conditions A1 and B2) and counter-balanced by offsets (recommended condition B8) so that the native vegetation in 'Good' to 'Excellent' condition., locally significant vegetation associations, and priority flora species are protected; and the environmental outcome is consistent with the EPA objective for flora and vegetation.

The EPA has had regard to its conclusions in other recent assessments, including Marillana Creek (Yandi) Life of Mine Proposal.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 4: Summary of assessment for flora and vegetation

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1.	Clearing of up to 1,076 ha of native vegetation of which 1,043 ha of native vegetation in Good to Excellent condition in the Pilbara IBRA region. The combined effect of the approved proposals and significant amendment is the loss of 22,900 ha of native vegetation of which 16,410 ha is in 'Good' to 'Excellent' condition.	The clearing of 'Good' to 'Excellent' condition vegetation within the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species.	**Condition A1 (Limitations and extents)** Limitations and extent of proposal. Disturbance limits to clearing of vegetation in 'Good' to 'Excellent' condition. **Condition B2 (Flora and vegetation)** Disturbance limits to environmental values. Minimise impacts from indirect sources. **Condition B6 (Rehabilitation)** Rehabilitation to achieve environmental outcomes. Undertake progressive rehabilitation. **Condition B8** (Offsets) Contribution to PEOF for the clearing of 'Good' to 'Excellent' condition vegetation; riparian vegetation, critical habitat and supporting habitat.
2.	Clearing of up to 57 ha of riparian vegetation.	The clearing of riparian vegetation within the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species.	**Condition A1 (Limitations and extents)** Disturbance limits to clearing of riparian vegetation. **Condition B2 (Flora and vegetation)** Disturbance limits to environmental values. Minimise impacts from indirect sources. **Condition B6 (Rehabilitation)** Rehabilitation to achieve environmental outcomes.

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
			Undertake progressive rehabilitation. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of 'Good' to 'Excellent' condition vegetation; riparian vegetation, critical habitat and supporting habitat.
3.	Potential degradation or loss of Eucalyptus trees within 162 ha of vegetation impacted by groundwater mounding for the Northern Runaway Valley managed aquifer recharge scheme.	Mounding as a result of the Northern RAV MAR Scheme will cause groundwater levels to rise to approximately 10 mbgl. This will impact 162 ha of vegetation. Offsets are required to counterbalance the significant residual impacts to eucalyptus trees and critical and supporting habitat for conservation significant fauna across the Pilbara bioregion.	**Condition A1 (Limitations and extents)** Limits and extent of proposal. **Condition B1 (Inland Waters)** Groundwater mounding limit. **Condition B8 (Offsets)** Contribution to the Pilbara Environmental Offsets Fund for clearing conservation significant fauna habitat where required.
4.	Clearing of two vegetation units FS Tp EgEll Aat and FS TvTpTw Ell AbApaAanc.	The information provided does not clearly indicate the extent of clearing of two vegetation units FS Tp EgEll Aat and FS TvTpTw Ell AbApaAanc, however the total clearing represents approximately 0.3% of the total extent.	**Condition A1 (Limitations and extents)** Limitations and extent of proposal **Condition B2 (Flora and vegetation)** Disturbance limits to environmental values. Minimise impacts from indirect sources. **Condition B6 (Rehabilitation)** Rehabilitation to achieve environmental outcomes. Undertake progressive rehabilitation. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of 'Good' to 'Excellent' condition vegetation; riparian

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
			vegetation, critical habitat and supporting habitat.
5	Clearing of records of priority flora species in the Pilbara region.	*Aristida lazaridis* is predicted to be impacted by 3.3% (impact to 476 individuals) which has the potential to reduce the state population size of the species by 22.6%. The EPA notes it is a substantial impact to the known population. Due to the distribution of the species and occurrence in the adjacent Karijini National Park, it is likely that the species occurs further throughout the Pilbara. The proponent has avoided impacts by prioritising the use of existing cleared land where possible, or to construct immediately adjacent to existing cleared land.	**Condition A1 (Limitations and extents)** Limitations and extent of proposal. **Condition B2 (Flora and vegetation)** Disturbance limits to environmental values. Minimise impacts from indirect sources. **Condition B6 (Rehabilitation)** Rehabilitation to achieve environmental outcomes. Undertake progressive rehabilitation. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of 'Good' to 'Excellent' condition vegetation; riparian vegetation, critical habitat and supporting habitat.

2.3 Terrestrial Fauna

2.3.1 Environmental objective

The EPA environmental objective for terrestrial fauna is to protect terrestrial fauna so that biological diversity and ecological integrity are maintained (EPA 2023c).

2.3.2 Investigations and surveys

The EPA advises the investigations and surveys used to inform the assessment of the potential impacts to terrestrial fauna from the significant amendment are provided in Appendix E.

The terrestrial fauna surveys were mostly consistent with EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020) and EPA Technical Guidance – Sampling of short-range endemic invertebrate

fauna (EPA 2016a) and are considered adequate to characterise terrestrial fauna values and habitats for the purpose of this assessment.

The EPA considered that the information provided in the response to request for further information, revised Environmental Review Document (BHP 2025), and relevant appendices, are appropriate to inform the assessment of potential impacts to terrestrial fauna.

2.3.3 Assessment context – existing environment

A total of 21,824 ha of native vegetation clearing within a 38,909 ha development envelope was approved under MS 1072. The significant amendment proposes an additional 1,076 ha of native vegetation clearing and an increase of 1,150 ha to the development envelope.

Fauna habitat

The proponent has mapped 15 fauna habitat types across the development envelope, 9 of which occur within the proposed significant amendment. The habitat types in the development envelope consist of gorge/gully (806.9 ha), major drainage line (103.4 ha), breakaway/cliff (3.8 ha), artificial wetland (1.03ha), medium drainage line (1.14 ha), hardpan plains (868.8 ha), mulga woodland (754.03 ha), drainage area/floodplain (1,561 ha), stony plain (2,446.31 ha), hillcrest/hillslope 8,203.9 ha), minor drainage line (1,151.74 ha), sand plain (926.50 ha), sandy/stony plain (0.01 ha), gilgai plain (cracking clay) (7.56 ha), and undulating low hills (0.2 ha) (BHP ERD 2025). Fauna habitat types in the development envelope are shown in Figure 21.

Significant habitat features such as caves were identified throughout the development envelope. There were 64 potentially suitable bat caves identified in the development envelope, including ten Category 2 Ghost Bat caves. Caves are considered important ecological habitat features in the Pilbara due to the stable microclimate and shelter they provide to a range of fauna including the significant species northern quoll, ghost bat, Pilbara leaf-nosed bat and Pilbara olive python. In addition, the development envelope contains two permanent, four semi-permanent and several temporary pools that provide foraging and dispersal habitat for Pilbara olive python.

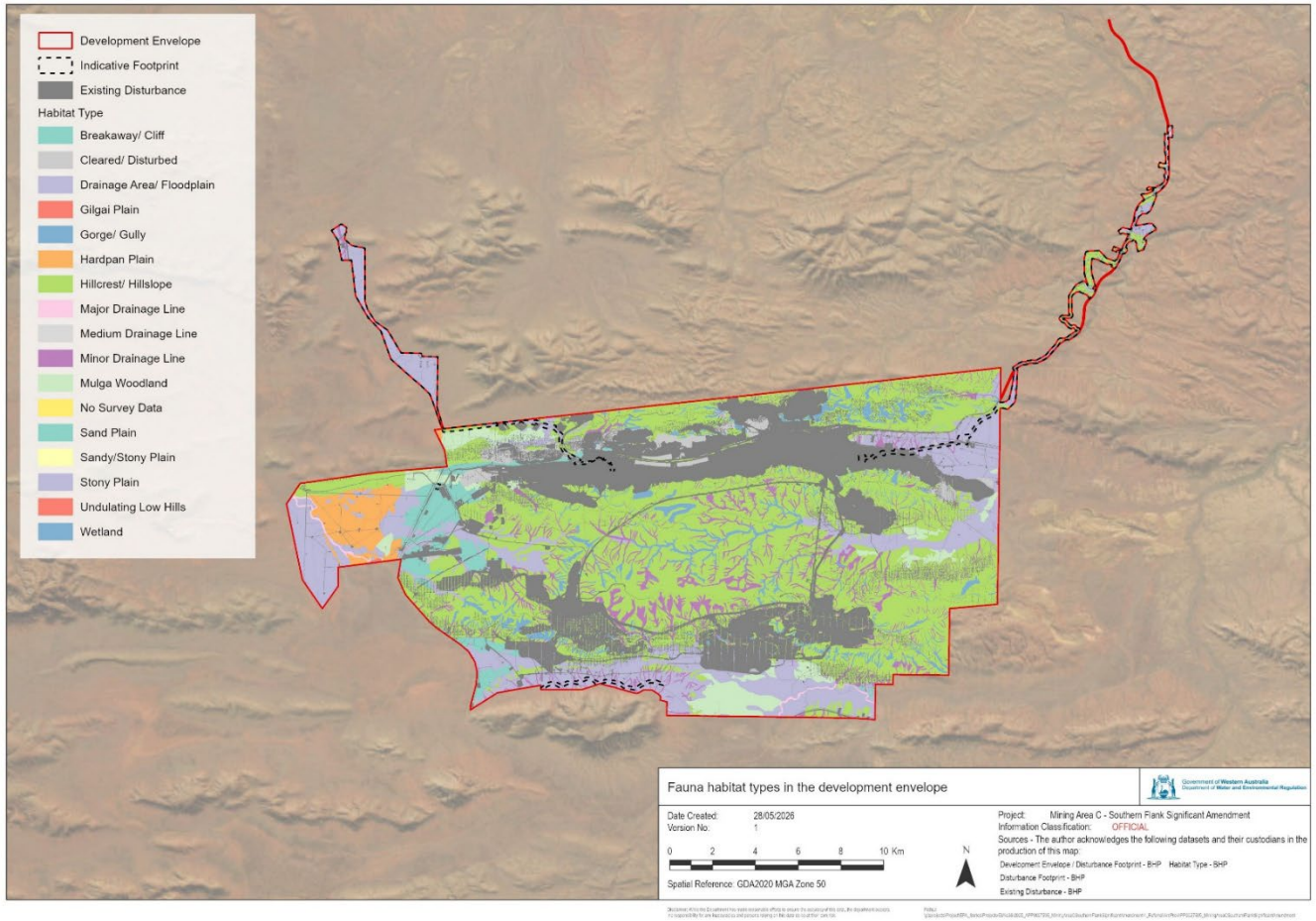

Figure 18: Fauna habitat types in the development envelope

Significant Fauna

Species of conservation significance that were recorded in the development envelope include:

- northern quoll (*Dasyurus hallucatus*) – listed as Endangered under the BC Act and EPBC Act
- ghost bat (*Macroderma gigas*) – listed as Vulnerable under the BC Act and EPBC Act
- Pilbara leaf-nosed bat (*Rhinonicteris aurantius* [Pilbara form]) – listed as Vulnerable under the BC Act and EPBC Act
- Pilbara olive python (*Liasis olivaceus barroni*) – listed as Vulnerable under the BC Act and EPBC Act
- grey falcon (*Falco hypoleucos*) – listed as Vulnerable under the BC Act and EPBC Act
- fork-tailed swift (*Apus pacificus*) – listed as Migratory under the BC Act and EPBC Act
- peregrine falcon (*Falco peregrinus*) – listed as 'Other Specially Protected Fauna' under the BC Act
- Gane's blind snake (*Anilios ganei*) - listed as Priority 1 by DBCA
- Pilbara barking gecko (*Underwoodisaurus seorsus*) – listed as Priority 2 by DBCA
- western pebble-mound mouse (*Pseudomys chapmani*) – listed as Priority 4 by DBCA
- brush-tailed mulgara (*Dasycerus blythi*) – listed as Priority 4 by DBCA.

Several other significant fauna species were recorded within the groundwater drawdown impact area and outside the development envelope.

Ghost bat

Ghost bats have been recorded 289 times within the approved development envelope through direct observation (sightings), echolocation recordings, and scat analysis. The presence of nine category 2 caves suggests that the species resides permanently within the development envelope and its immediate vicinity, with the area providing critical and foraging habitat. No ghost bat caves are located in the indicative footprint, however there are ten regional caves within 500m of proposed footprint, one category 2, two category 3, and seven category 4 caves. As these

caves are within and adjacent to existing operations, the significant amendment is unlikely to have any additional impact on these caves from impacts from the approved proposal.

Gorge/Gully, Breakaway/Cliff, Hillcrest/Hillslope, Major, Medium and Minor Drainage Lines, Drainage Area/Floodplain, Stony Plain, Mulga Woodland, and Undulating Low Hills habitats all represent critical foraging and dispersal habitats for ghost bats in both the development envelope and indicative footprint.

Pilbara leaf-nosed Bat

Seven Pilbara leaf-nosed bat records have been documented within the approved development envelope through echolocation recordings and targeted survey effort. While the species has been confirmed as present, no critical roosting habitat has been identified within the proposed indicative footprint.

Major and Minor Drainage Line, Breakaway/Cliff, Gorge/Gully, Hillcrest/Hillslope, and Drainage Area/Floodplain habitats represent supporting habitats for the Pilbara leaf-nosed bat.

Other Conservation Significant Fauna

Wetland, Gorge/Gully, Breakaway/Cliff, Floodplains and Major Drainage Line habitats provide critical habitat for several conservation significant fauna species within the development envelope, including the northern quoll, Pilbara olive python and grey falcon.

The northern quoll has been recorded seven times within the development envelope. Gorge/Gully, Breakaway/Cliff and Major Drainage Line habitats all represent critical habitat for the northen quoll within the development envelope.

The Pilbara olive python has been recorded eight times within the development envelope, including one record within the indicative footprint. Wetland, Major Drainage Line, Gorge/Gully and Breakaway/Cliff landforms provide critical foraging and dispersal habitat for the species, with Minor Drainage Lines functioning as supporting habitat.

The grey falcon has been recorded three times within the development envelope. Major Drainage Lines and Drainage Areas/Floodplains provide critical habitat for the species, with Medium Drainage Lines acting as supporting habitat.

Other conservation significant fauna may also occur within the development envelope, including Gane's blind snake, the Pilbara barking gecko, fork-tailed swift, peregrine falcon and the western pebble-mound mouse.

Short-Range Endemic Fauna

A total of 25 confirmed and four Potential SRE have been recorded within the approved development envelope with a further three Potential SREs, and three Uncertain SRE species were recorded within the Indicative Footprint. All recorded species are known from multiple locations both within and beyond the Indicative Footprint. Surveys have shown that these taxa occur across a range of habitat types, and none appear to be restricted to the areas proposed for disturbance.

Northern RAV MAR area contains moderate or moderate-to-low SRE habitat. Two Potential SRE species, *Mecistocephalus* sp. *H-CME022* and *Idiosoma MYG306*, have been recorded within these habitats. *M.* sp. *H-CME022* was identified as a putative new species. Neither species is considered restricted to this area. *M.* sp. H-CME022 was recorded at multiple locations during concurrent surveys, including a site 10.1 km from the Northern RAV MAR area. *I* MYG306 has an even broader known distribution, with previous records occurring 7.2 to 50 km south of the area.

Environmental Values

The environmental values that could be impacted by the significant amendment and combined proposal are:

- conservation significant fauna
- SRE habitat.

2.3.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the Request for Additional Environmental Information (dated 10 July 2025 and 10 December respectively) and revised Environmental Review Document (BHP 2025). Public consultation on the referral of the significant amendment resulted in comments regarding significant impacts to foraging habitat.

2.3.5 Potential impacts from the proposal

- Clearing of up to 1,076 ha of native vegetation comprising terrestrial fauna habitats (direct).
- Habitat fragmentation and barriers to fauna movement (direct).
- Fauna injury or mortality during construction or operational activities (direct).
- Habitat degradation from altered groundwater and surface water regimes (indirect).
- Disturbance from dust, light, noise and/or vibration or light, resulting in the displacement of fauna (indirect).
- Disturbances to fauna from invasive or introduced species (indirect).

2.3.6 Avoidance measures

The proponent has designed the significant amendment to avoid impacts to terrestrial fauna as far as practicable by:

- designing the indicative footprint to avoid all confirmed and potential Ghost Bat caves and avoiding all caves within the development envelope that are currently managed under the approved proposal
- avoiding all critical, and/or high value habitat features such as surface water pools, south-facing slopes, gorge/gully and breakaway/cliff habitats
- avoidance of barbed wire fencing to reduce entanglement of bats.

2.3.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to terrestrial fauna:

- Utilisation of existing infrastructure to minimise the need for vegetation clearing.
- Construction during daylight hours to minimise impact to nocturnal species.
- Incorporating fauna sensitive design measures to minimise barriers and fauna dispersal.
- Managing light emissions to ensure light is directed into operational areas as far as practicable.
- Installation of bat reflectors as a visual deterrent where barbed wire fencing is considered required.
- Restricting vehicle access to established roads/tracks and enforcing speed limits.
- Operating within existing groundwater license limits for surplus water discharge at the Lower Marillana Creek discharge point.
- Implementation of management measures to reduce generation of dust and displacement of fauna due to disturbances from light, noise and/or vibration.
- Underpasses and overpasses installed in high value habitat for ground-dwelling threatened fauna species such as the Pilbara olive python and northern quoll.

2.3.8 Rehabilitation measures

The proponent has proposed the following progressive rehabilitation measures:

- Integrating fauna habitats into landform design.

- Utilising selective placement of logs or smaller woody debris and/or boulders (if available) across the re-profiled surface and/or constructing rocky cliff features (where potential exists) to provide additional habitat areas for fauna species.
- The proponent has committed to implement a Mining Area C Mine Closure Plan (MCP) in accordance with Department of Mines, Petroleum and Exploration (DMPE) guidelines.

2.3.9 Assessment of impacts to environmental values

The EPA advises that the assessment of residual risks to terrestrial fauna have been based on the proponent's investigations.

The EPA recognises the application of the mitigation hierarchy by the proponent in modifying the proposal to avoid direct disturbance impacts on native vegetation and terrestrial fauna habitat.

The EPA considered the key environmental values for terrestrial fauna are likely to be impacted by:

- Clearing of terrestrial fauna habitat.
- Habitat fragmentation and barriers to fauna movement.
- Fauna injury or mortality during construction or operational activities.

The EPA has assessed the significant amendment in the context of the approved proposal while having regard to the combined and cumulative effect that the implementation of the proposal may have on the terrestrial fauna factor.

Fauna Habitat

The significant amendment comprises clearing of up to approximately 1,076 ha of a 1,482 ha indicative footprint. This includes clearing of 810 ha of critical fauna habitat, 28.3 ha of moderate to high value SRE habitat, and 221 ha of riparian vegetation (57 ha direct clearing, and up to 164 ha possibly substantially damaged or lost due to groundwater mounding and root inundation, as discussed in section 2.1.9. Clearing by habitat type is summarised in Table 5.

Table 5: Summary of clearing extent of fauna habitat

Habitat Type	Mapped Extent within BHP Consolidated Mapping (ha)	Extent mapped within development envelope (ha)	Indicative extent proposed to be cleared (ha)	Indicative extent loss within development envelope (ha)	Loss within consolidated mapping (%)
Gorge/Gully	3,104.19	1,623.49	14.96	824.36	26.56
Major Drainage Line	12,900.29	107.12	10.14	11.68	0.09
Breakaway/Cliff	37.4	9.83	2.19	8.24	22.02
Artificial Wetland	72.12	1.05	1.03	1.03	1.43
Medium Drainage Line	626.89	1.17	0	0	0
Hardpan Plain	6,322.13	903.43	0	1.58	0.02
Mulga Woodland	33,605.56	1,471.84	0	691.06	2.06
Drainage Area/Floodplain	28.854.46	2,894.96	356.53	1,556.96	5.4
Stony Plain	41,533.53	4,169.67	387.24	2,011.44	4.84
Hillcrest/Hillslope	171,607.27	19,643.76	234.3	11,154.99	6.5
Minor Drainage Line	7,634.59	3,016.75	38.87	1,870.72	24.5
Sand Plain	53,822.11	1,441.90	1.65	332.38	0.62
Sandy/Stony Plain	3,683.11	0.01	0	0	0
Gilgai Plain	2,374.04	7.56	0	0	0
Undulating Low Hills	10,697,10	0.2	0	0	0

Habitat Fragmentation

The implementation of the significant amendment will include placement of above-ground linear infrastructure, which will create a barrier to movement and further fragmentation to habitat due to additional clearing. The proposed clearing is planned to occur in areas subject to existing fragmentation.

The proponent has proposed placing underpasses and overpasses in high value habitat to mitigate habitat dispersal impacts to ground-dwelling threatened fauna species such as the Pilbara olive python and northern quoll.

Significant Fauna

Ghost bat

Where habitat types occur within 12 km of critical ghost bat roosting habitat, all such habitat types are considered critical habitat for ghost bats (with the exception of Artificial Wetlands).

The significant amendment will involve clearing of up to 808 ha of the critical foraging and dispersal habitat, including Gorge/Gully, Breakaway/Cliff, Hillcrest/Hillslope, Major, Medium and Minor Drainage Lines, Drainage Area/Floodplain, Stony Plain, Mulga Woodland, and Undulating Low Hills habitats.

The EPA notes that a further 160.7 ha of critical ghost bat habitat will be degraded or lost due to altered groundwater regimes. The EPA has assessed the likely residual impacts of clearing and determines the clearing of 808 ha of critical habitat and a potential further 160.7 ha of habitat degradation is a significant impact.

Potential indirect impacts to ghost bat caves located within 500 m of the indicative footprint include disturbance from dust, light, noise and vibration. Given the nature of the proposed works, which will predominantly involve micro tunnelling, indirect impacts from dust, noise and vibration are expected to be minimal.

The EPA considers that the impact of the significant amendment, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for terrestrial fauna.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B3 to limit disturbance to fauna habitat types, restrict disturbance to ghost bat caves, define environmental outcomes and objectives for disturbance to terrestrial fauna and manage clearing activities, implementation of Fauna Management Plan, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for terrestrial fauna.

Pilbara leaf-nosed Bat

The proposal will involve clearing of 1,044 ha of supporting habitat for the Pilbara leaf-nosed bat, including Major and Minor Drainage Line, Breakaway/Cliff, Gorge/Gully, Hillcrest/Hillslope, and Drainage Area/Floodplain habitats.

The EPA has assessed the likely residual impacts of clearing and determines the clearing of 1,044 ha of critical and supporting habitat and a potential further 160.7 ha of habitat degradation is a significant impact.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B3 to limit disturbance to fauna habitat types, define environmental outcomes and objectives for disturbance to terrestrial fauna and manage clearing activities, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for terrestrial fauna.

Other Conservation Significant Fauna

The proposal will involve clearing of up to 27.3 ha of the critical foraging and dispersal habitat and 40 ha of supporting habitat for the northern quoll, Pilbara olive python and grey falcon, including Wetland, Gorge/Gully, Breakaway/Cliff, Floodplains and Major Drainage Line habitats.

The proposal will clear up to 28.3 ha of critical habitat and 39 ha of supporting habitat for the Pilbara olive python, and degradation or loss of up to 35.8 ha of critical habitat for the Pilbara olive python due to altered groundwater regimes.

The proposal will clear up to 10.14 ha of critical habitat including Major Drainage Lines and Drainage Areas/Floodplains, and 395 ha of supporting habitat including Medium Drainage Lines, for the grey falcon, with a further 66.3 ha potentially lost or degraded due to altered groundwater regimes. While the grey falcon is highly mobile, the EPA notes that the combined extent of habitat loss and degradation warrants management through conditions to limit indirect impacts.

Other conservation significant fauna may also occur within the development envelope, including Gane's blind snake, the Pilbara barking gecko, fork-tailed swift. peregrine falcon and the western pebble-mound mouse. Given the nature of the disturbance, the EPA considers that impacts to these species are likely to be limited and largely consistent with those previously assessed for the broader proposal.

The EPA considers that significant residual impacts can be managed through condition A1 to set clearing limits, condition B2 to limit disturbance to significant vegetation and define environmental outcomes and objectives for disturbance to native vegetation, condition B3 to limit disturbance to fauna habitat types, define environmental outcomes and objectives for disturbance to terrestrial fauna, condition B6 for rehabilitation requirements and condition B8 for offsets to counterbalance the significant residual impacts. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for terrestrial fauna.

Short Range Endemic Fauna

The combined proposal will intersect several areas where SRE and potential SRE invertebrate taxa have been recorded. Clearing associated with the combined proposal is not expected to create range-restricted impacts or isolate any known SRE populations.

Potential groundwater drawdown impacts are confined to areas containing groundwater-dependent vegetation and groundwater-dependent pools, found in Major and Medium Drainage Line habitats and extending beyond the areas of impact. Predicted drawdown at Weeli Wolli Spring remains within the limits of the approved proposal, and no additional impacts beyond those already assessed are expected. On this basis, groundwater-related impacts to SRE fauna are unlikely to be significant.

Groundwater mounding from the Northern RAV MAR may result in the degradation of up to 41 ha of moderate or moderate-to-low SRE habitat which provides habitat for Potential SRE species, *M.* sp. *H-CME022* and *I. MYG306*. Neither species is considered restricted to this area. *Idiosoma* MYG306 has an even broader known distribution, with previous records occurring 7.2 to 50 km south of the area. The EPA is of the view that impacts from the significant amendment are unlikely to significantly impact SREs and considers habitats from which the potential SREs were recorded are sufficiently represented outside of the impact areas.

Cumulative Impact

To date, a total of 21,824 ha has been cleared. The additional 1,076 ha of clearing proposed under the significant amendment would result in a combined total clearing of approximately 22,900 ha. The combined proposal includes clearing of 10,134 ha of critical habitat and 1,538 ha of moderate or higher value SRE habitat. Based on information provided by the proponent, the combined impacts of the significant amendment and approved proposal correspond to losses of approximately less than 30% for all habitats within the development envelope, as shown in Figure 22.

The clearing of up to 808 ha of Gorge/Gully habitat, which is critical dispersal and foraging fauna habitat type for ghost bat, Pilbara leaf-nosed bat, northern quoll, Pilbara olive python and grey falcon, is a reduction of 26.56% of habitat and is considered a significant impact.

The approved proposal created large areas of fragmentated habitat in the northern and eastern parts of the Jirrpalpur Range. The combined proposal will cause additional fragmentation to the north of the development envelope. Considering the proposed mitigation measures, the EPA considers the combined proposal is not likely to have significant impact on fauna dispersal through fragmentation.

2.3.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the significant amendment on terrestrial fauna environmental values. In doing so, the EPA has considered whether

reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 6.

The EPA advises that the significant residual impact can be regulated through reasonable conditions (recommended conditions A1 and B3) and counter-balanced by offsets (recommended condition B6) so that the conservation significant fauna and SRE habitats are protected; and the environmental outcome is consistent with the EPA objective for flora and vegetation.

The EPA has had regard to its conclusions in other recent assessments, including Marillana Creek (Yandi) Life of Mine Proposal.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 6: Summary of assessment for terrestrial fauna

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1.	Clearing of 808 ha of critical foraging habitat for significant fauna species: • 808 ha ghost bat habitat. • 27.3 ha northern quoll habitat (Gorge/Gully, Breakaway/Cliff, and Major Drainage Line) • 28.3 Pilbara olive python habitat (Artificial Wetland, Major Drainage Line, Gorge/Gully, and Breakaway / Cliff) • 10.14 ha grey falcon habitat (Major Drainage Line and Drainage Area/Floodplain)	The EPA considers the loss of conservation significant fauna foraging habitat. The combined impacts of the significant amendment and approved proposal correspond to losses of approximately less than 30% for all habitats within the development envelope.	**Condition A1 (Limitations and extents)** Disturbance limits to clearing of native vegetation within the development envelope. **Conditions B3 (Terrestrial Fauna)** Disturbance limits for habitat types. Protection of retained ghost bat caves and viability of ghost bat population. Pre-clearance surveys. Ghost Bat Management Plan. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of critical

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
			habitat and supporting habitat.
2.	Clearing up to 1,045 ha of supporting habitat for: • 40 ha northern quoll supporting habitat (Artificial Wetland, and Minor Drainage Line) • 39 ha of Pilbara olive python supporting habitat (Minor Drainage Line) • 1,044 ha Pilbara leaf-nosed bat supporting habitat (Major and Minor Drainage Line, Breakaway/Cliff, Gorge/Gully, Hillcrest/Hillslope, and Drainage Area/Floodplain) • 395 ha grey falcon supporting habitat (Medium Drainage Line)	The EPA considers the loss of conservation significant supporting fauna habitat is a residual impact. The combined impacts of the significant amendment and approved proposal correspond to losses of approximately less than 30% for all habitats within the development envelope.	**Condition A1 (Limitations and extents)** Disturbance limits to clearing of native vegetation within the development envelope. **Conditions B3** (Terrestrial Fauna) Disturbance limits for habitat types. Pre-clearance surveys. **Condition B8** (Offsets) Contribution to PEOF for the clearing of critical habitat and supporting habitat.
3.	Groundwater mounding from the Northern Rav MAR: • 160.7 ha critical and/or supporting fauna habitat, including Drainage Area/ Floodplain (30.5 ha), Medium Drainage Line (35.8 ha), Mulga Woodland (4.1 ha), Stony Plain (90.0 ha), and Hardpan Plains (1.1 ha)	Groundwater mounding from the Northern Rav MAR scheme may cause indirect adverse impacts to 162 ha of vegetation, of which 160.7 ha provide critical and/or supporting fauna habitat. Adverse impacts demonstrating decline or mortality attributable to mounding are considered residual impact.	**Condition A1 (Limitations and extents)** Limits and extent of proposal. **Condition** B1 **(Inland Waters)** Outcomes to be achieved through implementation of the proposal to protect ecological communities and habitat types.

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
			Condition B8 (Offsets) Contribution to PEOF for the clearing of critical habitat and supporting habitat.
4.	Dust, light, noise and vibration potentially disturbing ghost bat caves located within 500 m of the indicative footprint.	Potential indirect impacts to ghost bat caves located within 500 m of the indicative footprint include disturbance from dust, light, noise and vibration. Given the nature of the proposed works, which will predominantly involve micro tunnelling, indirect impacts from dust, noise and vibration are expected to be minimal.	**Conditions B3 (Terrestrial Fauna)** Protection of retained ghost bat caves and viability of ghost bat population. Ghost Bat Management Plan.
5.	Clearing of terrestrial fauna habitat in which significant fauna records were identified: • northern quoll – four records • Pilbara olive python – two records • Western pebble-mound mouse – 17 records	The clearing of habitat associated with recorded occurrences of conservation-significant fauna species is a significant residual impact.	**Condition A1 (Limitations and extent of proposal)** Disturbance limits to clearing of native vegetation within the development envelope. **Conditions B3 (Terrestrial Fauna)** Disturbance limits for habitat types. Pre-clearance surveys. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of critical habitat and supporting habitat.
6.	Clearing of SRE habitat in which four uncertain or potential SRE species were identified.	The combined proposal intersects areas where SRE and potential SRE invertebrate taxa have been recorded; however, all taxa are known from multiple locations within and outside the Indicative Footprint and occur across a range of habitat types.	**Condition A1 (Limitations and extent of proposal)** Disturbance limits to clearing of native vegetation within the development envelope.

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
		The proposed clearing is not expected to restrict species' ranges or isolate any known populations.	**Conditions B3 (Terrestrial Fauna)** Disturbance limits for habitat types. **Condition B8 (Offsets)** Contribution to PEOF for the clearing of critical habitat and supporting habitat.

2.4 Subterranean Fauna

2.4.1 Environmental objective

The EPA environmental objective for subterranean fauna is *to protect subterranean fauna so that biological diversity and ecological integrity are maintained* (EPA 2016b).

2.4.2 Investigations and surveys

The EPA advises the investigations and surveys used to inform the assessment of the potential impacts to subterranean fauna from the significant amendment are provided in Appendix E, and included:

- Central Pilbara Hub Subterranean Fauna Survey Report (Bennelongia 2025a)
- Central Pilbara Hub Significant Amendment Stygofauna Environmental Impact Assessment (Bennelongia 2025b)
- East Packsaddle Subterranean Fauna Baseline Survey (Biologic 2024)
- South Flank MAR Subterranean Fauna Desktop Assessment (Bennelongia 2018)
- Mining Area C Southern Flank: Stygofauna Assessment (Bennelongia 2016)
- Iron Ore Mining Area C Southern Flank Public Environmental Review (BHP 2017)
- Mining Area C, Life of Project: Stygofauna Assessment (Bennelongia 2015)
- EPA Report 1773 Hope Downs 2 Hamersley HMS Pty Limited (EPA 2024)

- Final Report: Hope Downs 2 Level 2 Stygofauna Survey (Stantec 2022)

The EPA notes that the subterranean fauna surveys were not fully consistent with *EPA Technical Guidance – Subterranean fauna surveys for environmental impact assessment* (EPA 2021). The surveys and supporting documentation for stygofauna present limitations. The limitations for stygofauna and troglofauna are discussed in section 2.4.3.

At least 17 subterranean fauna surveys have historically been undertaken within the groundwater impact areas of the combined proposal. This includes subterranean fauna surveys undertaken across the MAC-SF Development Envelope, groundwater drawdown areas used in the assessment of the approved proposal, and BHP Mining Area C-South Flank Significant Amendment throughout the Coondewanna Flats and Weeli Wolli Creek subcatchments between 2007 and 2016. Since 2016, a further six studies have been undertaken within the combined proposal groundwater impact area including baseline and targeted sampling surveys, and an impact assessment for stygofauna. These studies intersect the groundwater drawdown contours of the combined proposal and provide regional information that has been used to support the assessment of Subterranean Fauna for the Proposal. In addition, BHP has undertaken additional sampling for subterranean fauna inside and outside the drawdown impact area, and within the predicted mounding contours of the Northern RAV MAR scheme (BHP 2025).

Impact Assessment of Stygofauna

Sampling effort of subterranean fauna included sampling within the combined proposal drawdown areas and in areas of 10 - 30 mbgl of predicted mounding. Additional samples were obtained in regional sites within 5 km of the drawdown area for stygofauna and 10 km for troglofauna. Areas where groundwater drawdown is predicted, and were sampled for stygofauna, include the Coondewanna Flats PEC and buffer, Weeli Wolli Springs PEC and buffer, Ben's Oasis and buffer, within the development envelope, west and south-west of Coondewanna Flats buffer, and other areas.

A summary of the number of stygofauna species recorded during surveys used for the assessment for the Combine Proposal is provided in Table 7.

Table 7: Summary of stygofauna species – Significant Amendment

Location of identified species	Number of stygofauna species	Number located within approved proposal groundwater drawdown contours	Number located within combined proposal groundwater drawdown contours	Number located within the combined proposal groundwater drawdown contours, not located within approved proposal groundwater drawdown contours	Number located within approved proposal groundwater drawdown contours, not located within the combined proposal groundwater drawdown contours
Species known from outside the combined proposal the groundwater drawdown contours	101	100	93	1: *Cypretta seurati* (Weeli Wolli Spring)	7: *Ainudriluss* sp. *WA26* (PSS) *Halacaridae* sp. *B01* *Gomphodella* sp. *Biologic-OSTR078* *Deminutiocandona mica* *Parastenocaris* sp. *Biologic-HARP032* *Schizopera* sp. *Biologic-HARP031* *Schizopera* sp. *B02*
Species only known from combined proposal the groundwater drawdown contours[1]	9	9	9	0	-

Source: Table 10-8 (BHP 2025)

1. Potentially restricted species located within Weeli Wolli Spring, South Flank, Coondewanna Flats and Mudlark Well.

As shown in Table 1, the proponent identified 9 potentially restricted stygofauna species located within the groundwater drawdown contours of the combined proposal. An additional 17 stygofauna species require additional assessment to determine any restrictions due to uncertainty in the information provided as to whether the species are potentially restricted. These species include *C. seurati* (identified at Weeli Wolli Spring and shown in Table 1) in addition to 16 other species identified by the EPA after review of BHP (2025) and supporting document and are listed below. These species require additional assessment due to BHP (2025) identifying the taxa as locally restricted.

- *Naididae* sp. N1 LB-2015`
- *Australocamptus* sp.
- *Phreodrilidae* sp. *S06*
- *Achaeta* sp. *OLIG021*
- *Halacaridae* sp. *B01*
- *Recifella* sp. *P1 (nr umala)* (PSW)
- *Deminutiocandona mica*
- *Meridiescandona* sp. *Biologic-OSTR057*
- *Notacandona modesta*
- Pilbaracandona nr *rosa*
- Gomphodella sp. *Biologic-OSTR078*
- *Stygoridgewayia trispinosa*
- *Australoeucyclops karaytugi*
- *Gordanitocrella* sp. *Biologic-HARP030*
- *Chydaekata* sp. *B01*
- *Paramelitidae* Genus 2 *BAM232*
- *Paramelitidae* sp. *Biologic-AMPH070*
- *Pezidae* sp. *Biologic-ACAR003*

One species of stygofauna, *Nicolenella* sp. 13 (=Lineage B), requires further survey and impact assessment to define the distribution, range and a determination of significance of residual impact. Based on the information available, the EPA has

determined the Precautionary Principle will apply for *N.* sp. 13 (=Lineage B) when assessing the potential impacts of the significant amendment and combined proposal.

Given the identified gaps in information for stygofauna, the Precautionary Principle has been applied to species likely to occur within the Coondewanna Flats, South Flank and Weeli Wolli Spring areas predicted to be impacted by drawdown from the significant amendment. Coondewanna Flats, South Flank and Weeli Wolli Spring are of significance due to the drawdown impacting stygofauna species in these areas for the combined proposal.

Further studies on distribution/range and habitat conductivity for stygofauna will assist in clarifying any gaps or inconsistencies in subsequent reporting.

The surveys and interpretation of the surveys for stygofauna have not been deemed adequate by the EPA, and the supporting information does not demonstrate that the sampling effort undertaken is reasonable to confidently predict the distributions of taxa, particularly when concluding that species are likely to be found outside the areas of impact.

The EPA determined it could review the information provided in the response to request for further information, the ERD, and relevant appendices, in addition to other documentation reviewed by the EPA during its assessment and is of the view that with recommended conditions, the significant amendment can be implemented.

Impact assessment of troglofauna

EPA notes a review on restricted or potentially restricted troglofauna was also carried out to verify an impact assessment of adequate veracity had occurred previously, for the approved proposal and for the significant amendment. Given commitments made by the proponent to undertake further studies on distribution/range and habitat conductivity for troglofauna, the EPA determined any gaps or inconsistencies would be clarified in subsequent reporting.

Previously assessed

The EPA notes there are inconsistencies with the use of the term “previously assessed” in the ERD and supporting documents when referencing subterranean fauna. The glossary of the ERD defines “previously assessed area” as *the total area of clearing assessed and approved for the approved proposal*. The “approved proposal” is defined as *the works and activities for mining operations within Mining Area C and South Flank (the Central Pilbara Hub) comprising the approved proposal under the existing Ministerial Statement 1072*.

Any further studies and reporting should ensure a risk assessment of the impacts of the significant amendment and combined proposal has occurred for all subterranean fauna species that occur within the combined proposal. In the event that the proponent

refers to taxa as being previously assessed, the proponent must ensure it has been assessed for direct impacts from groundwater drawdown and mounding, to ensure sufficient consideration is given to the risk of the combined proposal on the fauna.

The EPA notes the proponent has used the term “previously assessed” to refer to an assessment for the Hope Downs 2 proposal for Hamersley HMS Pty Ltd, approved by MS 1248 (EPA 2024; Stantec 2022). This proposal was assessed by the EPA in 2024. Specific reference is made to the use of the Hope Downs 2 proposal stygofauna studies (Stantec 2022) and subsequent approval under MS 1248 for the prediction of impacts on *Pilbarus* sp. *Biologic-AMPH001*, where the assessment for the Hope Downs 2 proposal was based on no predicted impact to this species as the proposed pit was not extending below the groundwater table. The information is not considered relevant in the context it has been used as the conclusions were made based on no source-to-receptor connectivity, and therefore no impact to a species. The information would be relevant if there was a confirmed source-to-receptor connection (mounding, dewatering or creation of pits).

2.4.3 Assessment context – existing environment

The MAC and Southern Flank Hub areas are known to contain substantial areas of prospective habitat for stygofauna and troglofauna.

The development lies within the Hamersley Group, with the components being the Brockman Iron Formation, Wittenoom Formation, Mt McRae Shales and Mt Sylvia Formation, and the Marra Mamba Formation. In the central and eastern part of the combined proposal area there is the Yandicoogina Palaeovalley, which is incised into the Hamersley Group.

Fresh groundwater can be found throughout the combined proposal area. The depth to groundwater varies across the area of drawdown with it ranging from 0 to 15 mbgl in the Weeli Wolli aquifer system, 20 to 40 mbgl in the Hope Downs Valley, and 20 to 30 mbgl around Coondewanna Flats.

Suitable habitat for stygofauna can be found in extensive deposits of alluvium and colluvium, sometimes with calcrete, over CID in valleys of the Hamersley Range, especially those with larger water courses in the Yandicoogina palaeovalley of the upper Weeli Wolli catchment. In addition to this there are deposits of alluvium and colluvium that occur at Coondewanna Flats, which provide habitat for stygofauna. CID on valley slopes may also provide suitable habitat.

The development envelope and groundwater drawdown contours of the combined proposal predominantly occur in the Weeli Wolli Creek catchment and the Coondewanna sub catchment.

Three primary aquifers exist within the Weeli Wolli catchment. These are the Upper Weeli Wolli Creek sub catchment and Marillana sub catchment, which drain into the

Lower Weeli Wolli Creek sub catchment. Of these, the Upper Weeli Wolli Creek sub catchment is most relevant to the development, containing:

- the orebody aquifer within the mineralised BIF
- the Wittenoom dolomite which is located within the low-lying areas
- overlying alluvial Tertiary Detritals and calcretes.

The Coondewanna sub catchment occurs in the western portion of the development envelope and acts as an internally draining system through Coondewanna Flats and into Lake Robinson. The sub catchment is comprised of Tertiary Detritals, calcrete/silicate and dolomite, with the structure of aquifers within this catchment being highly variable and not well documented. There may be perched aquifers within this sub catchment.

Groundwater levels have already been influenced by implementation of the approved proposal, and the water table generally sits between 18 to 23 mbgl in most of the sub catchment.

The surveys and supporting documentation present several limitations for the assessment of impacts on stygofauna species from the significant amendment and the combined proposal.

Summary – stygofauna

Previous surveys discuss stygofauna, including potentially restricted species, occurring within the combined proposal area, and species that were not previously impacted by the approved proposal but will be impacted by the significant amendment.

Bennelongia (2013) provided findings of surveys conducted between 2008 - 2011. The methods used in the Jinidi surveys were reportedly consistent with the EPA guidance on subterranean fauna available at the time. The surveys were carried out in the cumulative drawdown area in the Upper Weeli Walli catchment, which coincides with the combined proposal (Bennelongia 2025b). Based on available information in 2012, seven of the 51 species were not known to occur outside the cumulative drawdown area.

Bennelongia (2014) provided findings of surveys conducted between 2007 – 2014 in the Jirrpalpur and Packsaddle Ranges and intervening valley (North Flank) west of Hope Downs in the Upper Weeli Wolli catchment. The methods used in the MAC baseline subterranean fauna surveys were reportedly consistent with the EPA guidance on subterranean fauna available at the time. At the time of reporting in 2014, four of the 12 species were not known to occur outside the cumulative drawdown area.

In both studies, the species of *Syncarid Notobathynella* sp. were identified as species not known to occur outside the cumulative drawdown areas.

Bennelongia (2018) studies the South Flank and MAC areas. This assessment reviewed information from historical records within 100 x100 km area around the South Flank and Mining Area C study area. Data included available databases, previous literature, and studies, while records were accumulated in accordance with EPA guidelines at the time of collection. With an approximate 2,058 samples collected/reviewed, six of the seven of these species shown or predicted to have widespread distribution outside the area of impact, and the remaining species, *Bathynella* sp. 2 (South Flank) recorded from a single hole in the east of the MAR assessment area, and was considered potentially restricted to the South Flank MAR area.

The East Packsaddle is within the northeastern extent of the significant amendment area in the Upper Weeli Wolli Catchment and partially occurring within the Weeli Wolli PEC. Subterranean fauna surveys were conducted in this area from 2022-2024 by Biologic (2024). The methods used in the East Packsaddle subterranean fauna baseline surveys were reportedly consistent with the EPA guidance on subterranean fauna available at the time. These surveys identified 28 stygofauna species, of which 12 species were considered to be potentially restricted to East Packsaddle. Additional assessment by Bennelongia (2025) concluded a number of these species are unlikely to be restricted.

With regard to reliance on morphological identification, EPA (2021) notes that genetic sequencing would offer additional benefits to using morphology in isolation. Considering the differences in early morphological names reflecting that Nicolenella has morphological similarities to both Billibathynella and Notobathynella, there has been historical confusion about its identification, and there is caution required in the identification of the South Flank Nicolenella animals, the lack of genetic identification in this case creates a gap in information that is prohibitive for the purpose of impact assessment.

In summary, of the stygofauna samples identified, 38 were known from western areas of the Central Pilbara Hub, with eight species only known from the western areas; and the ninth species, *N.* sp. 13 (=Lineage B) known only from the western areas and more western parts of the combined proposal area. Impact to this species is likely due to drawdown at Coondewanna Flats.

Given the review of the adequacy of investigations and surveys, and the resulting gaps in information for potentially restricted stygofauna in the combined proposal area the EPA has determined the Precautionary Principle will apply for all restricted or potentially restricted stygofauna species occurring within Coondewanna Flats, South Flank and Weeli Wolli Spring when determining the significance of impact on this species and determining appropriate conditions for implementation of the significant amendment.

<u>Summary – troglofauna</u>

MAC consists of two parallel ranges of outcropping BIF, which are the Jirrpulpar and Packsaddle Ranges. The Packsaddle Range is hosted within the Tertiary Detritals, Joffre and Dales Gorge Members of the Brockman Iron Formation, while the Jirrpulpar Range occurs in the Tertiary Detritals, West Angelas Member of the Wittenoom Formation, and the Mount Newman and MacLeod Members of the Marra Mamba Iron Formation. Tertiary Detritals fill a deep valley between the Packsaddle and Jirrpulpar Ranges and are extensive outside the Development Envelope with the MacLeod Member extending to the south of the Jirrpulpar Range. These areas provide highly suitable habitats for troglofauna.

Southern Flank occurs on the south side of the Jirrpulpar Range and includes suitable troglofauna habitat found in the Mount Newman units of the Marra Mamba Iron Formation, West Angelas units of the Wittenoom Formation and the Tertiary Detritals.

Wide scale folding and faulting can be seen across the Development Envelope. East-west trending normal faults (south block down) occur throughout Packsaddle Range. At a regional scale this is mapped as one major fault. Major and minor thrust faults (south block up) have been identified throughout the Jirrpulpar Range; however these faults are not considered to form barriers to dispersal for troglofauna and may in fact aid dispersal in some instances.

The Northern RAV MAR Scheme and infiltration ponds are located approximately 3km north of the approved proposal. This area contains alluvium and colluvium which generally provide suitable habitat. This alluvium occurs throughout the Northern RAV MAR Scheme area and extends beyond the predicted mounding contours both to the east and west. Suitable troglofauna habitats also exist in the Quaternary sediments that generally cover the valley floor, which also extend to the northeast, southeast and west, and also to the south.

Previous surveys have identified 3,585 species of troglofauna representing 153 species. These have been assessed as part of the approval proposal and there are no further impacts to species at these locations as part of the combined proposal.

Twelve specimens from eight species have been collected from the groundwater mounding area associated with the Northern RAV MAR Scheme.

BHP committed to conducting further studies to close gaps in knowledge for potentially restricted troglofauna within the combined proposal.

Environmental Values

The environmental values that could be impacted by the significant amendment and combined proposal are:

- restricted and potentially restricted stygofauna

- restricted and potentially restricted troglofauna.

2.4.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the Request for Additional Environmental Information (dated 10 July 2025 and 10 December respectively) and revised Environmental Review Document (BHP 2025).

2.4.5 Potential impacts from the proposal

The significant amendment has the potential to significantly impact on subterranean fauna in the following manner:

- loss of troglofauna habitat as a result of excavation of mining pits, including impacts on restricted troglofauna species (direct)
- loss of stygofauna habitat due to development of mine pits below the water table and from changes in groundwater levels from dewatering, including impacts to restricted stygofauna species (direct)
- reduction in or changes to stygofauna habitat quality due to salinity changes associated with discharge of mine dewater (indirect)
- adverse impacts to stygofauna and troglofauna habitat from vegetation clearing, contamination, changes to surface water infiltration and construction of infrastructure (e.g. waste rock landforms) (indirect)
- adverse impacts to troglofauna habitat from changes to groundwater affecting humidity in the vadose zone (indirect).

The EPA considers that the potential indirect impacts associated with vegetation clearing, potential contamination, and the changes to infiltration from the placement of waste rock landforms and infrastructure on subterranean fauna habitat, and considering the proponent's minimisation measures, are unlikely to be material. Therefore, these issues are not considered further in this assessment.

Groundwater mounding resulting from the proposal in areas around the Northern RAV MAR scheme will result in inundation of the subterranean environment from 30mbgl up to 10 mbgl. The predicted groundwater mounding will potentially cause the loss or modification of suitable troglofauna habitat and individuals within the areas around the Northern RAV MAR scheme as the pre-MAR water levels in the Northern RAV MAR area are generally between 20 to 45 mbgl and suitable habitat for troglofauna is likely to be present within the surface scree, the Tertiary Detritals and potentially the basement rock.

Groundwater mounding associated with the two existing MAR schemes at Juna Downs and South Flank have previously been assessed and approved as part of the approved proposal.

The potential direct impact on troglofauna is the loss or modification of habitat and species assemblages from groundwater mounding at the Northern MAR RAV scheme.

Troglofauna known from outside the development envelope, identified within the significant amendment area, that BHP report have been assessed previously for the approved proposal include:

- *Lophoturus madecassus*, recorded at MAC Deposits A, B, F, R, P1, P2, P3, P4, P5 and Southern Flank, Eastern Ridge, Jimblebar, Jinidi, Juna Downs, Mindy, Mudlark, Orebody 19, Orebody 31, Orebody 39, Packsaddle East, Whaleback, Yandi, Northern RAV and Camp Hill
- *Japygidae DPL002*, recorded at MAC Deposits A, B, E, R, P1, P4, P6 and Southern Flank, Eastern Ridge, Jimblebar, Jinidi, Juna Downs, Mudlark, Orebody 18, Orebody 31, Whaleback, Northern RAV and elsewhere in the Pilbara
- *Ptinella* sp. *B01 49 323*, recorded at MAC Deposit P1 and Southern Flank, Eastern Ridge, Juna Downs, Weeli Wolli, Northern RAV. Elsewhere in the Pilbara.

Polyxenidae sp., *Japygidae BDP245* (DBP165 grp), and *Phaconeura* sp., were collected at Northern RAV, and *Allopnyxia* sp. *B01* is a widespread species. These taxa were not previously assessed for the approved proposal and occur within the proposal area.

There are no potentially restricted troglofauna species present within the mounding contours of the Northern RAV MAR.

Direct impacts to stygofauna, including restricted stygofauna species includes loss of habitat due to changes groundwater levels from dewatering.

Restricted stygofauna species known from the groundwater drawdown contours of the combined proposal, which have been identified within the significant amendment area include and therefore are potentially impacted, are summarised in Table 8. These include taxa identified by BHP in addition to taxa that are moderate to high risk and require further studies to close gaps in information, including likely impact.

Table 8: Potentially restricted stygofauna species

Species	Location
Dussartcyclops sp. *B10*	Coondewanna Flats
nr *Epactophanes* sp. *B01*	Northern Flank
B. sp. 1 (Weeli Wolli)	Weeli Wolli Spring
B. sp. 2 (South Flank)	South Flank
N. sp. 13 (=Lineage B)	Coondewanna Flats area
N. sp. 13 (=Lineage B)	South Flank
Chydaekata 2/UWA-B	Weeli Wolli Spring and Hope Downs mining area
C. UWA-C	Weeli Wolli Spring and Hope Downs mining area
Pilbarus sp. *Biologic-AMPH001*	Central part of the Combined Drawdown area and Hope Downs 2
Phreodrilidae BOL119 (AP SVC)	West of Coondewanna Flats
Naididae sp. *N1 LB-2015*	Within search area[1]
Australocamptus sp.	Within search area[1]
Phreodrilidae sp. *S06*	Within search area[1]
Achaeta sp. *OLIG021*	Within search area[1]
Halacaridae sp. *B01*	Within search area[1]
Recifella sp. *P1* (nr *umala*) (PSW)	Within search area[1]
Deminutiocandona mica	Within search area[1]
Meridiescandona sp. Biologic-OSTR057	Not identified
Notacandona modesta	Within search area[1]
Pilbaracandona nr *rosa*	Within search area[1]
Gomphodella sp. *Biologic-Stygoridgewayia trispinosa OSTR078*	Not identified
Stygoridgewayia trispinosa	Within search area[1]
Australoeucyclops karaytugi	Within search area[1]
Gordanitocrella sp. *Biologic-HAR030*	Within search area[1]

Chydaekata sp. *B01*	Within search area[1]
Paramelitidae Genus 2 *BAM232*	Within search area[1]
Paramelitidae sp. *Biologic-AMPH070*	Not identified
Pezidae sp. *Biologic-ACAR003*	Not identified

1. A 150x150 km search area around the combined proposal (Bennelongia (2025b)

2.4.6 Avoidance measures

The proponent has designed the proposal to avoid impacts to subterranean fauna by limiting groundwater mounding associated with the aquifer recharge at the Northern RAV MAR Scheme to 20 mbgl until the troglofauna habitats and/or assemblages within the groundwater mounding can be verified to occur outside the predicted impact areas.

2.4.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to subterranean fauna:

- Mounding at the Northern RAV MAR will be kept below 20 mbgl which will assist in retaining suitable above water table habitat for troglofauna (noting this will be lifted to 10 mbgl if and when the troglofauna values within the Northern RAV MAR are shown to occur outside the impact areas).
- Groundwater abstraction will be minimised to that which is required for implementation of the Proposal and will be compliant with existing licence GWL89501.
- BHP will investigate a reduced dewatering duration for the hydraulically connected pits to Coondewanna Flats.
- Towards the end of mine life, MAR will be optimised to increase water levels in the Weeli Wolli Springs catchment.

Part V, Division 3 of the EP Act

The Northern RAV MAR Scheme will be managed through the Part V licence (L7851/2002/6) of the EP Act.

2.4.8 Rehabilitation measures

The proponent has proposed the following rehabilitation measures relevant to subterranean fauna:

- Continue to manage rehabilitation and closure according to the measures in the Mining Area C Mine Closure Plan.

- The Northern RAV scheme will be shut off when no longer required and mounding will cease, allowing troglofauna assemblages within the area to recover (if present).

2.4.9 Assessment of impacts to environmental values

The EPA advises that the assessment of residual risks to subterranean fauna have been based on the proponent's investigations and application of the Precautionary Principle.

The EPA recognises the application of the mitigation hierarchy by the proponent in modifying the proposal to avoid direct disturbance impacts on subterranean fauna.

The EPA considered the key environmental values for subterranean fauna are likely to be impacted by:

- groundwater drawdown from the implementation of the Northern RAV MAR Scheme potentially reducing subterranean fauna habitat
- groundwater mounding from the implementation of the Northern RAV MAR Scheme potentially reducing subterranean fauna habitat.

The EPA has assessed the significant amendment in the context of the approved proposal while having regard to the combined and cumulative effect that the implementation of the proposal may have on subterranean fauna.

Troglofauna

During recent surveys for this significant amendment, 12 specimens from seven species have been collected from within the mounding contours of the Northern RAV MAR Scheme area to date. These species are:

- *Polyxenidae* sp.
- *Japygidae DPL002*
- *Japygidae BDP245* (DBP165 grp)
- *Lophoturus madecassus*
- *Phaconeura* sp.
- *Ptinella* sp. *B01*
- *Allopnyxia* sp. B01.

The EPA notes that the supporting documents indicate the presence of suitable habitat extending outside the mounding contours of the Northern RAV MAR Scheme, along with the survey reports provided that indicate that all species have distributions that

extend beyond the boundaries of the mounding contours. Verification from the proponent will occur through the Troglofauna Survey Report.

BHP committed to conducting further studies to close gaps in knowledge for potentially restricted troglofauna within the combined proposal.

The EPA considers that the impacts of the proposal, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for troglofauna.

The EPA considers that potential impacts can be managed through conditions A1 to set clearing limits, condition B1 for the management of Inland Waters including delaying implementation of the RAV MAR until impacts to troglofaunal communities are surveyed and understood, and through licencing of groundwater abstraction under the RiWI Act. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for subterranean fauna.

Stygofauna

Stygofauna surveys have collected at least 1,128 samples from 460 sample sites within the development envelope, and a further 86 samples taken from 26 sample sites in the groundwater mounding area for the proposed Northern RAV MAR Scheme. There are approximately 102 species of stygofauna known from the groundwater drawdown area of the combined proposal, and BHP has indicated nine species are only known from this area. BHP identified 9 potentially restricted stygofauna species located within the predicted additional groundwater drawdown area of the significant amendment. The EPA identified a further 17 species that may be restricted due to the additional information/statements in the ERD, or the supporting documents (Table 8).

Modelling of Coondewanna Flats predicts that drawdown will peak at up to 100 mbgl in the worst-case scenarios as a result of the combined proposal, at Weeli Wolli Spring up to 5.6 mbgl, in addition to the drawdown at South Flank, and stygofauna is likely to be impacted by this drawdown.

Due to gaps in information, the EPA has applied the Precautionary Principle to stygofauna it considers likely to occur within the Coondewanna Flats, South Flank and Weeli Wolli Spring areas, predicted to be impacted by drawdown from the significant amendment.

The EPA considers that the impacts of the proposal, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for stygofauna.

The EPA considers that potential impacts can be managed through conditions A1 to set clearing limits, condition B1 for the management of Inland Waters including delaying implementation of the RAV MAR until impacts to troglofauna communities are

surveyed and understood, and restricting groundwater drawdown in the Coondewanna Flats, South Flank and Weeli Wolli Springs until stygofauna distribution and/or habitat connectivity is established outside areas impacted by groundwater drawdown, and though licencing of groundwater abstraction under the RiWI Act. Implementation conditions will provide for environmental outcomes that are consistent with the EPA's objectives for subterranean fauna.

2.4.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the proposal on subterranean fauna environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 9.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

The EPA advises that the significant residual impact can be regulated through reasonable conditions (recommended conditions A1 and B1).

Recommended condition B1 includes the requirement of a Troglofauna Survey Report. The Troglofauna Survey Report is required prior to the mounding of groundwater above 20 mbgl (the approved proposal extent).

The Troglofauna Survey Report must show the likelihood, referring to robust scientific data and appropriate inferences, of potentially restricted troglofauna species occurring outside of the Northern RAV managed aquifer recharge scheme impact area. Where direct evidence of occurrence cannot be provided, evidence of troglofauna habitat connectivity between impacted and non-impacted areas can be provided. Evidence of distribution, range and habitat connectivity of potentially restricted troglofauna must be presented and discussed in a manner consistent with *EPA Technical Guidance – Subterranean fauna surveys for environmental impact assessment* (EPA 2021).

The proponent is required to submit the Troglofauna Survey Report to the CEO, for confirmation by notice in writing that:

1. there is sufficient robust scientific data and appropriately formed inferences, consistent with EPA (2021) that potentially restricted troglofauna species occur outside of the Northern RAV managed aquifer recharge scheme impact area, and/or
2. evidence of troglofauna habitat connectivity exists between impacted and non-impacted areas.

Until the CEO confirms the results of the Troglofauna Survey Report in writing, groundwater mounding associated with the operation of the Northern RAV managed aquifer recharge scheme will be limited to no more than 20 mbgl. Thereafter, the proponent must limit groundwater mounding associated with the Northern RAV managed aquifer recharge scheme to no more than 10 mbgl (the combined proposal).

Recommended condition B1 includes the requirement of a Stygofauna Report. The Stygofauna Report is required prior to the drawdown of groundwater in Coondewanna Flats, South Flank and Weeli Wolli Spring below the approved proposal extents for these areas.

The Stygofauna Report must identify potentially restricted stygofauna species occurring within the significant amendment drawdown area, referring to robust scientific data and appropriate inferences, and in a manner consistent with EPA (2021). The Stygofauna Report must then show the likelihood, referring to robust scientific data and appropriate inferences, of potentially restricted stygofauna species occurring outside of the groundwater drawdown impact area associated with the significant amendment. Where direct evidence of occurrence cannot be provided, evidence of stygofauna habitat connectivity between impacted and non-impacted areas can be provided. Evidence of distribution, range and habitat connectivity of potentially restricted stygofauna must be presented and discussed in a manner consistent with *EPA Technical Guidance – Subterranean fauna surveys for environmental impact assessment* (EPA 2021).

The proponent is required to submit the Stygofauna Report to the CEO, for confirmation by notice in writing that:

1. potentially restricted stygofauna species occurring within the significant amendment drawdown area have been identified, referring to robust scientific data and appropriate inferences, and in a manner consistent with EPA (2021).
2. there is sufficient robust scientific data and appropriately formed inferences, consistent with EPA (2021) that potentially restricted stygofauna species occur outside of the groundwater drawdown impact area associated with the significant amendment , and/or
3. evidence of stygofauna habitat connectivity exists between impacted and non-impacted areas.

Until the CEO confirms the results of the Stygofauna Report in writing, groundwater drawdown at Coondewanna Flats, South Flank and Weeli Wolli Springs will be limited to the extent of the approved proposal. Thereafter, the proponent must limit groundwater drawdown to the extent of the significant amendment proposal (the combined proposal).

The EPA has had regard to its conclusions in other recent assessments, including Marillana Creek (Yandi) Life of Mine Proposal.

Table 9: Summary of assessment for subterranean fauna

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1.	Groundwater mounding from the implementation of the Northern RAV MAR Scheme. Reduction of troglofauna habitat. Reduction or loss of restricted and potentially restricted troglofauna species.	The presence of suitable habitat extending outside the mounding contours of the Northern RAV MAR Scheme, along with the survey reports provided that indicate that all species have distributions that extend beyond the boundaries of the mounding contours. Verification from the proponent will occur through the Troglofauna Survey Report. The EPA considers that the impacts of the proposal, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for troglofauna.	**Condition A1 (Limits and Extent)** Limitations and extent of groundwater mounding from the Northern RAV MAR scheme. **Conditions B1 (Inland Waters)** Troglofauna Survey Report that confirms occurrence of potentially restricted troglofauna species in non-impacted areas, and/or habitat connectivity between the impacted and non-impacted areas. Approval of the survey report by the CEO. Limits of groundwater mounding retained at approved proposal extent until distribution of potential restricted troglofauna species are confirmed.
2.	Groundwater drawdown associated with increased groundwater abstraction. Reduction of stygofauna habitat. Reduction or loss of restricted and potentially restricted stygofauna species.	The EPA has applied the Precautionary Principle to all stygofauna species it considers likely to occur within the Coondewanna Flats, South Flank and Weeli Wolli Spring areas to be impacted by drawdown from the significant amendment based on gaps in information provided by the proponent. The EPA considers that the impacts of the proposal, in the context of the significance of the environmental values at risk, can be managed to provide for environmental outcomes that are consistent with the EPA's objectives for stygofauna.	**Condition A1 (Limits and Extent)** Limitations and extent of groundwater abstraction. **Conditions B1 (Inland Waters)** Stygofauna Report that confirms occurrence of potentially restricted stygofauna species outside of groundwater drawdown impact area and/or habitat connectivity extends beyond the groundwater drawdown. Approval of the survey report by the CEO. Limits of groundwater drawdown retained at

Residual impact or risk to environmental value		Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
			Coondewanna Flats, South Flank and Weeli Wolli Spring at approved proposal extent until distribution of potential restricted stygofauna species are confirmed.

2.5 Greenhouse Gas Emissions

2.5.1 Environmental objective

The EPA environmental objective for greenhouse gas emissions is to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable (EPA 2024).

2.5.2 Policy context

The information used to inform the assessment of the proposal's greenhouse gas emissions are provided in Appendix E.

The EPA considers it has adequate information to have due regard to its Greenhouse Gas Environmental Factor guideline (EPA 2024).

2.5.3 Assessment context

GHG emissions from a cumulative range of sources have an impact on WA's environment, even if the specific impact of a particular proposal's emissions may not be known with certainty. This is because there is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will have an impact on WA's environment and environmental values. For example, climate change has already caused a significant drying of the State's south-west, which in turn places significant additional pressures on water resources, flora and fauna, marine environmental quality and social surroundings.

There is also an established correlation between global temperature rise and GHG emissions. The EPA advises that for every 1,000 billion (G) tonnes (t) CO_2 emitted by human activity, global surface temperature rises by 0.45°C, as a best estimate, with a likely range from 0.27°C to 0.63°C (IPCC, 2023). The best estimates of the remaining global carbon budgets from the beginning of 2020 are 500 Gt CO_2 for a 50% likelihood of limiting global warming to 1.5°C (IPCC, 2023). Remaining carbon budgets from 2020 depend on emissions and emissions mitigation from that time (IPCC 2023).

The EFG GHG (EPA 2024) provides that GHG emissions from a proposal will be considered where they are reasonably likely to exceed 100,000 tonnes (t) of carbon dioxide equivalents (CO_2-e) of scope 1 or scope 2 emissions in any year. This is the same as the (scope 1) threshold criteria for designation of a large facility under the Australian Government's Commonwealth Safeguard Mechanism. The scope 1 and scope 2 emissions provided by the proponent for this proposal exceed this threshold. Scope 3 emissions for the proposal are also expected to exceed 100,000 t CO_2-e per annum.

2.5.4 Potential emissions from the proposal

The Scope 1 and Scope 2 emissions from the significant amendment are expected to be 1,705,449 t CO_2-e, which represents an 8.85% increase from the approved proposal.

Scope 1 GHG emissions resulting from the proposal include those from heavy haulage and ancillary equipment, dewatering, and land clearing.

Scope 2 GHG emissions resulting from the proposal are those generated from Yarnima Power Station (electricity generation).

Scope 3 GHG emissions include downstream emissions associated with ship loading activities at Port Hedland, shipping of products to customers and customer's processing of iron ore in steelmaking.

The proponent provides estimates of (unmitigated) annual average and peak GHG emissions for both the significant amendment and the combined proposal.

GHG emissions – Significant Amendment

- Scope 1 emissions covered by the Safeguard Mechanism: annual average of 34,563 t CO_2-e with a peak of 242,126 t CO_2-e
- Scope 1 emissions not covered by the Safeguard Mechanism: annual average of 2,442 t CO_2-e with a peak of 12,932 t CO_2-e
- Scope 2 emissions: annual average of 10,317 t CO_2-e with a peak of 62,137 t CO_2-e

GHG emissions – combined proposal

The proponent estimated GHG emissions associated with the Mining Area C Significant Amendment proposal (combined proposal) to be:

- Scope 1 emissions covered by the Safeguard Mechanism: annual average of 431,311 t CO_2-e with a peak of 1,032,246 t CO_2-e

- Scope 1 emissions not covered by the Safeguard Mechanism: annual average of 10,453 t CO_2-e with a peak of 25,377 t CO_2-e
- Scope 2 emissions: annual average of 120,408 t CO_2-e with a peak of 171,979 t CO_2-e
- Scope 3 emissions: annual average of 120,822,587 t CO 2-e with a peak of 207,440,658 t CO_2-e

Table 10: Scope 1 and scope 2 emissions associated with the significant amendment proposal, approved proposal, and combined proposal

Emission Type		**Significant amendment (t CO_2 e) (averaged over 38 years)**	**Approved Proposal (t CO_2 e) (averaged over 35 years)**	**Combined Proposal (t CO_2 e) (averaged over 38 years)**
Scope 1 (covered by Safeguard Mechanism)	Annual average	34,563	430,755	431,311
	Total	1,313,404	15,076,411	16,389,815
Scope 1 (not covered by Safeguard Mechanism)	Annual average	2,442	8,795	10,543
	Total	92,812	307,814	400,626
Scope 2	Annual average	10,317	119,528	120,408
	Total	392,045	4,183,472	4,575,517

Total scope 1 emissions not covered by the Safeguard Mechanism for the approved proposal and the corresponding average have been calculated by DWER based on information provided in supporting documentation.

Cumulative effects

WA's yearly scope 1 emissions based on 2022 levels were 82.5 million tonnes (Mt) t CO_2-e (DCCEEW 2024) and national emissions for 2022 were 432.9 Mt CO_2-e (DCCEEW 2023). The annual average estimated scope 1 GHG emissions from the combined proposal would constitute approximately 0.52% of WA's total emissions and 0.1% of Australia's total reported GHG emissions. The average emissions of the combined proposal including both scope 1 and scope 2 emissions accounts for 0.67% of WA's total emissions and 0.12% of Australia's total reported GHG emissions.

The EPA considers that the proponent's estimated GHG emission quantities are a reasonable basis for the assessment.

2.5.5 Avoidance measures and minimisation measures including best practice review and benchmarking

The proponent has identified the following measures to minimise GHG emissions:

- avoiding land clearing where possible by using existing infrastructure
- as part of the fleet decarbonisation strategy, the proponent is moving towards the electrification of its haul trucks. This displacement is expected to occur post 2030.
- development of electric excavators and replacing diesel light vehicles with electric vehicles
- reduction of Scope 2 emissions at Yarnima Power Station in accordance with the Safeguard Mechanism with a 34.4% decline rate by 2030 and net zero by 2050

With these mitigation measures, the proponent estimates that the lifetime (approx. 48 years) scope 1 emissions would be reduced by 9,459,174 t CO_2-e from 16,389,815 t CO_2-e to 6,930,641 t CO_2-e (BHP 2025a).

The EPA notes that, until emissions are under 100,000 CO_2-e per annum, the proponent will be subject to reporting requirements of the Clean Energy Regulator to comply with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act), and also subject to the NGER Emissions Reduction Fund Safeguard which requires facilities whose net emissions exceed the safeguard threshold to keep emissions at or below baseline.

2.5.6 Emissions trajectory to 2050

The proponent's long-term goal for both scope 1 and scope 2 emissions from its operated assets is to achieve net zero operational emissions by 2050.

The proponent has provided indicative scope 1 emissions reduction trajectory for the combined proposal aligned with the Safeguard Mechanism (Figure 24).

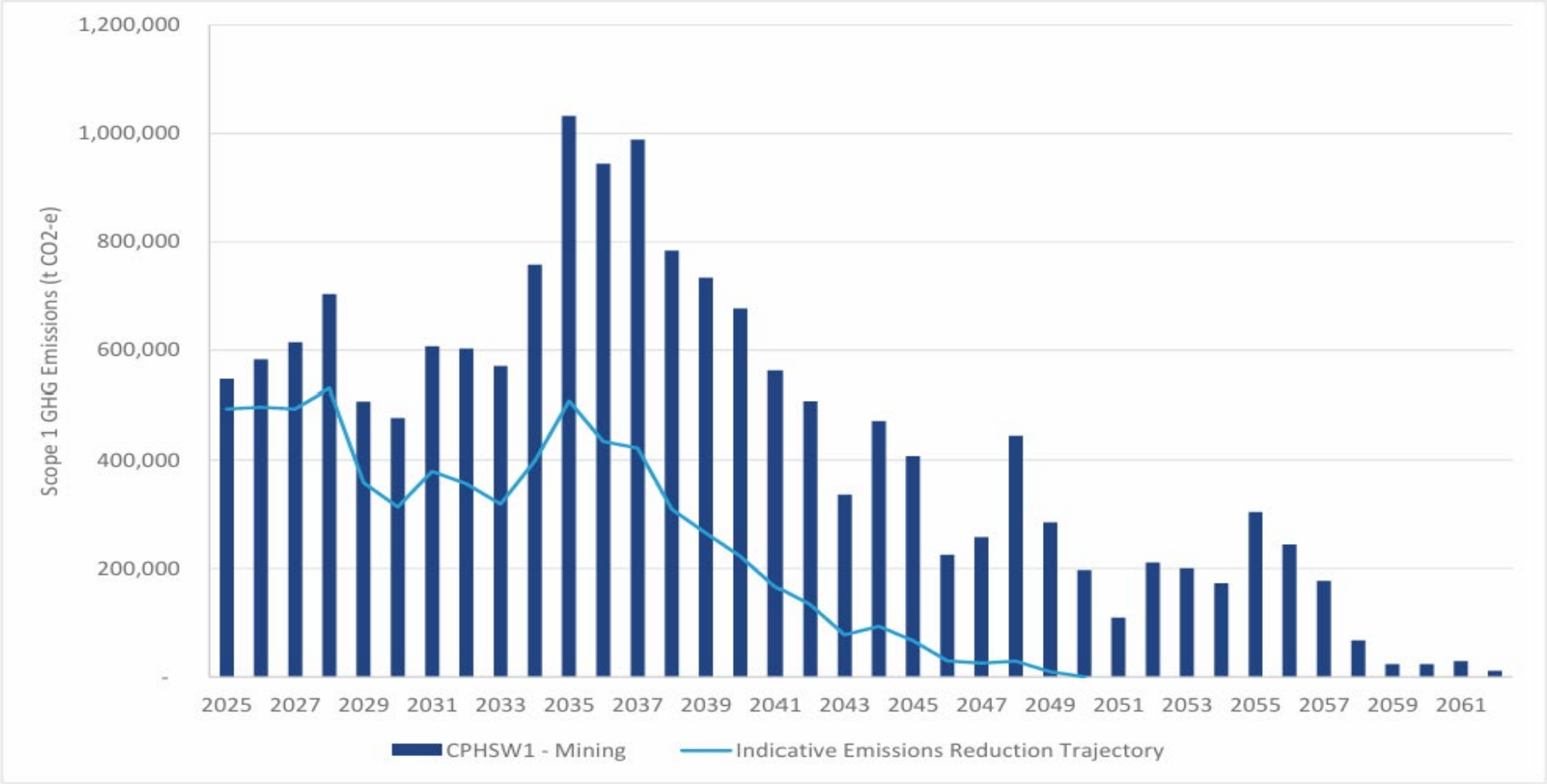

Figure 19: Scope 1 emissions indicative reduction trajectory

The EPA notes that the proponent's indicative emissions for scope 1 emissions will mitigate 9,459,174 t CO_2-e over the life of the combined proposal, compared to this (unmitigated) 'base case' scenario.

2.5.7 Scope 3 GHG emissions

Scope 3 emissions relating to this proposal are predominantly related to the processing of mined iron ore into steel products and are estimated to be 119,422,893 t CO_2-e (annual average) and 4,494,944,816 t CO_2-e over the life of the combined proposal.

The EPA notes the proponent's long-term, albeit uncertain, goal of net-zero scope 3 emissions by 2050 and the current measures being undertaken by the proponent with downstream customers and suppliers to reduce scope 3 emissions.

The EPA notes that some downstream emissions are operational emission of other BHP Iron Ore controlled facilities, such as Port Hedland. The EPA understands reductions in emissions from those operations will be managed through operational decarbonisation strategies described in the ERD (BHP 2025).

The EPA encourages the proponent to take all measures it can reasonably take to reduce scope 3 emissions.

2.5.8 Offsets

The proponent prioritises GHG emissions reductions at its operated assets to achieve its scope 1 and scope 2 targets, however, acknowledges there is a role for offsets i.e. Australian Carbon Credits Units and Safeguard Mechanism Credits (SMC). To ensure targets are met, the proponent will use either banked SMCs from prior year, transfer SMCs from other BHP facilities and/or retiring eligible, high quality offsets in a temporary or transitional nature while abatement options are being studied as well as 'hard to abate' emissions with limited or no current technological solutions, and where access to renewable energy is constrained.

This approach is consistent with the principle of that offsets should be a last resort, applied only after all reasonable avoidance and minimisation measures have been implemented.

The EPA considers it is likely that the proponent will need to utilise carbon offsets to meet the emissions reduction trajectory. However, the EPA also acknowledges that the proponent's future decarbonisation strategies will contribute to reducing operational GHG emissions from the combined proposal.

The EPA considers that the proponent has undertaken due diligence investigations and its strategy of building a portfolio of offsets, using a variety of short and long-term

sourcing approaches, are likely to ensure sufficient offsets are available that satisfy integrity principles.

2.5.9 Other decision-making processes – Commonwealth Safeguard Mechanism

The proponent has identified that the combined proposal will be a designated large facility under the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act). Proposals regulated under the Safeguard Mechanism are required to take actions to reduce emissions to achieve Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050, as legislated by the *Climate Change Act 2022* (CC Act).

As the combined proposal is an existing facility, it will be subject to site specific emissions intensity of 0.00476 t CO_2-e/t iron ore.

The Safeguard Mechanism will require the proponent to apply a 4.9% annual decline rate for financial years commencing 1 July 2023 to 1 July 2029. From 1 July 2030, the annual decline rate has been notionally set at 3.285% which represent a linear trajectory to net zero by 2050.

Scope 1 emissions not covered under the Safeguard Mechanism are primarily associated with vegetation clearing and are estimated to be 10,543 t CO_2-e per annum (maximum (peak) of 25,377 t CO_2-e) and 400,626 t CO_2-e over the life of the combined proposal.

The EPA notes that the proponent has adopted a scope 1 emissions reduction trajectory that aligns with the Safeguard Mechanism.

The EPA understands that annual residual scope 1 emissions not covered by the Safeguard Mechanism are below 100,000 t CO_2-e per annum.

The EPA is of the view that emissions reductions required under the Safeguard Mechanism represents as far as practicable for the reduction of GHG emissions from the combined proposal. The EPA has recommended a condition that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism (recommended condition B4).

2.5.11 Summary of key factor assessment and recommended regulation

The EPA considers that the emissions avoidance, minimisation and offset proposed by the proponent are generally consistent with the EPA's factor objective to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable.

The EPA notes that as a result of the proponent's scope 1 GHG emission reduction measures and operation of the combined proposal to achieve the proposed emission

reduction targets, there is expected to be mitigation of approximately 9,459,172 t CO_2-e of scope 1 GHG emissions over the life of the proposal.

The EPA recognises that the significantly strengthened Commonwealth Safeguard Mechanism requires the proponent to take action to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. The EPA considers that emissions reductions required under the Safeguard Mechanism represent the best and most practicable way to reduce emissions from the combined proposal. The EPA has recommended a condition that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism (recommended condition B4)

Scope 3 emissions form a large proportion (>99%) of the total GHG emissions over the life of the combined proposal and are estimated to be, on average, 120,822,587 t CO_2-e per annum. The EPA notes that the proponent has taken measures to reduce scope 3 emissions and encourages the proponent to take further reasonable opportunities as they arise through the life of the combined proposal to further reduce scope 3 emissions.

Table 11: Summary of assessment for greenhouse gas emissions

Residual emissions		Assessment finding	Recommended conditions and DMA regulation
1.	Scope 1 emissions of the combined proposal are expected on average to be 441,854 t CO_2-e per annum (up to a maximum of 1,050,515 t CO_2-e in FY35) and reduce to net zero by 2050. Scope 1 emissions of the significant amendment proposal are expected on average to be 37,006 t CO_2-e per annum (up to a maximum of 243,865 t CO_2-e in FY45) and reduce to net zero by 2050. Scope 2 emissions from the combined proposal are expected on average to be 120,408 t CO_2-e per annum (up to a maximum	The proponent has adopted avoidance and mitigation measures to reduce GHG emissions at commencement of the significant amendment. Scope 1 emissions from the significant amendment and combined proposal, except those with land use change (vegetation clearing) are covered by the Safeguard Mechanism. The EPA recognises that the Commonwealth Safeguard Mechanism requires the proponent to take actions to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission	**Condition B4: (Greenhouse Gas Emissions)** Reporting of obligations under the National Greenhouse and Energy Reporting Act (NGER Act 2007) and Safeguard Mechanism (SGM). DMA Regulation Scope 1 emissions covered under the Safeguard Mechanism.

Residual emissions		Assessment finding	Recommended conditions and DMA regulation
	171,919 t CO_2-e in FY50). Scope 2 emissions from the proposal are expected on average to be 10,317 t CO_2-e per annum (up to a maximum 62,137 t CO_2-e in FY41). Scope 3 emissions of the combined proposal are estimated to be up to 120,822,587 t CO_2-e per annum (up to a maximum 207,440,658 t CO 2-e in 2029).	reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. GHG emissions associated with vegetation clearing are below 100,000 t CO 2-e (annual maximum peak of 25,377 t CO_2-e). The EPA notes that offsets are likely to meet the emissions reduction trajectory and considers that the proponent has undertaken due diligence and proposed a range of short and long-term offset approaches. The EPA considers that the proponent has implemented measures to reduce scope 3 emissions, however, considers that further opportunities are expected to arise. The EPA encourages the proponent to take all reasonable measures to reduce scope 3 emissions. The EPA is of the view that emissions reductions required under the Safeguard Mechanism represent an as far as practicable reduction of the proposal's scope 1 GHG emissions, and therefore the likely environmental effects of the proposal can be mitigated to achieve consistency with the environmental factor objective for GHG emissions. The EPA has recommended a condition	

Residual emissions		Assessment finding	Recommended conditions and DMA regulation
		that requires the proponent to notify the State of substantial change to its obligations under the Safeguard Mechanism.	

2.6 Social Surroundings

2.6.1 Environmental objective

The EPA environmental objective for social surroundings is to protect social surroundings from significant harm (EPA 2023).

The proponent's assessment of potential impacts of Aboriginal cultural heritage considered the application of the *Aboriginal Heritage Act 1972* (AH Act).

2.6.2 Investigations and surveys

The EPA advises the investigations and surveys used to inform the assessment of the potential impacts to flora and vegetation from the significant amendment are provided in Appendix E.

The proponent has undertaken over 200 archaeological and ethnographic surveys in the development envelope as part of the approved proposal. Heritage values identified were identified by the proponent in consultation with Traditional Owners and heritage consultants.

The surveys involved pedestrian transects that covered the entire development envelope and were conducted by qualified archaeologists and anthropologists in partnership with Banjima participants (BHP 2025a).

2.6.3 Assessment context: existing environment

The proposal development envelope is within the both the Banjima Native Title determination area (WCD2014/001) which is represented by the Banjima People, and also intersects with the Nyiyaparli and Nyiyaparli #3 Native Title determination area (WCD2018/008) which is represented by the Nyiyaparli People. The proponent has ongoing relationships with both the Banjima People and the Nyiyaparli People by way of formal Comprehensive Agreements and associated registered Indigenous Land Use Agreements (ILUA).

The proposal is located within the Pilbara-Gascoyne Drainage Division within two regional river basins, the Fortescue River and the Ashburton River. The Fortescue River flows west through Fortescue Marsh which is a place of great significance

The following significant sites relating to water values were identified as culturally significant to the Banjima People within and in the vicinity of the development envelope:

- Marillana Creek, including the Flat Rocks site
- Yandicoogina Gorge
- Coondewanna Flats and Lake Robinson
- Weeli Wolli Creek and Weeli Wolli Springs
- Ben's Oasis

These significant sites are considered to be the environmental values that could be impacted by the significant amendment and combined proposal.

Native Title boundaries are presented in Figure 22 .

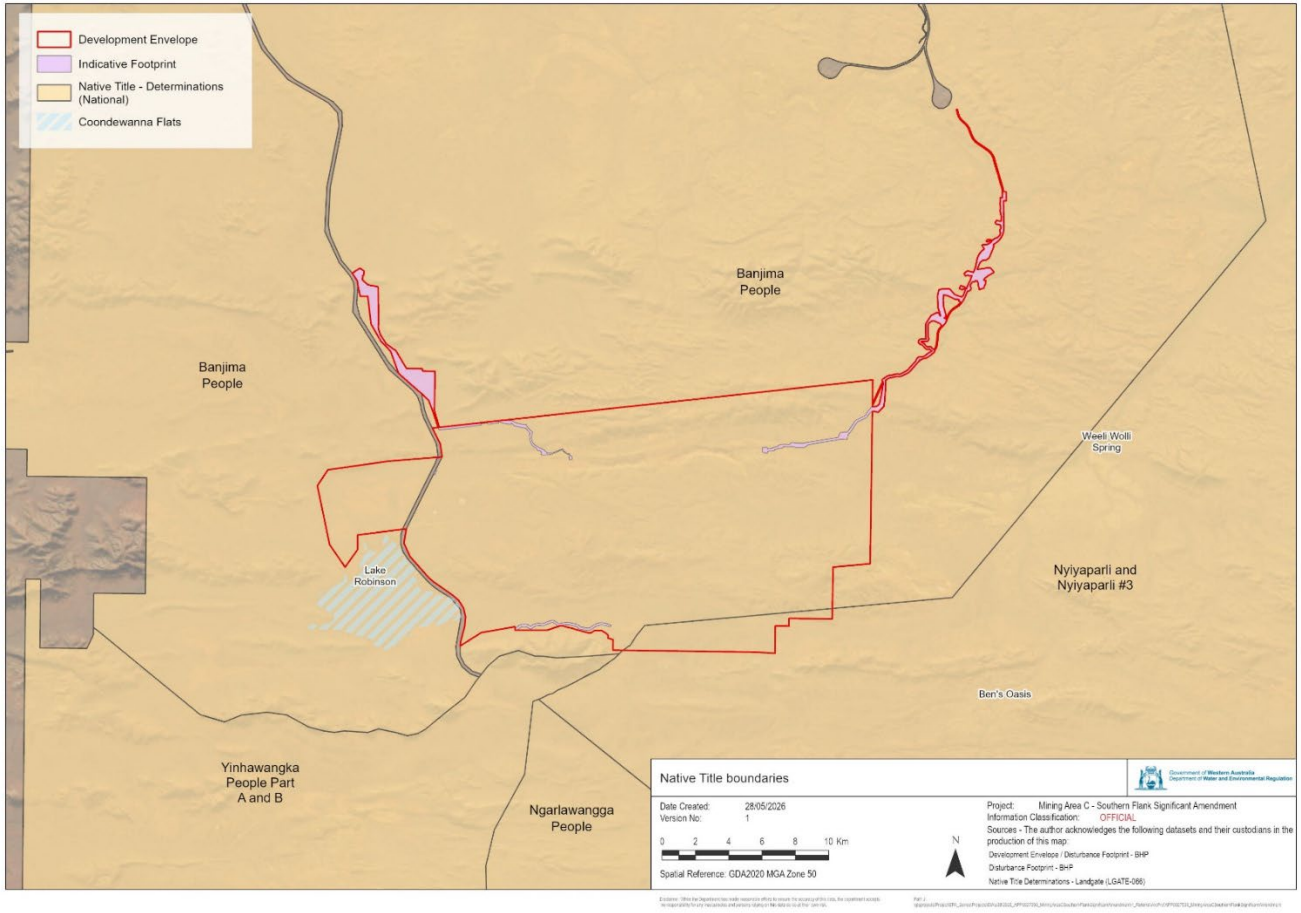

Figure 20: Native Title boundaries

2.6.4 Consultation

Public consultation on the proposal raised concerns about the level of engagement with Traditional Owners and impacts to the culturally significant areas Weeli Wolli Springs, Weeli Wolli Creek, and Yandicoogina Creek.

The EPA undertook additional targeted consultation with both the Banjima Native Title Aboriginal Corporation and the Karlka Nyiyaparli Aboriginal Corporation Registered Native Title Body Corporate. The key matters raised during this consultation period include:

- surplus water discharge to creek lines such as Marillana Creek
- lack of third-party data sharing that would enable long term water modelling.

2.6.5 Potential impacts from the proposal

The following impacts have been identified as a result of the proposal:

- disturbance of cultural heritage sites and values (including removal of ethnobotanically significant flora and habitat supporting native fauna of cultural significance)
- impacts to access, landscape and amenity (including impacts from water and dust)
- degradation of social, cultural and heritage values.

2.6.6 Avoidance measures

The proponent has proposed the following avoidance measures:

- modifying the development envelope and disturbance footprint to avoid direct impacts to culturally significant sites where practicable
- restricting activities to previously disturbed or cleared land in unsurveyed areas until Banjima Traditional Owners confirm there are no heritage sites at risk.

2.6.7 Minimisation measures (including regulation by other DMAs)

The proponent has prepared a Social Cultural Heritage Management Plan that provides the following to minimise the direct and indirect impacts to social surroundings:

- identifies all Aboriginal cultural heritage sites within the development envelope
- site specific avoidance, management and monitoring measures

- provisions for ongoing land access.

The proponent will also implement the following environmental management plans to mitigate impacts to cultural values that relate to other EPA factor objectives:

- Fauna Management Plan (BHP 2024)
- Mining Area C Mine Closure Plan (BHP 2024)
- Central Pilbara Water Resource Management Plan (BHP 2025).

Aboriginal Heritage Act 1972

Approval under the *Aboriginal Heritage Act 1972* (AH Act) is required prior to impacting registered and lodged heritage sites. The EPA notes that the AH Act does not apply to sites outside of the development envelope, or to indirect impacts within the development envelope.

2.6.8 Rehabilitation

The proponents closure strategy includes provisions to backfill all pits in Mining Area C and Highway Deposits to a level that avoids the creation of permanent pit lakes, manage waste rock including waste rock capable of generating acid mine drainage (AMD), and management of pit lakes.

The proponent will implement the Mining Area C MCP (BHP 2024) to meet the following objectives:

- ensure that the combined proposal is decommissioned and rehabilitated to be safe, stable and non-polluting and in an ecologically sustainable manner
- undertake progressive manner where practicable.

The proponent will work with the Banjima Traditional Owners in relation to the rehabilitation of ethnobotanical values which includes the use of ethnobotanical species in seed mixes and/or propagation for planting in areas to be rehabilitated.

2.6.9 Assessment of impacts to environmental values

The EPA considered that the key social surroundings values likely to be impacted by the proposal are Aboriginal Heritage, access and amenity.

It is noted that impacts to Aboriginal cultural heritage values may occur through impacts to inland waters and ethnobotanical impacts such as impacts to flora and vegetation and terrestrial fauna (see sections 2.1, 2.2 and 2.3 of this report).

Indirect impacts to Aboriginal heritage

In its targeted consultation with the Banjima Traditional Owners, they expressed concern over the use of creek discharge as a surplus water management tool. The proposal involves surplus water discharge into the upper Marillana Creek, which has the potential to impact on the Marillana Creek Pools. Surplus water discharge into the lower Marillana Creek is downstream of the Flat Rocks and Marillana Creek Pools site and will not intercept with any heritage sites where water is a key feature.

To address these concerns, the proponent will implement a 90-day drying period during the dry season to minimise impacts from the Upper Marillana Creek discharge, and limit the operation of this method to a duration of five years from commissioning.

Changes to groundwater regimes have the potential to indirectly impact the significant sites of Weeli Wolli Springs, Ben's Oasis and Coondewanna Flats.

The EPA considers that its assessment of the inland waters factor objective will likely ensure that indirect impacts of the proposal will meet the factor of social surroundings factor objective. The EPA has recommended the following:

- condition B1-1 to protect ethnobotanical values associated with Weeli Wolli Springs, Ben's Oasis and Coondewanna Flats
- condition B1-1 to place an extent on the wetting front created from surplus water discharge into the Upper Marillana Creek.

Direct Impacts to Aboriginal Heritage Sites

The proponent has conducted archaeological and ethnobotanical surveys over all portions of the indicative footprint and 90% of the development envelope and has indicated that it will manage Aboriginal Cultural Heritage accordance with the cultural heritage management plans (CHMPs).

The EPA notes that the proponent would require consent from the Minister for Aboriginal Affairs to alter Aboriginal sites under the AH Act. The proponent has advised that consent would be sought under the legislation for the disturbance of any sites that cannot be avoided.

The EPA is satisfied that the processes provided under the AH Act can mitigate potential direct impacts to Aboriginal sites within the development envelope to meet the EPA's objectives because:

- the Aboriginal Cultural Heritage Committee must evaluate the importance and significance of the sites and make a recommendation to the Minister for Aboriginal Affairs before the alteration occurs
- the Minister for Aboriginal Affairs consent is required before the alterations occurs

- new information about Aboriginal sites which are found after consent has been granted must be notified to the Minister for Aboriginal Affairs
- the consultation policy for the AH Act expects that all relevant Traditional Owners are consulted before consent is considered
- provisions relating to the protection of Aboriginal sites apply even if sites or relevant heritage features are not registered or lodged with DPLH
- the AH Act makes it an obligation to report Aboriginal cultural sites or objects to DPLH
- consent can include conditions for the protection, or mitigaton or management of sites in the consent area
- relevant Traditional Owners can apply to the State Administrative Tribunal for a review of the Minister's decision.

The EPA recognises that the AH Act does not apply to sites outside the development envelope, or to indirect impacts to Aboriginal Cultural Heritage.

In view of the proponent's own consultation and the EPA's targeted consultation with the Banjima and Nyiyaparli Traditional Owners about these impacts, the EPA is of the view that reasonable consultation has taken place and has used this to inform its assessment.

The EPA considers its factor objective is likely to be met in respect of direct impacts to Aboriginal cultural heritage values subject to operation of the AH Act and implementation of recommended conditions B5-1 and B5-2, which require:

- no disturbance of the Aboriginal sites or to Aboriginal cultural heritage in the proposed disturbance footprint other than where consent is granted for the use of the land under the *Aboriginal Heritage Act 1972*
- subject to reasonable health and safety requirements, no interruption of ongoing access to land utilised for traditional use or custom by the native title parties
- avoid, where practicable, and otherwise minimise adverse impacts to Aboriginal cultural heritage within and surrounding the development envelope.

Loss or restriction of access to land for cultural purposes

The EPA has considered the potential impact of the proposal on restricting access to the land by the Banjima Traditional Owners for cultural purposes. The proponent has advised that access to the proposed indicative footprint will be restricted for the duration of land clearing and construction of the proposal, and the installation of

pipelines and diversions. The proponent will continue to manage access to the site for the Banjima Traditional Owners as per the Land Access Protocol.

Cumulative impacts

Given there are no direct impacts to Aboriginal sites as part of the proposal, the EPA considers that there are no cumulative impacts.

Rehabilitation

The EPA advises that environmental outcomes should be considered during the closure process. The EPA notes that for long-lived mines, there is a specific need to ensure they are closure ready well in advance of decommissioning through appropriate research, field trials, and progressive rehabilitation. The EPA considers that during operation and closure are required.

The EPA considers the regulatory framework under the Mining Act for mine closure is appropriate for some aspects such as landform stability. However, there is a need to have specific environment outcomes to ensure rehabilitation and closure is conducted in a manner that minimises impacts to social surroundings. The EPA has therefore recommended condition B5-4 to ensure that the Banjima People are consulted on the achievement of rehabilitation outcomes in condition B6.

2.6.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the significant amendment on social surroundings environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 11.

The EPA advises that the significant residual impact can be regulated through reasonable conditions (recommended conditions A1 and B2) and counter-balanced by offsets (recommended condition B6) so that the native vegetation in ‘Good’ to ‘Excellent’ condition, locally significant vegetation associations, and priority flora species are protected; and the environmental outcome is consistent with the EPA objective for flora and vegetation.

The EPA has had regard to its conclusions in other recent assessments, including Marillana Creek (Yandi) Life of Mine Proposal.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 12: Summary of assessment for social surroundings

Residual impact		Assessment finding	Recommended conditions and DMA regulation
1.	Indirect impacts to Aboriginal cultural heritage values.	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage values associated with changes to groundwater and surface water regimes. The EPA advises that this residual impact should be subject to condition B1 to ensure that environmental values associated with significant sites are preserved.	**Condition A1 (Limitations and extent of proposal)** **Condition B1 (Inland Waters)** No adverse impacts to Weeli Wolli Springs PEC, Coolibah-Lignum PEC. No increase to groundwater levels at Yandicoogina Gorge beyond historical levels. Limit on the wetting front extending from discharge into the Upper Marillana Creek.
2.	Direct impacts to Aboriginal heritage features/sites	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage associated with disturbance to heritage sites or features. The EPA advises that this residual impact should be subject to recommended condition B5-1 to ensure impacts to Aboriginal heritage sites are identified and avoided unless consent is granted through another decision-making process in consultation with the Traditional Owners (recommended condition B5-1). The EPA concludes that subject to regulation by other DMA's and the recommended conditions, the environmental outcome is likely to be consistent with the EPA's objective for social surroundings.	**Condition A1 (Limitations and extent of the proposal)** **Condition B5 (Social surroundings)** Avoid disturbance of Aboriginal cultural heritage sites unless consent is granted or authority is given to disturb that site under the AH Act and has involved reasonable steps to consult with the relevant Native Title Party/parties.
3.	Loss or restriction of access to land for cultural purposes.	The EPA advises there is a residual impact to Aboriginal cultural heritage through the loss of access to, or restriction of access to, the land for cultural activities. The EPA recommends condition B5-1 to ensure	**Condition B5 (Social surroundings)** No interruption of ongoing access to land utilised for traditional use or custom by the relevant Traditional Owners.

Residual impact		Assessment finding	Recommended conditions and DMA regulation
		Traditional Owner's access to the land for traditional or cultural purposes, subject to reasonable health and safety requirements. The EPA considers that implementation of the recommended condition would ensure consistency with the EPA's objective for social surroundings.	

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors and environmental values individually in the key factor assessments above, given the link between the key environmental factors, the EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole environment.

The EPA has considered the proposal in the context of cumulative and holistic impacts within the regional setting.

Inland water – flora and vegetation – terrestrial fauna – subterranean fauna

There is a high-level of connectivity between inland waters, flora and vegetation, terrestrial fauna and subterranean fauna. Flora and vegetation, terrestrial fauna, and subterranean fauna have an integral reliance on inland waters to sustain and maintain growth. The surface water catchments and groundwater aquifers support groundwater-dependent ecosystems such as vegetation and fauna habitat.

Minimising impacts to values of inland waters will also minimise impacts to conservation significant flora and fauna species, vegetation, subterranean fauna, and fauna habitat.

Conservation significant flora and vegetation provide shelter, dispersal, foraging, breeding, and/or roosting habitat for significant fauna, such as the Pilbara olive python, northern quoll, and grey falcon. Minimising impacts to flora and vegetation will minimise impacts to terrestrial fauna.

The EPA considers that the proposed mitigation and management measures and recommended conditions for managing impacts to inland waters will also mean the interrelated impacts to the health of other factors, including the values associated with flora and vegetation and terrestrial fauna, are likely to be consistent with the EPA environmental factor objectives. In addition, the EPA considers that the recommended conditions and proposed mitigation and management measures for impacts to flora and vegetation will also mean the interrelated impacts to values of terrestrial fauna are likely to be consistent with the EPA environmental factor objective.

Greenhouse Gas Emissions

There is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will impact on Western Australia's environment and environmental values.

The EPA considers that the Safeguard Mechanism and the proposed conditions relating to GHG emissions will ensure that the impacts to other factors and values of

the environmental are likely to be consistent with the EPA environmental factor objectives.

Social surroundings

There is a direct link between Aboriginal culture and the physical or biological aspects of the environment. Access to land, ability to carry out traditional Aboriginal customs and areas of cultural importance may be impacted through impacts to environmental factors of flora and vegetation, terrestrial fauna and inland waters. Water resources are important to the Banjima Traditional Owners and Nyiyaparli Traditional Owners. The EPA recognises the strong cultural links between both Nyiyaparli People and Banjima People, and values of inland waters, flora and vegetation, and terrestrial fauna.

The EPA considers that the proposed mitigation and management measures, recommended conditions and management via other regulatory processes for impacts to flora and vegetation, terrestrial fauna and inland waters will also mean the interrelated impacts to the values of social surroundings will likely be consistent with the EPA environmental factor objectives.

Summary of holistic assessment

When the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the EPA formed the view that the impacts from the proposal would not alter the EPA's views about consistency with the EPA's factor objectives as assessed in section 2.

4 Offsets

Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual impacts of a proposal.

Consistent with the WA Environmental Offsets Guidelines (Government of Western Australia 2014), the EPA may consider the application of environmental offsets to a proposal where it determines that the residual impacts of a proposal are significant, after avoidance, minimisation and rehabilitation have been pursued.

The EPA considers that the clearing of native vegetation and impacts on other associated environmental values in the Pilbara IBRA bioregion is significant where the cumulative impact may reach critical levels if not managed (EPA 2014). The Pilbara's unique land tenure hampers the delivery of offsets, and the Pilbara Environmental Offsets Fund (PEOF) has been established to provide a strategic landscape-scale approach that builds on regional programs to deliver environmental offset outcomes greater than can be achieved by individual proposals.

The PEOF's Governance Framework establishes transparent decision-making processes, clarity of roles and responsibilities, and guidance for project delivery. The DWER administers the PEOF with involvement from an Implementation Advisory Group made up of key stakeholders and experts and a Project Recommendation Group made up of representatives from State and Australian governments. The Minister for Environment is the primary decision-maker for the PEOF and approves projects that will address significant residual impacts and receive monies from the PEOF.

In the case of this proposal, likely (and potential) significant impacts are:

- loss of flora and vegetation values
- loss of significant fauna habitat values.

In applying the residual impact significance model (Government of Western Australia 2014), the EPA considers the proposal would result in significant residual impacts to:

- 'Good' to 'Excellent' condition native vegetation
- riparian vegetation (from direct clearing and from severe degradation or loss from groundwater mounding)
- critical habitat for the ghost bat, Pilbara olive python, northern quoll, and grey falcon
- supporting habitat for the ghost bat, Pilbara leaf-nosed bat, Pilbara olive python, northern quoll, and grey falcon.

The EPA has concluded that the clearing of habitat is a significant residual impact on its own, in the context of the proposal, and in the context of the biological diversity and ecological integrity in the local area, as it provides habitat for threatened fauna species.

Due to the remaining quantity and quality of habitat types in the local area and region, the EPA considers that some of the significant residual impacts could be counterbalanced through a contribution to the PEOF. The EPA considers future PEOF projects are expected to be able to collectively counterbalance the significant impacts from the clearing of native vegetation and critical fauna habitat of the proposal. The EPA notes the PEOF Governance Framework (DWER 2019) states that projects will aim to counterbalance the significant residual impacts that have been identified in Ministerial Statements with projects that are designed to deliver enduring and long-term strategic conservation outcomes in the Pilbara. The PEOF Implementation Plans identify the significant residual impacts for which contributions to the Fund have been made and how they will be addressed.

The EPA recommends condition B8 be imposed on the proponent to provide an offset in the form of a contribution to the PEOF, to counterbalance most of the significant residual impacts of the proposal. PEOF has been consulted regarding this proposal and has been informed of the environmental values requiring offset through the program. PEOF has confirmed that the environmental values anticipated to be impacted by this proposal are consistent with those addressed by projects currently being implemented or developed under the PEOF program.

The EPA recommends that the offset rates included in recommended condition B8 (calculated on the 2024-2025 financial year, subject to annual indexation) should apply in the form of a contribution to the PEOF for landscape-scale actions to protect biodiversity in the Pilbara.

5 Recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the EP Act.

The EPA recommends that the proposal may be implemented subject to the conditions recommended in Appendix A.

6 Other advice

The EPA may, if it sees fit, include other information, advice or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal.

The EPA provides the following information for consideration by the Minister.

6.1 Rehabilitation

The EPA reiterates its section 16(e) advice to the Minister on the Cumulative environmental impacts of development in the Pilbara region (2014), that mining has occurred in the Pilbara for over 60 years, and limited evidence remains that proponents have successfully rehabilitated any areas that have been subject to large-scale mining.

Relevant to this proposal the EPA recognises that progressive rehabilitation may be more difficult to achieve for mining hubs with a long operational project life, such at Mining Area C – Southern Flank.

6.2 Water management

The EPA provides the following information for consideration by the Minister.

The EPA is mindful of the potential ongoing pressures on water dependent environmental values, including beneficial use from significant quantities of dewater and surplus disposal occurring in the Pilbara.

The EPA notes that the Pilbara region is experiencing increasing cumulative pressure from existing and proposed mining activities, particularly related to surface water and groundwater resources. The EPA recognises that information gaps remain in relation to cumulative water-related impacts at a regional scale and considers collaboration between proponents, regulators and Traditional Owners to be critical to addressing these gaps.

The EPA has recommended condition B1-4 that requires the proponent to prepare a water balance to demonstrate its compliance with outcomes set in condition B1-1. The EPA recognises that multiple proponents share differing levels of responsibility for the long-term impacts on sensitive receptors such as Weeli Wolli Springs. The EPA considers that the water balance required by condition B1-4 should form part of a larger strategic effort that requires the active participation of the EPA and proponents operating in the vicinity of Weeli Wolli Springs.

The EPA considers that this offers a coordinated approach to managing environmental impacts in a manner that is consistent with the principles of environmental stewardship and long-term protection of Weeli Wolli Springs.

Appendix A: Recommended conditions

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

The conditions are to be prepared separately and inserted into this template after condition consultation.

Recommended Environmental Conditions

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

MINING AREA C – SOUTHERN FLANK SIGNIFICANT AMENDMENT

Proposal:	The Proposal consists of above and below water table mine pits and associated infrastructure, groundwater abstraction, dewatering and surplus water infrastructure, ore processing facilities, ore transportation infrastructure, rail, haul and access roads and ore and topsoil stockpiles.
Proponent:	BHP Iron Ore Pty Ltd Australian Company Number 008 700 981
Proponent address:	125 St George's Terrace PERTH WA 6000
Assessment number:	2493

Report of the Environmental Protection Authority: 1811

Introduction: The proposal is a significant amendment to the following existing proposals:

- Mining Area C – Southern Flank under Ministerial Statement 1072 (Report 1610, EPA Assessment Number 2085)

Pursuant to section 45 of the *Environmental Protection Act 1986*, it is now agreed that:

1. The significant amendment proposal described and documented in the proponent's Proposal Content Document (May 2026), may be implemented;

2. Ministerial Statement 1072 for the existing proposals is superseded under section 40AA (6) (b) of the *Environmental Protection Act 1986*; and

3. the implementation of the proposal (being the existing approved proposal as amended by the significant amendment proposal as shown in Figure 2) is subject to the following implementation conditions and procedures.

Conditions and procedures

Part A: Proposal extent

Part B: Environmental outcomes, prescriptions and objectives

Part C: Environmental management plans and monitoring

Part D: Compliance and other conditions

PART A: PROPOSAL EXTENT

A1 Limitations and Extent of Proposal

A1-1 The proponent must ensure that the proposal is implemented in such a manner that the following limitations or maximum extents / capacities / ranges are not exceeded:

Proposal element	Location	Maximum extent
Physical elements		
Development envelope	Figure 2	No more than 40,059 ha.
Indicative footprint	Figure 2	**Clearing** of no more than 22,900 ha of native vegetation within the development envelope of 40,059 ha.
Operational elements		
Groundwater abstraction – mine pit dewatering and water supply	-	Groundwater abstraction of up to 65.7 GL/a
Surplus water management	-	Surplus water management of up to 56.21 GL/a
Surplus water management – surface water discharge to watercourses	Figure 2	*Upper Marillana Creek* Controlled discharge of up to 30 ML/day of surplus water must not extend further than 27 km along Marillana Creek tributary from the discharge point. A dry period of 90-days in any 12-month period. Maximum operational duration of 5 years. *Lower Marillana Creek* Controlled discharge of up to 30 ML/day surplus water from existing licenced discharge point in BHP Yandi Mine Site. A dry period of 90-days in any 12-month period. Maximum operational duration of 5 years.

		Pebble Mouse Creek Controlled discharge along drainage line and Pebble Mouse Creek to extend no further than 14 km from the discharge point or extend beyond the boundary of the Mining Area C development. Shall be intermittent under natural no flow conditions for maximum of 120 days in any 12-month period.
Surplus water management – Aquifer injection	Figure 2	*Northern Runaway Valley Managed Aquifer Recharge* Groundwater injection and infiltration of up to 20 ML/day (7.3 GL/a) via managed aquifer recharge. *Yandicoogina Groundwater Supplementation* Groundwater injection of up to 10 ML/day (3.65 GL/a) via managed aquifer recharge. As an environmental water requirement for the Yandicoogina GDE. *South Flank Managed Aquifer Recharge* Managed aquifer recharge in the South Flank area to limit groundwater level rise to 30 m from ground level within an area of 400 m around SF0095R bore. Groundwater injection of up to 35 ML/d (12.78 GL/a) *Runaway Valley*

		Infiltration of up to 30 ML/day (10.95 GL/a). *Juna Downs Managed Aquifer Recharge* Groundwater injection of up to 30 ML/day (10.95 GL/a). *Central Sedimentation Basin* Infiltration of up to 23.5 ML/day (8.58 GL/a) *Western Sedimentation Basin* Infiltration of up to 12 ML/day (4.38 GL/a).
Grand Central Overburden Storage Area (GCOSA) Surface Water Diversion Structure		Surface water diversion structure to protect flood inundation of the overburden storage area.
Ore processing	Figure 2	Processing of up to 151 Mtpa
Mine pit voids and pit lakes	Figure 2	In Mining Area C and Highway deposit (South Flank) all below water table pits to be backfilled to prevent the formation of pit lakes. Backfill in other deposits at South Flank to be assessed as part of the closure planning process.
Timing elements		
Project life		Until 2073

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

1. Inland Waters and Subterranean Fauna

a. The proponent must implement the **proposal** to achieve the following **outcomes**:

(1) no **adverse impact** to the Weeli Wolli Springs occurrence of the Weeli Wolli Spring **Priority Ecological Community** attributable to the **proposal**

(2) no **adverse impact** to the Ben's Oasis occurrence of the **Weeli Wolli Spring Priority Ecological Community** attributable to the **proposal**

(3) no **adverse impact** to the Coondewanna Flats occurrence of the **Coolibah-Lignum Priority Ecological Community** attributable to the **proposal**

(4) no **adverse impact** to the Coondewanna Flats occurrence of the **Coolibah and mulga woodland over lignum and tussock grasses on clay plains** attributable to the **proposal**

(5) no increase to groundwater levels at Yandicoogina Gorge beyond historical recorded water levels attributable to the **proposal**

(6) the **wetting front** as a result from surplus water discharge at Upper Marillana Creek must not extent past 27 km from the discharge point

(7) no **adverse impacts** to **riparian vegetation** in the Upper Marillana Creek as a result of surplus water discharge

(8) no **adverse impact** to **environmental values** within the boundaries of Karijini National Park attributable to the **proposal**

b. The proponent must prepare a Troglofauna Survey Report that confirms the following:

(1) whether potentially restricted troglofauna species occur outside of the Northern Runaway Valley impact area; and/or

(2) that troglofauna habitat connectivity extends beyond the Northern Runaway Valley managed aquifer recharge predicted extent of groundwater mounding..

(3) the proponent must submit the Troglofauna Survey Report to the **CEO**, for confirmation of B1-2(1) and (2) by notice in writing;

(4) Until the **CEO** confirms the results of the Troglofauna Survey Report in writing, groundwater mounding associated with the operation of the

Northern RAV managed aquifer recharge scheme will be limited to no more than 20 **mbgl**;

(5) Upon confirmation by the **CEO**, the proponent must limit groundwater mounding associated with the Northern Runaway Valley to no more than 10 **mbgl**.

c. The proponent must prepare a Stygofauna Report that confirms the following:

(1) whether potentially restricted stygofauna species occur outside of the groundwater drawdown impact area associated with the **significant amendment**; and/or

(2) that stygofauna habitat connectivity extends beyond the **groundwater drawdown** (lateral or vertical) associated with the **significant amendment**;

(3) the proponent must submit the Stygofauna Report to the **CEO**, for confirmation of B1-3(1) and (2) by notice in writing;

(4) until the **CEO** confirms the results of the Stygofauna Report in writing, **groundwater drawdown** in Coondewanna Flats, South Flank and Weeli Wolli Springs, must not exceed **approved proposal** levels;

(5) upon confirmation by the **CEO**, the limits specified in B1-3(4) will no longer apply.

d. To demonstrate that condition B1-1(1) is met, the proponent must prepare a water strategy which will include a **water balance** and supporting analysis, that demonstrates the following at Weeli Wolli Spring:

(1) the proponent's contribution to changes in groundwater levels, baseflow and surface water flows, including associated uncertainty;

(2) assessment of cumulative impacts in the context of the regional groundwater system;

(3) definition of **thresholds** or performance criteria linking hydrological changes to ecological response;

(4) demonstration that predicted and observed hydrological changes remain within ranges that sustain ecological function and condition;

(5) prediction of temporal dynamics across operational, closure and post-closure phases, including demonstration that hydrological regimes will be maintained or reinstated over the long term;

B2 Flora and Vegetation

B2-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes** for the **significant amendment** within the **development envelope**:

(1) **disturb** no more than 1,043 ha of **'Good' to Excellent' condition native vegetation**.

(2) **disturb** no more than 57 ha of **riparian vegetation**.

(3) **disturb** no more than 3.3% of *Aristida lazaridis* (P3).

(4) **adversely impact** no more than 162 ha of vegetation as a result of groundwater mounding at the Northern RAV MAR injection site.

B2-2 The proponent must implement the **proposal** to meet the following environmental **objective**:

(1) Avoid, and where unavoidable, minimise **adverse impacts** to flora and vegetation within and surrounding the **proposal development envelope** from changes to hydrological regimes, sediment deposition, dust, and altered fire regimes.

B3 Terrestrial Fauna

B3-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

(1) The **significant amendment disturb** no more than:

(a) 14.96 **ha** of **Gorge/Gully** habitat;

(b) 10.14 **ha** of **Major Drainage Line** habitat;

(c) 2.19 **ha** of **Breakaway/Cliff** habitat;

(d) 1.03 **ha** of **Artificial Wetland** habitat;

(e) 356.53 **ha** of **Drainage Area/Floodplain** habitat;

(f) 387.24 **ha** of **Stony Plain** habitat;

(g) 234.3 **ha** of **Hillcrest/Hillslope** habitat;

(h) 38.87 **ha** of **Minor Drainage Line** habitat;

(i) 1.65 **ha** of **Sand Plain** habitat.

(2) no **disturbance** of the eleven (11) **Retained High Value ghost bat caves** as shown in Figure 3.

(3) Maintain the long-term viability of ghost bat population in the Mining Area C **development envelope**.

B3-2 The proponent must implement the **proposal** to meet the following environmental **objectives**:

(1) Avoid, and where unavoidable, minimise **adverse impacts** to **critical habitat** and **supporting habitat** from fragmentation and/or **contamination**.

B3-3 Within seven (7) days prior to **clearing critical habitat** or **supporting habitat**, using a **fauna spotter**, undertake **pre-clearance surveys** of the areas to be **cleared** to detect presence of Pilbara olive python (*Liasis olivaceous barroni*) and northern quoll (*Dasyurus hallucatus*).

(1) The proponent must implement the Mining Area C Fauna Management Plan (Revision 2.3, February 2025), or the updated plan as approved in writing by the **CEO** as set out in condition C1-1.

B4 Greenhouse gas emissions

B4-1 The proponent must notify the **CEO** in writing within one month of it becoming aware that implementation of the **proposal** will not be or is not expected to be regulated under the **Safeguard Legislation** as a designated large facility (the **notifiable event**) and such notice must briefly describe the reasons for and expected duration of the **notifiable event**.

B4-2 The proponent must, if required in writing by the **CEO**, provide the **CEO** with a report on the implications for the **proposal** of any amendment or proposed amendment to the **Safeguard Legislation**, or a decision or proposed decision made under the **Safeguard Legislation** that is specified in the **CEO's** request.

B4-3 The report required by condition B4-2 must:

(1) be submitted to the **CEO** within three months of the date of the **CEO's** request or such longer period as the **CEO** agrees to in writing; and

(2) explain the implication that the specified amendment or decision has had or is expected to have:

(a) the obligation to reduce net **scope 1 greenhouse gas** emissions from the implementation of the **proposal** under the **Safeguard Legislation;**

(b) the quantify of actual net **scope 1 greenhouse gas** emissions likely to result from the future implementation of the proposal.

B5 Social surroundings

B5-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

(1) no **disturbance** to **Aboriginal cultural heritage sites** in the **proposal** disturbance footprint, unless consent is granted to disturb that site under the *Aboriginal Heritage Act 1972* and has involved reasonable steps to consult with the relevant **Native Title party/parties**; and

(2) subject to reasonable health and safety requirements, no interruption of ongoing access to land utilised for traditional use or custom by the relevant **Native Title party/parties**.

B5-2 The proponent must implement the **proposal** to meet the following environmental **objective**:

(1) avoid, where practicable, and otherwise minimise **adverse impacts** to **Aboriginal cultural heritage** within and surrounding the **development envelope**.

B5-3 The proponent must take reasonable steps to consult with the relevant **Native Title party/parties** about the achievement of the **outcomes** in condition B5, and condition B6-1 for the life of the **proposal**.

B5-4 The proponent must take reasonable steps to consult with the relevant **Native Title party/parties** about the design of waste rock landforms and the integrated waste landform.

B6 Rehabilitation

B6-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

(1) **disturbed** areas within the **development envelope** are to be rehabilitated with vegetation species of **local provenance** and commensurate to the final post closure groundwater levels;

(2) flora and vegetation within **rehabilitated** areas are comparable with ecosystem structure and composition within suitable analogue or reference sites;

(3) **rehabilitated** ecosystems are **self-sustaining**;

(4) **rehabilitated** landforms are stable, do not cause **pollution** or **environmental harm**;

(5) **rehabilitated** landforms, excluding pits, will be designed in consideration of visually integrating into the surrounding undisturbed landscape, continuing the surrounding contours of the low hills and slopes;

(6) **rehabilitated** drainage lines are stable and support ecological processes with no erosion features present that compromise **rehabilitated** landform stability;

(7) annual reporting on hectares **rehabilitated**.

B6-2 The proponent must ensure that the **rehabilitation** of ecosystems to achieve the **outcomes** in condition B6-1 is undertaken in a **progressive manner** during the **rehabilitation** planning phase, during **operations**, and as soon as practicable upon closure.

B6-3 The proponent must commence **rehabilitation** for areas **cleared** for infrastructure, roads or access within (18) months of that infrastructure, road or access no longer being required.

B6-4 The proponent must ensure that the process for **rehabilitating** ecosystems to achieve the **outcomes** in condition B6-1:

(1) uses seed of **local provenance**;

(2) incorporates relevant and contemporary scientific outcomes;

(3) incorporates regeneration or revegetation strategies which may be required for components of communities, including further investigations to determine appropriate regeneration methodologies, if the completion criteria for the community are not being achieved;

(4) develops and implements **management actions** and/or mitigation actions to address any failure in achieving the completion criteria;

(5) includes relevant research, investigations, trials and monitoring programs, targeting key issues in **rehabilitation**, to improve **rehabilitation** techniques, practices and outcomes; and

(6) ensures outcomes from previous research, investigations, trials and monitoring programs have been incorporated into **rehabilitation** techniques and practices.

B7 Mine Closure

B7-1 The proponent must ensure the implementation of the proposal achieves the following environmental **outcomes**:

(1) mining activities are **rehabilitated** and closed in a manner to make them physically safe to humans and animals, geotechnically stable, geochemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use, with consideration for cultural values;

(2) the post-mining profile, for ex pit rehabilitated landforms, will be designed in consideration of visually integrating into the surrounding undisturbed landscape, continuing the surrounding contours of the low hills and slopes;

(3) no **disturbance** to sensitive environmental or cultural heritage receptors from pits and waste rock with acid and/or metalliferous drainage and salinity potential.

(4) hydrological and hydrogeological regimes affected by the **proposal** are reinstated or managed in a manner that maintains the ecological function and condition, and does not compromise the long-term viability, of key inland water receptors, including the Weeli Wolli Spring, Ben's Oasis and Coondewanna Flats Priority Ecological Communities.

B7-2 The proponent must review and update the Mine Closure Plan in accordance with the Department of Mines, Petroleum and Exploration's Guideline for preparing mine closure plans March 2025 (or any subsequent revisions of the guidelines) that demonstrates how achievement of the environmental **outcomes** in condition B7-1 will be monitored and substantiated, and submit to the **CEO**.

B8 Pilbara Environmental Offsets Fund

B8-1 The proponent must contribute funds to the **Pilbara Environmental Offsets Fund** calculated pursuant to condition B8-8(2), to achieve the **objective** of counterbalancing the significant residual impacts to:

(1) '**Good' to 'Excellent' condition native vegetation**;

(2) **riparian vegetation** (including **groundwater dependent vegetation**);

(3) **critical habitat** for Pilbara olive python (*Liasis olivaceus barroni*), ghost bat (*Macroderma gigas*), northern quoll (*Dasyurus hallucatus*) and grey falcon (Falco hypoleucos) subject to any reduction approved by the **CEO** under condition B8-9; and

(4) **supporting habitat** for northern quoll (*Dasyurus hallucatus*), Pilbara leaf-nosed bat (*Rhinonecteris aurantia*), Pilbara olive python (*Liasis olivaceus barroni*), and grey falcon (*Falco hypoleucos*) subject to any reduction approved by the **CEO** under condition B8-9.

B8-2 The proponent's contribution to the **Pilbara Environmental Offsets Fund** must be paid biennially, with the amount to be contributed calculated based on the **clearing** undertaken in each year of the biennial reporting period in accordance with the rates in condition B8-3. The first biennial reporting period must

commence from **ground disturbing activities** of the **environmental value(s)** identified in condition B8-3.

B8-3 Calculated on the 2024-2025 financial year, the contribution rates are:

(1) $1,016 (excluding GST) per hectare of **'Good' to 'Excellent' condition native vegetation cleared** as a result of the proposal within the Hamersley IBRA subregion;

(2) $2,031 AUD (excluding GST) per hectare of **riparian vegetation cleared** as a result of the proposal within the Hamersley IBRA subregion;

(3) $1,016 AUD (excluding GST) per hectare of **supporting habitat** for the following values **cleared** in the Hamersley IBRA subregion as a result of the proposal:

(a) northern quoll (*Dasyurus hallucatus*) **supporting habitat**;

(b) Pilbara leaf-nosed bat (*Rhinonicteris aurantia*) **supporting habitat;**

(c) Pilbara olive python (*Liasis olivaceus barroni*) **supporting habitat**; and

(d) grey falcon (*Falco hypoleucos*) **supporting habitat**.

(4) $2,031 AUD (excluding GST) per hectare of **critical habitat** for the following values **cleared** in the Hamersley IBRA subregion as a result of the proposal:

(a) Pilbara olive python (*Liasis olivaceus barroni*) **critical habitat**;

(b) ghost bat (*Macroderma gigas*) **critical habitat;**

(c) northern quoll (*Dasyurus hallucatus*) **critical habitat;**

(d) grey falcon (*Falco hypoleucos*) **critical habitat.**

B8-4 The rates in condition B8-3 change annually each subsequent financial year in accordance with the percentage change in the **CPI** applicable to that financial year.

B8-5 To achieve the objective in condition B8-1, the proponent must prepare and Impact Reconciliation Procedure and submit to the **CEO** for approval. This procedure must:

(1) spatially define the **environmental value**(s) identified in condition B8-1;

(2) spatially define the areas where offsets required by condition B8-1 are to be exempt;

(3) include a methodology to calculate the amount of **clearing** undertaken during each year of the biennial reporting period for each of the **environmental values** identified in condition B8-3;

(4) state that **clearing** calculation for the first biennial reporting period will commence from **ground disturbing activities** in accordance with condition B8-2 and end on the second 30 June following commencement of **ground disturbing activities**;

(5) state that clearing calculations for each subsequent biennial reporting period will commence on 1 July of the required reporting period, unless otherwise agreed by the **CEO**; and

(6) be prepared in accordance with Instructions on how to prepare *Environmental Protection Act 1986* Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports (or any subsequent revisions).

B8-6 The proponent must review, revise and submit an Impact Reconciliation Report in accordance with the confirmed Impact Reconciliation Procedure in condition B8-5.

B8-7 The Impact Reconciliation Report required pursuant to condition B8-5 must:

(1) provide the location and spatial extent of the **clearing** undertaken as a result of the **proposal** during each year of each biennial reporting period; and

(2) include evidence that **clearing** undertaken in any area was necessary for the commencement of **proposal**-related activities or operations in that **cleared** area within six (6) months of the **clearing** having occurred.

B8-8 The proponent may apply in writing and seek the written approval of the **CEO** to reduce all or part of the contribution payable under condition B8-2 where:

(1) a payment has been made to satisfy a condition of an approval under the *Environment Protection and Biodiversity Conservation Act 1999* in relation to the **proposal**; and

(2) the payment is made for the purpose of counterbalancing impacts of the proposal on matters of national environmental significance.

B8-9 The **CEO** may grant approval to discount the amount payable under condition B8-1(3) if the **CEO** is satisfied that the payment will offset the significant residual impacts of the **proposal**.

B8-10 Condition C1 applies to the **confirmed** Impact Reconciliation Procedure required by condition B8-5 as if it were an **environmental management plan**.

PART C – ENVIRONMENTAL MANAGEMENT PLANS AND MONITORING

C1 Environmental Management Plans: Conditions Relating to Approval, Implementation, Review and Publication

C1-1 The proponent:

(1) may review and revise a **confirmed environmental management plan** provided it meets the relevant requirements of that **environmental management plan**, including any consultation that may be required when preparing the **environmental management plan**;

(2) must review and revise a **confirmed environmental management plan** and ensure it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan, as and when directed by the **CEO;** and

(3) must revise and submit to the **CEO** the **confirmed environmental management plan** if there is a material risk that the **outcomes** or **objectives** it is required to achieve will not be complied with, including but not limited to as a result of a change to the **proposal**.

C1-2 Despite condition C1-1, but subject to conditions C1-4 and C1-5, the proponent may implement minor revisions to an **environmental management plan** if the revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the achievement of the limits, **outcomes** or **objectives** which the **environmental management plan** is required to achieve.

C1-3 If the proponent is to implement minor revisions to an **environmental management plan** under condition C1-2, the proponent must provide the **CEO** with the following at least twenty (20) business days before it implements the revisions:

(1) the revised **environmental management plan** clearly showing the minor revisions;

(2) an explanation of and justification for the minor revisions; and

(3) an explanation of why the minor revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the achievement of the limits, **outcomes** or **objectives** which the **environmental management plan** is required to achieve.

C1-4 The proponent must cease to implement any revisions which the **CEO** notifies the proponent (at any time) in writing may not be implemented.

C1-5 **Confirmed environmental management plans**, and any revised **environmental management plans** under condition C1-3(1), must be published on the proponent's website and provided to the **CEO** in electronic form suitable for on-line publication by the Department of Water and Environmental Regulation within twenty (20) business days of being implemented, or being required to be implemented (whichever is earlier).

C2 Conditions Related to Monitoring

C2-1 The proponent must undertake monitoring capable of:

(1) substantiating whether the **proposal** limitations and extents in Part A are exceeded; and

(2) **detecting** and substantiating whether the **environmental outcomes** identified in Part B are achieved (excluding any **environmental outcomes** in Part B where an environmental management plan is expressly required to monitor achievement of that outcome).

C2-2 The proponent must submit as part of the Compliance Assessment Report required by condition D2, a compliance monitoring report that:

(1) outlines the monitoring that was undertaken during the implementation of the **proposal**;

(2) identifies why the monitoring was capable of substantiating whether the **proposal** limitation and extents in Part A are exceeded;

(3) for any environmental **outcomes** to which condition C2-1(2) applies, identifies why the monitoring was scientifically robust and capable of **detecting** whether the environmental **outcomes** in Part B are met;

(4) outlines the results of the monitoring;

(5) reports whether the **proposal** limitations and extents in Part A were exceeded and (for any environmental **outcomes** to which condition C2-1 (2) applies) whether the environmental **outcomes** in Part B were achieved, based on analysis of the results of the monitoring; and

(6) reports any actions taken by the proponent to remediate any potential non-compliance.

C3 Environmental Management Plans: Conditions Relating to Monitoring and Adaptive Management for Outcomes Based Conditions

C3-1 The **environmental management plan** required under condition B3-4, must contain provisions which enable the substantiation of whether the relevant outcomes of those conditions are met, and must include:

(1) **threshold criteria** that provide a limit beyond which the environmental **outcomes** are not achieved;

(2) **trigger criteria** that will provide an early warning that the environmental **outcomes** are not likely to be met;

(3) monitoring parameters, sites, control/reference sites, methodology, timing and frequencies which will be used to measure **threshold criteria** and **trigger criteria**. Include methodology for determining alternate monitoring sites as a contingency if proposed sites are not suitable in the future;

(4) **baseline** data;

(5) data collection and analysis methodologies;

(6) adaptive management methodology;

(7) **contingency measures** which will be implemented if **threshold criteria** or **trigger criteria** are not met; and

(8) reporting requirements.

C3-2 Without limiting condition C3-1, failure to achieve an environmental **outcome**, or the exceedance of a **threshold criteria**, regardless of whether threshold **contingency measures** have been or are being implemented, represents a non-compliance with these conditions.

PART D – COMPLIANCE, TIME LIMITS, AUDITS AND OTHER CONDITIONS

D1 Non-compliance Reporting

D1-1 If the proponent becomes aware of a potential non-compliance, the proponent must:

(1) report this to the **CEO** within seven (7) days;

(2) implement **contingency measures**;

(3) investigate the cause;

(4) investigate environmental impacts;

(5) advise rectification measures to be implemented;

(6) advise any other measures to be implemented to ensure no further impact;

(7) advise timeframe in which contingency, rectification and other measures have and/or will be implemented; and

(8) provide a report to the **CEO** within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(7) above.

D1-2 Failure to comply with the requirements of a condition, or with the content of an **environmental management plan** required under a condition, constitutes a non-compliance with these conditions, regardless of whether the **contingency measures**, rectification or other measures in condition D1-1 above have been or are being implemented.

D2 Compliance Reporting

D2-1 The proponent must provide an annual Compliance Assessment Report to the **CEO** for the purpose of determining whether the implementation conditions are being complied with.

D2-2 Unless a different date or frequency is approved by the **CEO**, the first annual Compliance Assessment Report must be submitted within fifteen (15) months of the date of this Statement, and subsequent reports must be submitted annually from that date.

D2-3 Each annual Compliance Assessment Report must be endorsed by the proponent's Chief Executive Officer, or a person approved by proponent's Chief Executive Officer to be delegated to sign on the Chief Executive Officer's behalf.

D2-4 Each annual Compliance Assessment Report must:

(1) state whether each condition of this Statement has been complied with, including:

(a) exceedance of any **proposal** limits and extents;

(b) achievement of environmental **outcomes**;

(c) achievement of environmental **objectives**;

(d) requirements to implement the content of **environmental management plans**;

(e) monitoring requirements;

(f) implement **contingency measures**;

(g) requirements to implement adaptive management; and

(h) reporting requirements;

(2) include the results of any monitoring (inclusive of any raw data) that has been required under Part C in order to demonstrate that the limits in Part A, and any outcomes or any objectives are being met;

(3) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;

(4) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;

(5) be provided in a form suitable for publication on the proponent's website and online by the Department of Water and Environmental Regulation; and

(6) be prepared and published consistent with the latest version of the Compliance Assessment Plan required by condition D2-5 which the **CEO** has confirmed by notice in writing satisfies the relevant requirements of Part C and Part D.

D2-5 The proponent must prepare a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition D2-2, or prior to implementation of the **proposal**, whichever is sooner.

D2-6 The Compliance Assessment Plan must include:

(1) what, when and how information will be collected and recorded to assess compliance;

(2) the methods which will be used to assess compliance;

(3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;

(4) the retention of compliance assessments;

(5) the table of contents of Compliance Assessment Reports, including audit tables; and

(6) how and when Compliance Assessment Reports will be made publicly available, including usually being published on the proponent's website within sixty (60) days of being provided to the **CEO**.

D3 Contact Details

D3-1 The proponent must notify the **CEO** of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

D4 Public Availability of Data

D4-1 Subject to condition D5-2, within a reasonable time period approved by the **CEO** upon the issue of this Statement and for the remainder of the life of the **proposal**, the proponent must make publicly available, in a manner approved by the **CEO**, all validated environmental data collected before and after the date of this Statement relevant to the **proposal** (including sampling design, sampling methodologies, monitoring and other empirical data and derived information products (e.g. maps)), **environmental management plans** and reports relevant to the assessment of this **proposal** and implementation of this Statement.

D4-2 If:

(1) any data referred to in condition D5-1 contains trade secrets; or

(2) any data referred to in condition D5-1 contains particulars of confidential information (other than trade secrets) that has commercial value to a person that would be, or could reasonably be expected to be, destroyed or diminished if the confidential information were published,

the proponent may submit a request for approval from the **CEO** to not make this data publicly available and the **CEO** may agree to such a request if the **CEO** is satisfied that the data meets the above criteria.

D4-3 In making such a request the proponent must provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

D5 Independent Audit

D5-1 The proponent must arrange for an independent audit of compliance with the conditions of this statement, including achievement of the environmental **outcomes** and/or the environmental **objectives** and/ or environmental performance with the conditions of this statement, as and when directed by the **CEO**.

D5-2 The independent audit must be carried out by a person with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition D5-1.

D5-3 The proponent must submit the independent audit report with the Compliance Assessment Report required by condition D2, or at any time as and when directed in writing by the **CEO**. The audit report is to be supported by credible evidence to substantiate its findings.

D5-4 The independent audit report required by condition D5-1 is to be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

Table 1: Abbreviations and definitions

Acronym or abbreviation	Definition or term
Aboriginal cultural heritage	Means the tangible and intangible elements that are important to the Aboriginal people of the state, and are recognised through social, spiritual, historical, scientific or aesthetic values, as part of Aboriginal tradition to the extent they directly affect or are affected by physical or biological surroundings.
Aboriginal site(s)	As defined in section 4 and 5 under the *Aboriginal Heritage Act 1972*.
Active mining areas	Active operational areas within the **development envelope**, limited to open pits, waste rock landforms, the integrated waste landform, the processing plant, and haul roads between these physical elements. Does not include infrastructure corridors or access roads.
Adverse impact / adversely impacted	Negative change that is neither trivial nor negligible that could result in a reduction in health, diversity or abundance of the receptor/s being impacted, or a reduction in **environmental value**. **Adverse impacts** can arise from direct or indirect impacts, or other impacts from the **proposal**. In relation to flora and vegetation (including PEC), includes but is not limited to, a definable change in spatial coverage or a change in the health, species diversity, structure and plant density of vegetation, vegetation and flora mortality, spread or introduction of **environmental weeds**, introduction or spread of disease, and edge effects. In relation to terrestrial fauna, includes but is not limited to, habitat fragmentation, vehicle strike, collision with fencing, artificial light and vibration, noise emissions, and predation. In relation to **Aboriginal cultural heritage**, includes but is not limited to, hydrological change, structural damage, introduction or spread of non-indigenous flora and/or fauna, alteration of fauna behaviour, dust, light, and noise emissions.
Approved proposal	As described in Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP, December 2025).

	In relation to changes to groundwater levels, it is defined by A1285_0I53_CPHSWP_ApprovedAndCombinedGWDrawdown_RevA.aprx ("Approved proposal" - yellow line) as presented in Figure 7-17 of Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP, December 2025).
Artificial Wetland	The area defined as the habitat type "Artificial Wetland" in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document (BHP 2025) (table 9-5)
Baseline	The conditions measured as part of compliance assessment reporting carried out under previous Ministerial Statement 1072 dated 20 February 2018 prior to **disturbance** associated with the **significant amendment**.
Breakaway / Cliff	The area defined as the habitat type "Breakaway/Cliff" in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document (BHP 2025) (table 9-5)
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or the **CEO's** delegate.
Clearing	Has the same meaning as in section 51A of the Environmental Protection Act 1986.
Conceptual footprint	Refers to the current indicative layout of the direct disturbance footprint of the proposal, which includes key elements such as mine pits and waste rock landforms, as well as infrastructure.
Confirmed	In relation to a plan required to be made and submitted to the **CEO**, means, at the relevant time, the plan that the **CEO** confirmed, by notice in writing, meets the requirements of the relevant condition. In relation to a plan required to be implemented without the need to be first submitted to the **CEO**, means that plan until it is revised, and then means, at the relevant time, the plan that the **CEO** confirmed, by notice in writing, meets the requirements of the relevant condition.

Contamination	Having a substance present at above background concentrations that presents, or has the potential to present, a risk or harm to human health, the environment or any **environmental value**.
Construction	Activities that are associated with the substantial implementation of a **proposal** including but not limited to, earthmoving, vegetation **clearing**, grading or construction of right of way. Construction activities do not include Geotechnical investigations (including potholing for services and the installation of piezometers) and other preconstruction activities where no clearing of vegetation is required.
Contingency measures	Planned actions for implementation if it is identified that an environmental **outcome**, environmental **objective**, **threshold criteria**, Environmental Quality Standard or management target are likely to be, or are being, exceeded. Contingency measures include changes to operations or reductions in **disturbance** or **adverse impacts** to reduce impacts and must be decisive actions that will quickly bring the impact to below any relevant threshold, management target and to ensure that the environmental **outcome** and/or **objective** can be met.
CPI	The All Groups Consumer Price Index numbers for Perth compiled and published by the Australian Bureau of Statistics.
Critical habitat	As defined in the Mining Area C - Southern Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5).
DBCA	Means the Department responsible for administration of the Biodiversity Conservation Act 2016 which at the time of writing is the Department of Biodiversity, Conservation and Attractions (DBCA).
Detecting/ detectable	The smallest statistically discernible effect size that can be achieved with a monitoring strategy designed to achieve a statistical power value of at least 0.8 or an alternative value as determined by the **CEO**.
Development envelope	The maximum area within which the **proposal** will be located, and consistent with the Proposal Content Document for the **proposal** as referred to in the Introduction to this Statement, and defined by coordinates in Schedule 1.

Disturb / disturbing / disturbance	Means directly has or materially contributes to the disturbance effect on health, diversity or abundance of the receptor/s being impacted or on an **environmental value**. In relation to flora, vegetation or fauna habitat, includes to result in the death, destruction, removal, severing or doing substantial damage to its detriment. In relation to fauna, includes to have the effect of altering the natural behaviour of fauna to its detriment. In relation to **Aboriginal cultural heritage**, includes direct physical or biological effects on the tangible and intangible elements that are important to Aboriginal people, and are recognised through social, spiritual, historical, scientific or aesthetic values, as part of Aboriginal tradition.
Drainage Area / Floodplain	The area defined as the habitat type "Drainage Area / Floodplain" in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document (BHP 2025) (table 9-5)
EMP	Environmental management plan.
Environmental harm	Has the meaning provided by section 3A(2) of the *Environmental Protection Act 1986*.
Environmental value(s)	A beneficial use, or ecosystem health condition.
Fauna handler	A person who is qualified and has attained the appropriate licence/s and authorisation/s under section 40 of the *Biodiversity Conservation Act 2016* and the Biodiversity Conservation Regulations 2018.
Fauna spotter	A person who is suitably trained in species identification, who does not perform any handling of animals where a licence to do so is required.
GL/a	Gigalitres per annum
'Good' to 'Excellent' condition native vegetation	Means vegetation that has been rated 'good', 'excellent' or any value between these ratings, in accordance with the Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016) including any revision to this technical guidance.

Gorge / Gully	The area defined as the habitat type “Gorge /Gully” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5)
Greenhouse gas emissions	Greenhouse gas emissions expressed as tonnes of carbon dioxide equivalent (CO2-e) as calculated in accordance with the definition of ‘carbon dioxide equivalence in Section 7 of the *National Greenhouse and Energy Reporting Act 2007* (Cth) or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.
Ground disturbing activities	Any activity or activities undertaken in the implementation of the **proposal**, including any **clearing**, civil works or **construction**.
Groundwater Dependent Vegetation	Terrestrial vegetation that mainly depend on the subsurface presence of groundwater, often accessed via capillary fringe. Not all groundwater dependent vegetation draw on groundwater directly and in many cases the groundwater provides baseflow in rivers that ecosystems depend on.
Ha	Hectare
Hillcrest / Hillslope	The area defined as the habitat type “Hillcrest / Hillslope” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2(BHP December 2025) (Table 9-5)
IBRA	Interim Biogeographic Regionalisation for Australia.
Indicative footprint	Refers to the current indicative layout of the direct **disturbance** footprint of the **proposal**, which includes key elements such as mine pits and waste rock landforms, as well as infrastructure.
km	kilometre
km/hr	kilometre(s) per hour.
Local Provenance	Refers to the Hamersley IBRA subregion as delineated by the PIL03 of Interim Biogeographic Regionalisation for Australia, Version 7 (DCCEEW)
m	metres

Major Drainage Line	The area defined as the habitat type “Major Drainage Line” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5)
Management action	The identified actions implemented with the intent of to achieving the environmental **objective**.
Management target	A type of indicator to evaluate whether an environmental **objective** is being achieved.
MAR	Managed aquifer recharge.
mbgl	Metres below ground level
Minor Drainage Line	The area defined as the habitat type “Minor Drainage Line” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5)
Native title party/parties	As defined in section 18 (1AA) under the *Aboriginal Heritage Act 1972*.
Objective(s)	An objective is the proposal-specific desired state for an environmental factor/s to be achieved from the implementation of **management actions**.
Operations / Commencement of operations	Operation of the plant infrastructure for the **proposal** and includes pre-commissioning, commissioning, start-up and operation of the plant infrastructure for the proposal.
Outcome(s)	A proposal-specific result to be achieved when implementing the **proposal**.
Pilbara Environmental Offsets Fund	A special purpose account created pursuant to section 16(1)(d) of the *Financial Management Act 2006* by the Department of Water and Environmental Regulation.
Pollution	Has the meaning provided by section 3A(1) of the *Environmental Protection Act 1986*.
Priority flora	Flora listed as priority by **DBCA**.
Progressive manner	In relation to **rehabilitation**, the staged treatment of **disturbed** areas during exploration, **construction**, development and

	operations as soon as these areas become available.
Proposal	The proposal is the entire proposal, which includes the existing **approved proposal**, plus the expansion (**significant amendment**).
Rehabilitated / rehabilitation	A process of ecosystem repair which aims to maximise the return of biodiversity to disturbed land by reinstating **self-sustaining** and functional ecosystems based on local species and management of weeds, disease and feral animals.
Retained High Value ghost bat caves	Caves categorised as high value in the Mining Area C Fauna Management Plan (BHP February 2025) (Appendix 1), including caves with identification: AC13, AC14, AC17, AC18, SF4, SF5, SF8, SF14, SF18, SF26 and SF27.
Riparian Vegetation	Vegetation types identified in Table 8-3 of the Mining Area C - Southern Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025)
Sand Plain	The area defined as the habitat type “Sand Plain” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5)
Self-sustaining	Refers to vegetation that can survive (continue indefinitely) without on-going **management actions** such as watering, weed control or in-fill planting.
Significant amendment	Is the expansion of the approved proposal as described and documented in Table 2 of the proponents Proposal Content Document dated 17 February 2024.
Stony Plain	The area defined as the habitat type “Stony Plain” in the report and supporting spatial data in the Mining Area C – South Flank Significant Amendment Referral Supporting Document version 2 (BHP December 2025) (Table 9-5)
Threatened fauna	Fauna listed as threatened under the Biodiversity Conservation Act 2016 or the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.
Trigger criteria	Indicators that have been selected for monitoring to provide a warning that, if exceeded, the environmental outcome may not be

	achieved. They are intended to forewarn of the approach of the threshold criteria and trigger response actions.
Threshold criteria	The indicators that have been selected to represent limits of impact beyond which the environmental outcome is not being met.
Water balance	A systematic review of inflow, outflow and storage as applied to the computation of groundwater and surface water changes.

Figures (attached)

Figure 1 Mining Area C – Southern Flank Significant Amendment regional setting
Figure 2 Mining Area C – Significant Amendment development envelope, indicative footprint and operational elements
Figure 3 High value ghost bat caves and foraging habitat

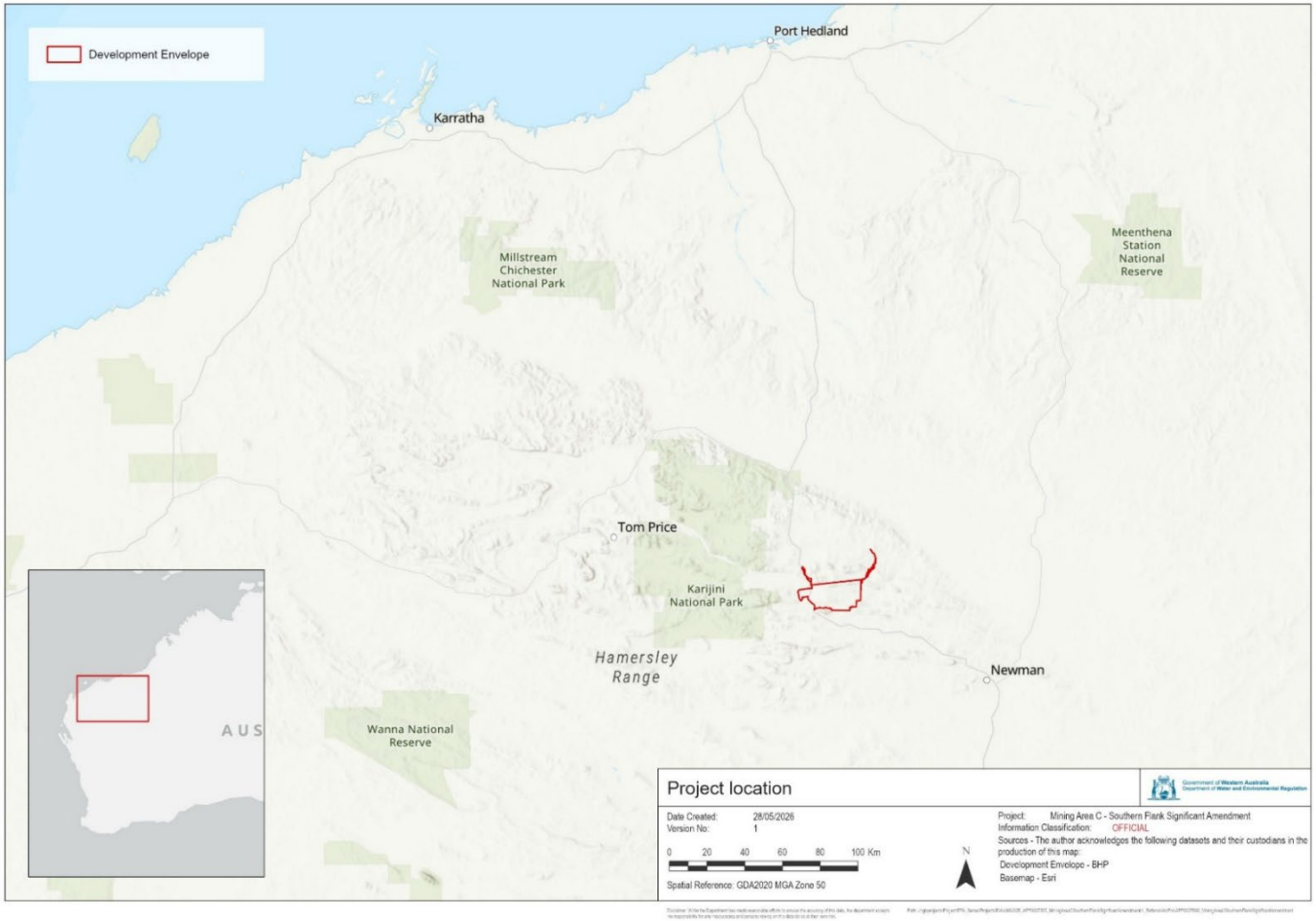

Figure 21 – Mining Area C – Southern Flank Significant Amendment regional setting

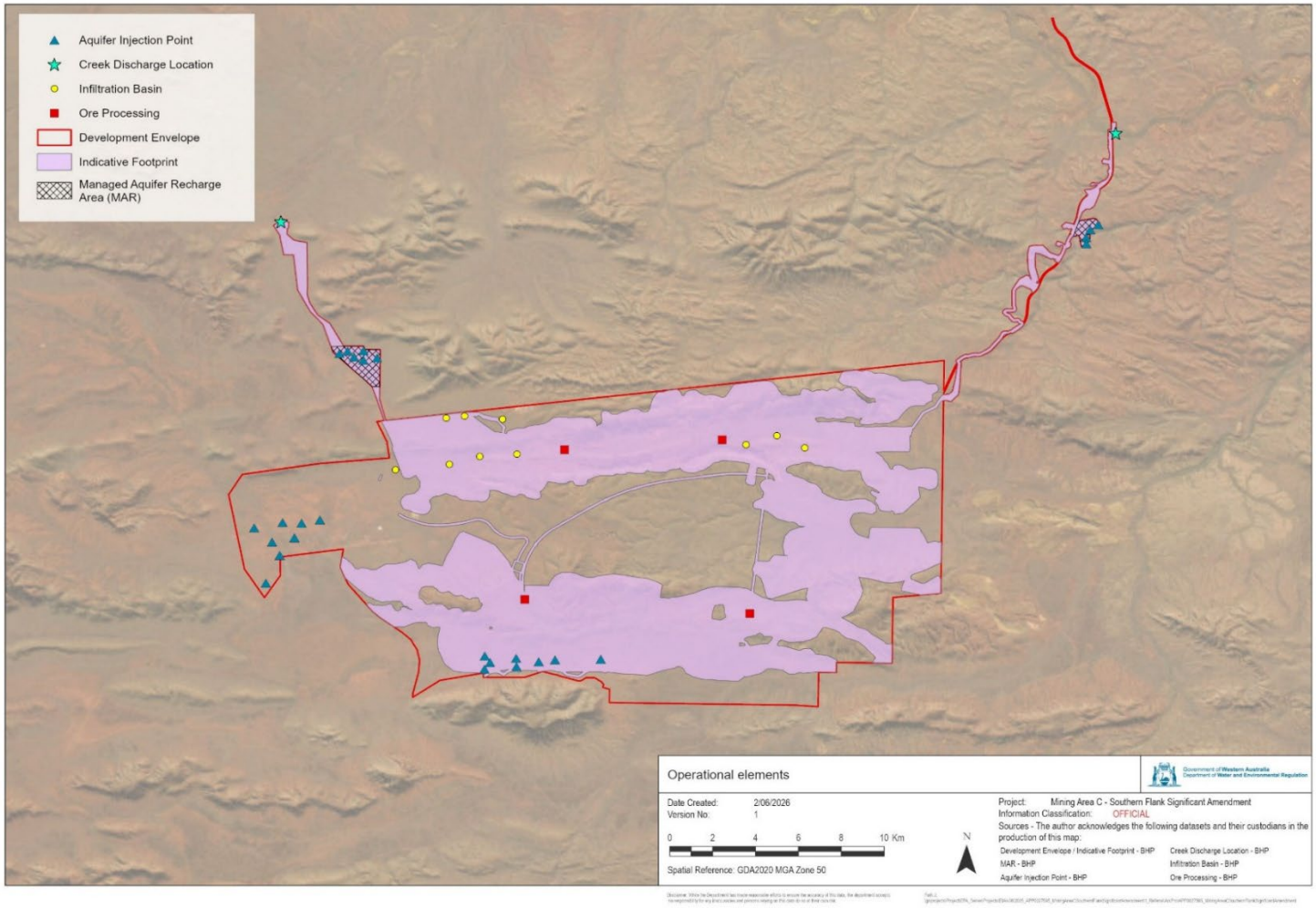

Figure 22 – Mining Area C – South Flank Significant Amendment development envelope, indicative footprint and operational elements

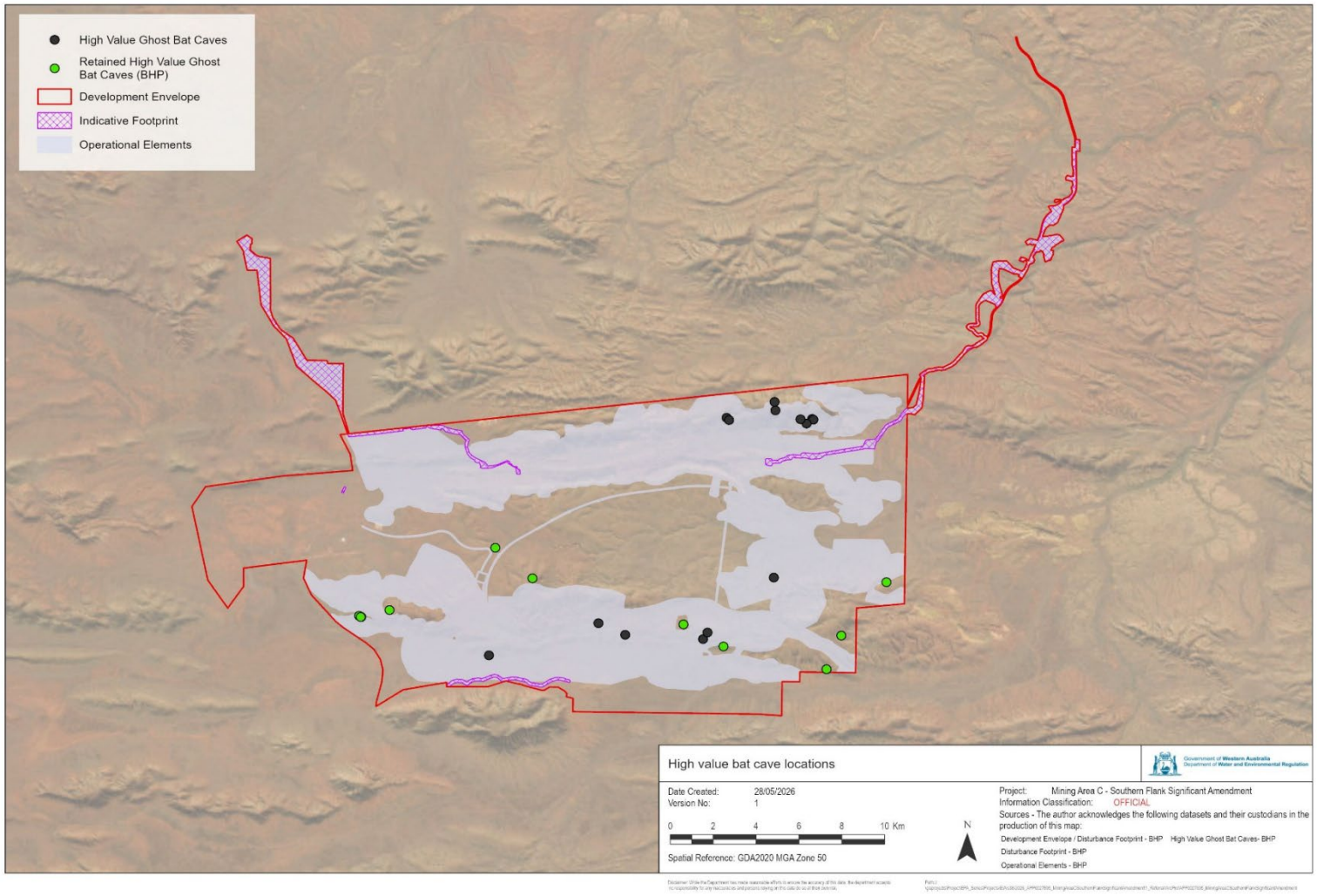

Figure 23 – High value ghost bat cave locations

Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50) datum of Geocentric Datum of Australia 2020 (GDA 2020).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation. Record no. APP-0027595

Appendix B: Decision-making authorities

Table B1: Identified relevant decision-making authorities for the proposal

Decision-Making Authority	Legislation (and approval)
Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972* - section 18 consent to impact a registered Aboriginal heritage site)
Minister for Environment	*Biodiversity Conservation Act 2016* - section 40 authority to take or disturb threatened species and - section 45 authority to modify occurrence of a threatened ecological community *Contaminated Sites Act 2003* - section 58 disturbance of contaminated sites
Minister for Mines and Petroleum	*Mining Act 1978* - granting of a new mining lease *Petroleum Pipelines Act 1969* - approval for construction and operation
Minister for Water	*Rights in Water and Irrigation Act 1914* - permit to interfere with beds and banks - permit to take water - groundwater abstraction licence - licence to construct bores - dewatering licence *Water Services Act 2012*

Decision-Making Authority	Legislation (and approval)
	- water supply services *Water Agencies (Powers) Act 1984* *Waterways Conservation Act 1976* and *Waterways Conservation Regulations 1981* - regulation 9 construction licence
Chief Executive Officer, Department of Biodiversity, Conservation and Attractions	*Biodiversity Conservation Act 2016* - authority to take flora and fauna (other than threatened species) *Swan and Canning Rivers Management Act 2006* - activities within the development control area *Conservation and Land Management Act 1984* - section 101 granting a licence to use the land reserved as Nature Reserve - access to state forest
Chief Dangerous Goods Officer Department of Mines, Industry Regulation and Safety	*Dangerous Goods Safety Act 2004* - storage and handling of dangerous goods
Executive Director Resource and Environmental Compliance, Department of Mines, Industry Regulation and Safety	*Mining Act 1978* - mining proposal
Department of Mines, Industry Regulation and Safety	*Mining Act 1978* - miscellaneous license
State Mining Engineer, Department of Mines, Industry Regulation and Safety	*Mines Safety and Inspection Act 1994* - mine safety - approval to commence mining operations

Decision-Making Authority	Legislation (and approval)
Chief Executive Officer, Department of Planning Lands and Heritage	*Land Administration Act 1997* - licence to access crown land
Chief Executive Officer, Department of Water and Environmental Regulation	*Environmental Protection Act 1986* - part V works approval and licence - part V clearing permit - approval for noise management plans for construction outside of prescribed hours - part IV compliance (Ministerial statements) *County Areas Water Supply Act 1947* - licence to clear in a declared water source catchment, where subject to a memorial
Chief Executive Officer Shire of East Pilbara	*Local Government Act 1995* - development approval and scheme amendment *Health Act 1911* - permit for treatment of sewage *Health Act 1911 and Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulation 1974* *Building Act 2011* - permit for worker accommodation *Planning and Development Act 2005* - extractive industries licence

Appendix C: Environmental Protection Act Principles

Table C1: Consideration of principles of the *Environmental Protection Act 1986*

EP Act principle	Consideration
1. The precautionary principle Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by – *(a)* careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and *(b)* an assessment of the risk-weighted consequences of various options.	The EPA has considered the precautionary principle in its assessment, and has had particular regard to this principle in its assessment of inland waters, flora and vegetation, terrestrial fauna, subterranean fauna, social surroundings and greenhouse gas emissions. The proponent has undertaken appropriate studies and investigations to provide scientific information to identify environmental values and understand the potential risks on the environment and human health. The proponent conducted an options assessment for the surface water diversions was undertaken, the result has been the selection of an option which minimises potential impacts to downstream surface water receptors. Where there is uncertainty to prevent or avoid impacts from occurring, the EPA has recommended conditions. Subject to the implementation of these recommended conditions, the proposal is unlikely to result in serious or irreversible harm. <u>Greenhouse gas emissions</u> The EPA notes that climate change as a result of cumulative GHG emissions has the potential to cause serious damage to WA's environment. The specific impacts of any single proposal's GHG

EP Act principle	Consideration
	emissions are not able to be known with certainty at this time. However, the EPA has not used this as a reason for postponing assessment of the proposal's contribution to the State's GHG emissions or recommending practicable conditions to reduce emissions in order to minimise the risk of environmental harm associated with climate change.
2. The principle of intergenerational equity The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.	The EPA has considered the principle of intergenerational equity in its assessment, and has had particular regard to this principle in its assessment of Inland waters, flora and vegetation, terrestrial fauna, social surroundings, and greenhouse gas emissions. The EPA notes that the proponent has considered this principle by: • consulting with Traditional Owners on the potential impacts to social and cultural values and to ensure values and traditional knowledge associated with Country is not compromised • progressively rehabilitating throughout the life of the proposal and at the cessation of mining. The EPA considers consistency with this principle could be achieved with the implementation of its recommended conditions, which require the proponent to: • maintain levels of ecological protection within the terrestrial environment such as limits on the extent of disturbance to flora and vegetation, terrestrial fauna habitat, and subterranean fauna habitat

EP Act principle	Consideration
	• consult with relevant stakeholders to ensure the post-mining landscape is maintained and enhanced for future generations • rehabilitate landforms, vegetation, and fauna habitat to an appropriate state, including consideration of species diversity and abundance. The EPA has concluded that the environmental values will be protected, and the health, diversity and productivity of the environment will be maintained for the benefit of future generations. <u>Greenhouse gas emissions</u> The EPA has noted that GHG emissions pose a risk to future generations, however, also notes that the proponent has committed to following a linear trajectory to net zero emissions by 2050 consistent with the Paris Agreement and IPCC 1.5 report, and to use offsets should these targets not be met by continuous improvement. The EPA has recommended conditions to ensure this.
3. The principles of the conservation of biological diversity and ecological integrity Conservation of biological diversity and ecological integrity should be a fundamental consideration.	The EPA has considered the principle of conservation of biological diversity and ecological integrity in its assessment and has had particular regard to this principle in its assessment of flora and vegetation, and terrestrial fauna. To ensure biodiversity and ecological integrity of environmental values within the development envelope, the EPA has recommended conditions including disturbance limits for terrestrial fauna habitat and

EP Act principle	Consideration
	priority flora species and ensuring vegetation and fauna habitat are appropriately considered in rehabilitation efforts. The EPA has concluded that the actions to avoid and minimise impacts to environmental values, which are also recommended as conditions, would likely ensure that environmental outcomes are achieved. The application of limits on disturbance and any associated conditions are to ensure there is no significant residual impact on the biodiversity diversity and ecological integrity of these values.
4. Principles relating to improved valuation, pricing and incentive mechanisms: (1) Environmental factors should be included in the valuation of assets and services. (2) The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement. (3) The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes. (4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise	In considering this principle, the EPA notes that the proponent will bear the costs relating to implementing the proposal to achieve environmental outcomes, and management and monitoring of environmental impacts during construction, operation and decommissioning of the proposal. The EPA has had particular regard to this principle in considering inland waters, flora and vegetation, terrestrial fauna, subterranean fauna, social surroundings, and greenhouse gas emissions. The EPA notes that the proponent has pursued these principles by: • undertaking surveys to identify environmental values within and near the development envelope • minimising clearing to the extent required • committing to progressive rehabilitation to restore natural ecosystems throughout the life of the proposal. <u>Greenhouse gas emissions</u>

EP Act principle	Consideration
benefits and/or minimise costs to develop their own solutions and responses to environmental problems.	The proponent will be responsible for bearing the costs of implementing measures to reduce and offset GHG emissions, including the costs of adopting advances in process management and other measures in the future to further reduce and offset GHG emissions to achieve net zero along a linear trajectory to net zero by 2050.
5. The principle of waste minimisation All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.	The EPA has considered the principle of waste minimisation in its assessment, and has had particular regard to this principle in its assessment of inland waters, flora and vegetation, terrestrial fauna, social surroundings, and greenhouse gas emissions. The proponent has considered the principle of waste minimisation in designing the proposal, such as: • application of waste management hierarchy (avoidance, reuse, recycling, recovery of energy, treatment, containment, and disposal) • minimising ex-pit waste through the backfill mined out pit voids and deposition of tailings into pit voids. The EPA notes that the disposal of excess dewater which will also be limited by recommended condition A1-1.

Appendix D: Other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Land			
Landforms	Ground disturbance and installation of infrastructure Erosion of natural landforms as a result of altered surface water regimes	Public comments • One public response was received during the seven-day public comment period regarding the alterations of landforms Agency comments • No comments	Landforms was not identified as a preliminary key environmental factor when the EPA set the level of assessment for this proposal. The proposal is expected to alter visual amenity through construction and operation, however, impacts to visual amenity were considered under the social surroundings factor. The EPA considers that the impacts to landforms can be adequately managed under other key environmental factors. Accordingly, the EPA did not consider landforms to be a key environmental factor at the conclusion of its assessment.

Terrestrial environmental quality	Increased erosion from ground disturbance and mining activities Drainage and stormwater management	Public comments • No public comments were received during the seven-day public comment period Agency comments • No comments	Terrestrial environmental quality was not identified as a preliminary key environmental factor when the EPA set the level of assessment for this proposal. In considering the potential impacts to terrestrial environmental quality the EPA has regard to risks of sedimentation and erosion of the GCOSA. The EPA considers that impacts to Terrestrial Environmental Quality can be managed through best practice management and mine closure and rehabilitation through Part IV of the EP Act. Accordingly, the EPA did not consider terrestrial environmental quality to be a key environmental factor at the conclusion of its assessment.
Air			
Air quality	Particle emissions (dust) from construction of infrastructure, reducing ambient air quality	Public comments • No public comments were received during the seven-day public comment period. Agency comments • No comments	Air quality was not identified as a preliminary key environmental factor when the EPA set the level of assessment of this proposal. When assessing the impacts to air quality the EPA took into consideration: • existing levels of dust present in the Pilbara region

			• no sensitive receptors will be affected by the proposal. The nearest Pastoral Lease is located 28 km from the proposal boundary. The town of Newman is located 120 km from the proposal boundary • Processing or beneficiation of metallic or non-metallic ore is currently regulated under Part V. The EPA considers than impact to air quality can be managed under Part V of the EP Act and through best practice mining activities measures including, but not limited to: speed limits, water sprays, and waters sites within operational areas. Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment.
People			
Social surroundings – Noise and Visual Amenity	Noise emissions and visual changes to the landscape	Public comments • One public response was received during the seven-day public comment period regarding the alterations of landforms	Social Surroundings was identified as a preliminary key environmental factor when the EPA set the level of assessment for this proposal. Cultural Heritage is considered to be significantly impacted by this proposal and is discussed in section 2.6 of this report. Noise and visual amenities was not assessed as a

		Agency comments • No comments	key factor of the proposal when considering the following: • no sensitive receptors will be affected by the proposal. The nearest Pastoral Lease is located 28 km from the proposal boundary. The town of Newman is located 120 km from the proposal boundary • the visual impact of the Proposal along the Great Northern Highway is not likely to be significant • the Proposal has been designed to ultlise existing tracks and cleared areas for the construction of the pipelines and will not significantly impact the viewshed of locations with high amenity values. The EPA considers that other impacts to social surroundings have been adequately addressed in section 2.6. Accordingly, the EPA did not consider noise and visual amenities to be a key environmental factor at the conclusion of its assessment.

Appendix E: Survey, studies and investigations

The EPA advises that the following surveys, studies and investigations have been used to inform the assessment of the potential impacts to the following environmental factors:

Inland waters

Central Pilbara Water Resources Management Plan (appendix 8 of the environmental review document) (BHP 2025)

Marillana Creek Infiltration Proposal Geotechnical Mapping and Investigation Report (appendix 7.1 of the environmental review document) (4DG 2019)

Marillana Creek Wetting Front Modelling (appendix 7.2 of the environmental review document) (AQ2 2019)

Yandi E8 Creek Discharge Wetting Front (appendix7.3 of the environmental review document) (BHP 2021d)

Update Of South Flank Grand Central Overburden Storage Area Surface Water Management Plan And Surface Water Impact Assessment (appendix 7.4 of the environmental review document) (WSP 2024)

Central Pilbara Hydrogeological Assessment (appendix 7.5 of the environmental review document) (BHP 2025a)

Runaway Valley North Updated Hydrogeological Assessment (appendix 7.6 of the environmental review document) (Advisian 2024)

Hydrogeological Investigation Drilling Program, Ministers North (appendix 7.7 of the environmental review document) (RPS 2021)

FY23 Ministers North SUR Phase 1 Hydrogeological Drilling Completion Report (appendix 7.8 of the environmental review document) (BHP 2023c)

Technical Memorandum Ministers North Conceptual Hydrogeological Model (appendix 7.9 of the environmental review document) (BHP 2019b)

Yandicoogina Gorge Numerical groundwater modelling (appendix 7.10 of the environmental review document) (BHP 2023h)

Carbonate Precipitation from Groundwater – Source, Controls and Management (appendix 7.11 of the environmental review document) (Earth Systems 2023)

Preliminary PFAS Assessment Mining Area C (appendix 7.12 of the environmental review document) (Cardno 2022)

Acid and Metalliferous Drainage Risk Assessment – Mining Area C and South Flank (appendix 7.13 of the environmental review document) (BHP 2021b)

Yandicoogina Gorge Mitigation Water Quality Desktop Review (appendix 7.14 of the environmental review document) (Biologic 2023f)

Ministers North Ecohydrology (appendix 7.15 of the environmental review document) (AQ2 2022)

Flora and vegetation

Jinidi & Weeli Wolli Creek Targeted Groundwater Dependent Vegetation Survey (appendix 10.1 of the environmental review document) (Biologic 2025c)

Central Pilbara Hub Detailed and Targeted Flora Survey (appendix 10.2 of the environmental review document) (Biologic 2024a)

Ministers North Targeted Significant Flora and Vegetation Assessment (appendix 10.3 of the environmental review document) (Spectrum 2023)

Targeted Flora Surveys of Pipeline Corridors (appendix 10.4 of the environmental review document) (GHD 2022)

Ministers North and Yandi Vegetation Association and Condition Mapping (appendix 10.5 of the environmental review document) (Onshore 2020)

Ministers North Miscellaneous Licence Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment (appendix 10.6 of the environmental review document) (Biologic 2020a)

Runaway Valley Baseline Vegetation Monitoring Survey (appendix 10.7 of the environmental review document) (Astron 2020)

Area C West to Yandi Flora and Vegetation Assessment (appendix 10.8 of the environmental review document) (Astron 2019)

Consolidation of Regional Vegetation Mapping, BHP Billiton Iron Ore Pilbara Tenure (appendix 10.9 of the environmental review document) (Onshore 2014a)

Terrestrial fauna

Central Pilbara Hub Stage 2 Targeted MNES Vertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Biologic 2025a)

CPH Targeted Matters of National Environmental Significance Vertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Biologic 2023a)

Targeted Pilbara Olive Python Survey: South Flank and Mining Area C (appendix 12.1 of the environmental review document) (Biologic 2023d)

Yandi 45C Targeted Significant Vertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Astron 2023)

MAC Phase 4 Marillana Creek Targeted MNES Fauna Survey (appendix 12.1 of the environmental review document) (Biota 2022)

Ministers North Level 1 Fauna Survey (appendix 12.1 of the environmental review document) (GHD 2021a)

MAC4 Pipeline Level 1 Vertebrate Fauna Assessment (appendix 12.1 of the environmental review document) (Biologic 2019a)

Ministers North SRE Invertebrate Fauna Desktop and Field Survey (appendix 12.1 of the environmental review document) (Bennelongia 2024a)

Yandi Operations Short-Range Endemic Fauna Survey Report (appendix 12.1 of the environmental review document) (Bennelongia 2024c)

Ministers North and Yandicoogina Creek Short-Range Endemic Invertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Biologic 2021)

Ministers North Yandicoogina Creek Aquatic Ecosystem Survey Dry 2022 and Wet 2023 (appendix 12.1 of the environmental review document) (Biologic 2024c)

MAC Phase 4: Aquatic monitoring Dry 2022 and Wet 2023 (appendix 12.1 of the environmental review document) (Biologic 2024b)

Weeli Wolli Spring: Aquatic Monitoring 2021 (appendix 12.1 of the environmental review document) (Biologic 2023h)

Weeli Wolli Spring: Aquatic Monitoring Wet and Dry 2022 (appendix 12.1 of the environment review document) (Biologic 2024d)

Consolidated Ministers North Targeted Significant Vertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Astron 2024c)

Runaway Valley North Short Range Endemic Invertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Biota 2025)

Ministers North Fauna Survey Level 2 Survey (appendix 12.1 of the environmental review document) (GHD 2021b)

Mining Area C Targeted Vertebrate MNES Fauna Survey (appendix 12.1 of the environmental review document) (Biologic 2025d)

Jinidi Targeted Vertebrate Fauna Survey (appendix 12.1 of the environment review document) (Biologic 2024e)

Jinidi Short-range Endemic Invertebrate Fauna Survey (appendix 12.1 of the environmental review document) (Biologic 2025e).

Subterranean fauna

East Packsaddle Subterranean Fauna Assessment (appendix 18.1 of the environmental review document) (Biologic 2025b)

South Flank MAR subterranean fauna desktop assessment (appendix 18.2 of the environmental review document) (Bennelongia 2018)

Mining Area C Southern Flank: Stygofauna Assessment (appendix 18.3 of the environmental review document) (Bennelongia 2016b)

Central Pilbara Hub Subterranean Fauna Survey Report (appendix 18.4 of the environmental review document) (Bennelongia 2025a)

Central Pilbara Hub Significant Amendment Stygofauna Environmental Impact Assessment (appendix 18.5 of the environmental review document) (Bennelongia 2025b)

Social surroundings

Tonkinson & Veth (1986) Anthropological Survey of the area surrounding BHP's Iron Ore Deposits (Marillana Creek)

Harris (1996) Report on an archaeological survey for MAC rail, road, transmission line and associated infrastructure, west of Newman.

Warren (2000) A Report of BHP Iron Ore's Archaeological and Ethnographic surveys of the Mining Area C project and section 18 and 16 application consultation (interim report October 2000)

Green, McGrath (2001) Report on the Ethnographic Survey of the BHP Iron Ore Pty Ltd's Mining Area C Project in the Pilbara Region of Western Australia.

McGann (2001) A Report of an Archaeological Inspection of Areas within the Mining Area C Infrastructure Corridor.

Hook (2002). An Addendum Report to: Hook, F. (1999) A report of an Aboriginal Heritage Assessment of six archaeological sites located within BHP Iron Ore's Mining Area C Deposit, Hamersley Plateau, Pilbara, Western Australia.

Duffy & Bergin (2013) Archaeological Survey & Site Verification of Powerline between MAC & Yandi.

Stephenson (2017) Central Pilbara Grinding Material Use Wear and Residue

Report of a DGPS Survey of Stone Arrangements Banjima Country, Pilbara, Western Australia (Slack et. al. 2018)

Appendix F: Relevant policy, guidance, procedures and references

The EPA had particular regard to the policies, guidelines and procedures listed below in the assessment of the proposal.

BHP 2024a, Mining Area C – Southern Flank Significant Amendment – Central Pilbara Hub Surplus Water Proposal Stage 1 - Proposal Content Document, Version 1, BHP Iron Ore Pty Ltd, February 2024. (Available from Mining Area C – Southern Flank Significant Amendment | EPA Western Australia)

BHP 2024b, Mining Area C Fauna Management Plan, Version 2.2, BHP Iron Ore Pty Ltd,

BHP 2024c, Mining Area C – Southern Flank Mine Closure Plan, BHP Iron Ore Pty Ltd

BHP 2025, Mining Area C – South Flank Significant Amendment – Central Pilbara Hub Surplus Water Proposal Stage 1 – Referral supporting document, Version 2, BHP Iron Ore Pty Ltd, December 2025. (Available from Mining Area C – Southern Flank Significant Amendment | EPA Western Australia)

Department of Climate Change Energy the Environment and Water (DCCEEW) 2023, Australian national greenhouse accounts factors workbook 2023. Canberra, ACT.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024) Directory of Important Wetlands. (Available from: https://www.dcceew.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands)

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024), State and Territory Greenhouse Gas Inventories: annual emissions. Canberra, ACT.

Department of the Environment (DoE) (2013) Australia's RAMSAR sites. (Available from: https://www.dcceew.gov.au/sites/default/files/documents/ramsar-sites_0.pdf)

EPA 2016a, Environmental factor guideline – Flora and vegetation, Environmental Protection Authority, Perth, WA.

EPA 2016X, Environmental factor guideline – Social surroundings, Environmental Protection Authority, Perth, WA.

EPA 2016X, Environmental factor guideline – Subterranean fauna, Environmental Protection Authority, Perth, WA.

EPA 2016X, Environmental factor guideline – Terrestrial fauna, Environmental Protection Authority, Perth, WA.

EPA 2018X, Environmental factor guideline – Inland waters, Environmental Protection Authority, Perth, WA.

EPA 2023X, Environmental factor guideline – Greenhouse gas emissions, Environmental Protection Authority, Perth, WA.

EPA 2021, Environmental impact assessment (Part IV Divisions 1 and 2) procedures manual, Environmental Protection Authority, Perth, WA.

EPA 2021, Environmental impact assessment (Part IV Divisions 1 and 2) administrative procedures, Environmental Protection Authority, Perth, WA.

EPA 2021X, Statement of environmental principles, factors, objectives and aims of EIA, Environmental Protection Authority, Perth, WA.

EPA 2016X, Technical guidance – Flora and vegetation surveys for environmental impact assessment, Environmental Protection Authority, Perth, WA.

EPA 2016X, Technical guidance – Sampling of short-range endemic invertebrate fauna, Environmental Protection Authority, Perth, WA.

EPA 2020X, Technical guidance –Terrestrial vertebrate fauna surveys for environmental impact assessment, Environmental Protection Authority, Perth, WA.

EPA 2021X, Technical guidance –Subterranean fauna surveys for environmental impact assessment, Environmental Protection Authority, Perth, WA.

EPA 2023X, Technical guidance –Environmental impact assessment of social surroundings - Aboriginal cultural heritage, Environmental Protection Authority, Perth, WA.

IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 184 pp., doi: 10.59327/IPCC/AR6-9789291691647.

BHP 2025. Mining Area C – South Flank Significant Amendment – Referral supporting document, Version 1, February 2025 (Available from *insert link)

State of Western Australia 2021, Western Australia Government Gazette, No. 180, Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2021, 22 October 2021.

Appendix G: List of submitters

Seven-day comment on referral

Organisations and public

- Five submissions were received from the public during the seven-day public comment period.

Appendix H: Assessment timeline

Date	Progress stages	Time (weeks)
19 March 2025	EPA decided to assess – level of assessment set	
10 July 2025	EPA requested additional information	16
10 December 2025	EPA received additional information	21
20 May 2026	EPA accepted additional information	23
21 May 2026	EPA completed its assessment	1 day
29 June 2026	EPA provided report to the Minister for Environment	6
2 July 2026	EPA report published	3 days
23 July 2026	Appeals period closed	3

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.

The timeline is met if the EPA takes 12 weeks or less to provide the report to the Minister from the date the final information for assessment was received.

Appendix I: Contemporising of Ministerial Statements 1072

The recommended conditions for the significant amendment of an approved proposal (Mining Area C – Southern Flank Significant Amendment) were developed in accordance with section 40AA(3) of the EP Act and the Environmental Impact Assessment Part IV Divisions 1 and 2) Procedures Manual (EPA 2021) and includes a review of the following implementation conditions of the approved proposal's (Mining Area C):

- Ministerial Statement 1072: Mining Area C, issued on 20 February 2018 – which allowed the mining of Northern Flank and Southern Flank orebodies in the Hamersley Range. Two amendments under section 45C of the EP Act were approved for this proposal. The amendments comprised of a new managed aquifer recharge location in the South Flank Valley, additional surface water discharge that leads to Pebble Mouse Creek, and administrative changes to a figure identifying areas required to be offset.

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	1-1 Implementation	N/A	Delete condition and replace with a consolidated contemporary style condition.	EPA recommends this condition is replaced with a new condition (A1-1) setting the maximum limits on proposal characteristics which will ensure the implementation of the proposal is consistent with the EPA's objectives. This condition reflects contemporary conditions setting approach recommended by the EPA.
1072	2-1 Contact details	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to contact details. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D3).
1072	3-1 Compliance reporting	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D2-5).
1072	3-2 Compliance reporting	N/A	Delete condition and replace with a consolidated	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
			contemporary style condition.	consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D2-5).
1072	3-3 Compliance reporting	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D2-5).
1072	3-4 Compliance reporting	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D2-5).
1072	3-5 Compliance reporting	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting

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				approach recommended by the EPA (recommended condition D2-5).
1072	3-6 Compliance reporting	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the Compliance Assessment Plan. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D2-5).
1072	4-1 Public availability of data	N/A	Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the public availability of data. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D5).
1072	4-2 Public availability of data		Delete condition and replace with a consolidated contemporary style condition.	This condition relates to the public availability of data. The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition D5).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	5-1 Cultural heritage management plan	Social surroundings	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B5).
1072	5-2 Cultural heritage management plan	Social surroundings	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B5).
1072	5-3 Cultural heritage management plan	Social surroundings	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B5).
1072	6-1 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	6-2 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-3 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-4 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-5 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	6-6 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-7 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-8 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).
1072	6-9 Water management environmental management plan	Inland waters	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B1).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	7-1 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-2 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-3 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-4 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	7-5 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-6 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-7 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	7-8 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	7-9 Ghost bat environmental management plan	Terrestrial fauna	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B3, C4).
1072	8-1 Greenhouse gas reporting	Greenhouse gas emissions	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B4).
1072	9-1 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).
1072	9-2 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	9-3 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).
1072	9-4 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).
1072	9-5 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).
1072	9-6 Rehabilitation and decommissioning	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended conditions B6, B7).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	10-1 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-2 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-3 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-4 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	10-4 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-5 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-6 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-7 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).

Ministerial statement number	Ministerial statement conditions	Environmental Factor	Proposed changes by the proponent	Comments including assessment and evaluation of proposed changes where relevant to ensure the combined proposal can be implemented consistently with EPA objectives
1072	10-8 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-9 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-10 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).
1072	10-11 Offsets	N/A	Delete condition and replace with a consolidated contemporary style condition.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach recommended by the EPA (recommended condition B8).