GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

Marillana Creek Life of Mine Proposal

BHP Iron Ore Pty Ltd

Report 1810

June 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 Marillana Creek Life of Mine 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.

Darren Walsh
Chair
Environmental Protection Authority

28 May 2026

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Proposal

The Marillana Creek Life of Mine Proposal proposes to extend existing iron ore mining operations approved under Ministerial Statement (MS) 679 and as amended by MS 1039. The proposal involves the mining of an additional below water table pit, associated dewatering and surplus water management and vegetation clearing. Associated infrastructure includes haul roads and light vehicle access tracks.

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

The proposal is located within the existing approved 13,158-hectare (ha) Development Envelope. The approved disturbance footprint is 4,558 ha which has been proposed to increase to 4,653 ha with an additional clearing of 95 ha of vegetation.

The proposal also includes provisions to extend the current project life by an additional five years from the date of the issue of the Ministerial Statement.

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, 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 has:

- modified the proposal to avoid direct impacts to three heritage sites, utilised existing infrastructure and water licences, and avoided barbed-wire fencing where practicable
- minimised clearing, disturbance, groundwater drawdown and habitat loss to the minimum practicable through implementation of approved environmental management plans, optimisation of dewatering, investigation of reinjection and physical control measures, targeted monitoring with defined triggers and thresholds, application of standard impact controls (noise, dust, light, weeds and fauna), and emissions reduction measures including electrification of equipment
- committed to progressive rehabilitation where practicable through implementation of the Mine Closure Plan (MCP), development of revegetation programs using appropriate native species and local provenance seed, and targeted rehabilitation strategies for riparian vegetation, including delivery of the Flat Rock Springs Tree Restoration Program in collaboration with relevant stakeholders.

Assessment of key environmental factors

The EPA has identified the key environmental factors listed below for consistency with the EPA environmental factor objectives. The EPA has also considered the potential impacts to other environmental factors such as terrestrial environmental quality and air quality in Appendix E.

Environmental Factor: Inland waters	
Residual impact on key value	**Assessment finding**
Permanent alteration of the local hydrological regime, including surface water drainage and groundwater availability.	The approved proposal has impacted 0.63% of the Marillana Creek catchment, with the significant amendment to contribute another 0.01% reduction to the catchment area. The EPA considers that discharge of dewater can be regulated through the Part V licence L6168/1991/10 and that changes to surface water catchments will not cause significant impacts and no further conditions relating to surface water flows are required to meet its objective for inland waters. The EPA notes that the proponent does not intend to change the current peak dewatering rate or annual groundwater abstraction limit of the approved proposal. Dewatering is currently licensed through Groundwater Licence 89501. The EPA considers that impacts to groundwater levels can be adequately managed through this groundwater licence, and that the outcome is likely to be consistent with the EPA objective for inland waters.
Decrease in health of riparian vegetation as a result of alteration of localised hydrology.	The proponent has a Part V licence (L6168/1991/10) to discharge dewater from mining operations with a limit of 41.1 ML/day. The current discharge is approximately 3.4 ML/day. Impacts on riparian vegetation will continue to be monitored as part of the Marillana Creek Water Resource Management Plan. The EPA considers that the monitoring through the Marillana Creek Water Resource Management Plan, the environmental outcome is likely to be consistent with the EPA objective for inland waters.
Impacts on water quality as a result of mining operations.	The EPA considers that water quality can be managed through Part V Licence L6168/1991/10, and that this combined with the implementation of the mitigation measures outlined in the MCWRMP, is sufficient for its objective for inland waters can be met.
Decrease in groundwater levels outside the Development Envelope at Flat Rocks and Marillana Creek Pools and consequent impacts on groundwater dependent ecosystems. Potential impacts to Yandicoogina Gorge.	Unmitigated, the proponent has modelled increases in drawdown beneath Flat Rocks and Marillana Pools as a result of the combined proposal from 12 m to 15 m. However, reductions in dewatering at the W0 pit already implemented by the proponent have already shown improvements in groundwater levels with groundwater recovery in some areas and monitoring will continue as part of the MCWRMP. The combined proposal, with mitigations in place, is predicted to result in groundwater drawdown of up to 1 m between 2.5 km north south and 4.5 km east west from the dewatering area.

	The drawdown is unlikely to extend to the semi-permanent pools at Flat Rock, Marillana Creek or to Yandicoogina Gorge. The EPA notes the Proponent's commitment to minimising any significant residual impacts by through the implementation the latest version (vers 2.1) of the MCWRMP, which includes measures to manage and monitor groundwater levels as a result of the Combined proposal and hence ensure no permanent loss of riparian vegetation, or aquatic and terrestrial fauna, at Flat Rocks and Marillana Creek pools as a result of groundwater drawdown. The EPA also notes the proponent's investigations aimed at minimising impacts on groundwater drawdown and consequent impacts on riparian vegetation include off-tenure reinjection in the CID upstream of Flat Rocks and installation of low permeability barriers to slow groundwater flow and encourage retention of water in the CID without ongoing mitigation activities. Approvals under the EP Act and RiWI Act would be required if these were to be implemented. The proponent has committed to develop a Flat Rock Springs Tree Restoration Program in collaboration with DBCA, Kings Park Science and the Banjima People. The EPA considers that subject to proposed mitigation, monitoring methods implemented through the MCWRMP, the rehabilitation methods measures proposed to be implemented with DBCA, Kings Park Science, the Banjima People, and the proposed conditions relating to avoiding adverse impacts and the Marillana Creek diversion, the environmental outcome is likely to be consistent with the EPA factor objective for inland waters.

Environmental Factor: Flora and vegetation	
Residual impact on key value	**Assessment finding**
Clearing of up to 95 ha of native vegetation of which 85 ha is in 'Good' to 'Excellent' condition within the significant amendment. The combined effect of the approved proposal and significant amendment is the loss of 4,653 ha of native vegetation of which 593 ha is in 'Good' to 'Excellent' condition.	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 on clearing (condition A1-1 and B2-1) and recommended conditions requiring progressive rehabilitation (B6) and offsets (B8), the significant residual impact can be counterbalanced so that the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.
Additional clearing of up to 48 ha of riparian vegetation within the significant amendment.	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.

	The proponent will continue to monitor impacts on riparian vegetation which will be monitored as part of the Marillana Creek Water Resource Management Plan. The EPA considers that, subject to recommendation conditions (A1-1, B2-1 and B8) requiring limitations on clearing 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.
The significant amendment will result in the loss of up to 2.5% of known individuals of *Rostellularia adscendens* var. *latifolia* and up to 6.4% when taking the combined proposal into account.	The significant amendment will have residual impacts on *Rostellularia adscendens* var. *latifolia* (P3). The EPA advises that the proposal should be subject to conditions (B2-1 and B2-2) to protect any remaining individuals of priority flora within and immediately outside the Development Envelope. The EPA considers that implementation of the recommended conditions will ensure that the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.

Environmental Factor: Terrestrial fauna	
Residual impact on key value	**Assessment finding**
Additional clearing of up to: • 7.1 ha of Wetland habitat • 17.6 ha of Major Drainage Line habitat • 0.3 ha of Medium Drainage Line habitat • 25.4 ha of Drainage Area/ Floodplain habitat • 0.02 ha of Undulating Low Hills habitat • 0.1 ha of Stony Plain habitat • 21.2 ha of Hillcrest/Hillslope habitat	Seven habitat types were recorded in the significant amendment: Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Undulating Low Hills, Stony Plain, and Hillcrest/Hillslope habitat. Conservation significant fauna species recorded within the Development Envelope and respective habitats are: • Pilbara Olive Python (VU) – Wetland, Major and Medium Drainage Line habitat • Northern Quoll (EN) – Wetland, Major and Medium Drainage Line, Hillcrest/ Hillslope, Stony Plain, Drainage Area/ Floodplain habitat • Common Sandpiper (Migratory) – Wetland, Mahor Drainage Line habitat • Western Pebble-mound Mouse (P4) – Stony Plain, Undulating Low Hills, Hillcrest/Hillslope habitat • Peregrine Falcon (Other specially Protected Fauna) - Major and Medium Drainage Line habitat. While not recorded in the Development Envelope, several other species are likely to occur due to suitable critical and supporting habitat, including the ghost bat and Pilbara Leaf-nosed Bat. The foraging habitat types are widespread in the Pilbara region, and therefore there is not likely to be any significant residual impacts to these species. The EPA notes the limitations to the proponent's ability to quantify clearing impacts on specific habitats due to a lack of historical data on clearing activities carried out under the approved proposals. In the absence of this data, the EPA considers that the protection of conservation significant fauna through mitigation of impacts can be adequately regulated through reasonable conditions including recommended

	conditions A1 (extents and limits), B3 (terrestrial fauna) and B8 (PEOF). Subject to the recommended conditions, the environmental outcome for terrestrial fauna is likely to be consistent with the EPA's objective for this factor.
• Clearing records of two SRE species: ○ 50% of known records of *Afrosternophorus* 'BPS506' ○ 25% of known records of *Beierolpium* 8/4 small 'BPS505'	All mapped fauna habitat types within the Development Envelope are prospective for short-range endemic (SRE) species. Clearing associated with the proposal would result in the loss of approximately 50% of known records of *Afrosternophorus* 'BPS506' and 25% of known records of *Beierolpium* 8/4 small 'BPS505'. While this represents a measurable reduction in known occurrences, neither species is restricted to the indicative footprint and both occur within habitat types that are widespread and extensive in the region. Given the extent of remaining suitable habitat and the likelihood that both species have broader distributions than currently documented, the EPA considers that the proposal is unlikely to result in a significant residual impact and the environmental outcome for terrestrial fauna is likely to be consistent with the EPA's objective for this factor.

Environmental Factor: Subterranean fauna	
Residual impact on key value	**Assessment finding**
Loss of additional stygofauna and troglofaunal habitat due to additional groundwater abstraction and new mine pit excavations.	Stygofauna and troglofaunal habitat occurs outside of the impact area, and is widespread. Surveys identified that none of the stygofauna species that were considered potentially conservation significant are likely to be restricted to the impact area. Based on this information, the EPA considers that existing limitations on groundwater abstraction regulated through the RIWI Act are sufficient to ensure that there are no significant impacts to subterranean fauna. Subject to the recommended conditions, the environmental outcome for subterranean fauna is likely to be consistent with the EPA's objective for this factor.

Environmental Factor: Greenhouse gas emissions	
Residual impact on key value	**Assessment finding**
Cumulative greenhouse gas (GHG) emissions contribute to climate change, which impacts on Western Australia's environment. Proponent's estimated operational emissions estimates of the significant amendment: Scope 1	**Scope 1 emissions** **Regulation under Safeguard Mechanism:** The proponent has identified that the significant amendment is a 'designated large facility' under the *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. Scope 1 emissions from the significant amendment and combined proposal fall beneath the 100,000 t CO_2-e threshold

• 9,024 tonnes of carbon dioxide equivalent (t CO_2-e) per annum, on average • 409,160 t CO_2-e total. Scope 2 • 5,478 t CO_2-e t CO_2-e per annum, on average. • 21,912 t CO_2-e total. Scope 3 • 4,315,551 t CO_2-e per annum, on average. • 17,262,205 t CO_2-e total.	required to be covered by the Safeguard Mechanism on their own. The 'YAN01 Yandi/Marillana Creek Mine – MNG Facility' also includes scope 1 emissions associated with the Ministers North derived proposal, which will bring the facility emissions over 100,000 t CO_2-e. Scope 1 emissions not covered by the Safeguard Mechanism are primarily associated with vegetation clearing and are estimated to be well below 100,000 t CO_2-e (max 167 t CO_2-e in FY29). **Scope 2 emissions** 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. **Scope 3 emissions** 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.

Environmental Factor: Social surroundings	
Residual impact on key value	**Assessment finding**
Potential removal or disturbance of Aboriginal heritage sites. Reduction in visual amenity. Loss of access to country. Impacts to cultural values associated with Marillana Creek Pools and Yandicoogina Gorge.	The proposed significant amendment will directly disturb six Aboriginal heritage sites and potentially lead to restriction of access to country for cultural purposes. Members of EPA Services consulted directly with the Banjima Native Title Aboriginal Corporation (BNTAC) to hear their feedback on the significant amendment. Discharge of water into creek beds as a surplus water management measure was a key area of interest to BNTAC and their expectations were that proponents should be looking to alternatives to manage surplus water. Potential impacts to water-centric values such as the Marillana Creek Pools and Yandicoogina Gorge, have been considered through the inland water factor. Subject to recommended conditions for inland waters, water-centric social and cultural values are likely to be protected. The EPA has recommended the inclusion of conditions to provide for the protection of Aboriginal cultural heritage values and minimise the impacts on visual amenity. Implementation of the recommended conditions is likely to ensure the environmental outcome for social surroundings is consistent with the EPA's objective for the factor.

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
- 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 *Environmental Protection Act 1986*.

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

1 Proposal

The Marillana Creek Life of Mine is a significant amendment proposal to conduct above and below water table mining of additional pits as an extension of existing iron ore operations of Marillana Creek (Yandi) (approved under MS 679 and MS 1039).

The significant amendment includes, but is not limited to, additional vegetation clearing of 95 ha, the development of above and below water table mining at the E8 East and West pits, dewatering and associated surplus water infrastructure, haul roads, flood mitigation and abandonment bunds and an extension of the current mine life by five years (Figure 2).

The proponent is BHP Iron Ore.

The significant amendment proposal detail is set out in section 2 of the proponent's Referral Supporting Document and appendices (BHP, 2026), which is available on the EPA website.

The elements of the significant amendment proposal which have been subject to the EPA's assessment are included in Table 1.

The EPA has assessed the residual impacts of the proposed significant amendments in the context of the approved mining operations, the impacts of the combined approved operations and significant amendments, and the cumulative impacts of the approved mining operations, the significant amendments and other proposals in the region.

The EPA has not reassessed the approved proposal, MS 679 and MS 1039.

Table 1: Significant amendment Proposal Content Document (BHP 2026)

Proposal element	Location	Combined maximum extent or range
Physical elements		
Mine and associated infrastructure	Figure 2	Clearing of no more than 4,653 ha of native vegetation, within the 13,158 ha Development Envelope including: • 593 ha of 'Good' to 'Excellent' vegetation • Clearing of no more than 393 ha of Marillana Creek Diversion • Clearing no more than 18 ha for Marillana Creek Crossings • Clearing of no more than 48 ha of riparian vegetation for the significant amendment
Operational elements		
Overall Production rate	Figure 2-2 of the referral supporting document	87 megatonnes per year
Marillana Creek diversions		Diversion of sections of Marillana Creek to maximise resource use in W5 mine area and the E1 to E6 mine area will be designed and constructed in accordance with the Marillana Creek Diversion Management Plan
Pit depth		Maximum pit depth up to 80 m below ground level
Groundwater abstraction – mine pit dewatering and water supply		Limit of 20.65 GL/year and regulated under RiWI Act
Surplus water management – discharge to creeks		15,000,000 tpa and regulated under Part V Operating Licence

Units and abbreviations
ha – hectare
GL/year – gigalitres per year
tpa – tonnes per annum

Proposal context and alternatives

The existing Yandi mining operations are located 90 km northwest of Newman within the Pilbara bioregion and Hamersley (PIL3) subregion as defined by the Interim Biogeographic Regionalisation of Australia. The mining operations are located within the Marillana Creek Catchment, which is located within the Fortescue River Basin, Figure 1.

Karijini National Park is located 34 km to the southwest of the proposal Development Envelope and Mungaroona Range National Reserve is located 91 km northwest.

Two confirmed Priority Ecological Communities occur within 15 km of the Development Envelope:

- Weeli Wolli Spring community (Priority 1)
- Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously 'Fortescue Valley Sand Dunes') (Priority 3).

Yandicoogina Gorge is located 4km south of the Development Envelope. The gorge contains vegetation associations with similarities to priority 2 Pilbara Pools PEC, with riparian and ground dependent vegetation.

The surface water hydrology of the immediate region is predominantly characterised by Marillana Creek and its tributaries. Marillana Creek runs through the Development Envelope, with no further diversions required.

The proposal is located within the Banjima Native Title determination area (WCD2014/001). The Traditional Owners are represented by the Banjima Native Title Aboriginal Corporation RNTBC (BNTAC).

Given the proposal is a significant amendment located wholly within the approved proposal Development Envelope the proponent has not considered alternative locations for the proposal.

Consultation

The proponent referred the significant amendment proposal to the EPA on 9 May 2025. The proponent's Referral Supporting Document and appendices (BHP, 2025) were published on the EPA website for a seven-day public comment period between 20 May 2025 and 26 May 2025. 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).

The EPA considered the comments received during these public consultation periods in its assessment, and on 3 June 2025 the EPA decided to assess the significant amendment proposal at the level Referral Information with additional information.

Members of EPA Services consulted directly with the Banjima Native Title Aboriginal Corporation (BNTAC) to hear their feedback on the significant amendment.

Discharge of water into creek beds as a surplus water management measure was a key area of interest to BNTAC and their expectations were that proponents should be looking to alternatives to manage surplus water.

The significant amendment proposal was determined under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to be a controlled action and to be assessed by the EPA under an accredited process.

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

The original approval granted by way of MS 679 in July 2005, subsequent amendments to increase production in 2006, 2007 and 2008, new approval granted by way of MS 1039 in October 2016, and subsequent amendments to increase the mining disturbance area in 2013, 2013, 2015 and 2016, were granted under the section of the *Environmental Protection Act 1986* that dealt with the amendment of conditions, in effect at the time.

The *Environmental Protection Act 1986* was amended on 22 October 2021. The amendments included the addition of s.40AA for the assessment of significant amendments.

This proposal is considered a significant amendment to an existing proposal, for assessment under s.40AA. The EPA's assessment has been undertaken in the context of the approved Marillana Creek Life of Mine operations, having regard to the combined and cumulative effects on the environment considering the significant amendments proposed. The EPA has also inquired into the implementation conditions of MS 679 and MS 1039 for the existing Marillana Creek Life of Mine.

Original proposal implementation

The approvals MS 679 and MS 1039 have been implemented since 2005 and 2016. Annual compliance assessment reports have been submitted since 2019 as required by the approvals.

Figure 1: Project location

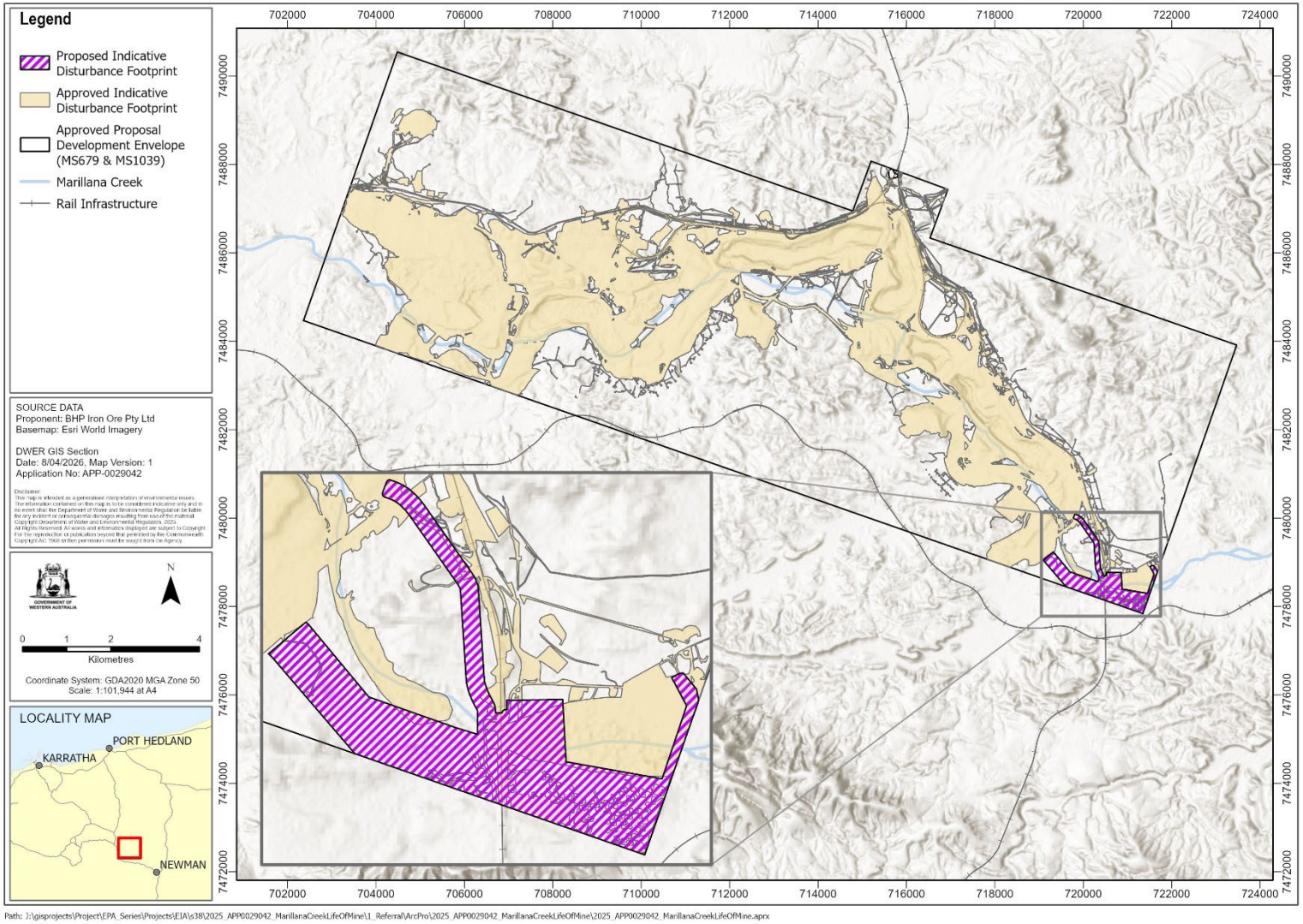

Figure 2: Development envelope and disturbance footprint

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 (terrestrial quality, landforms 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 679 and MS 1039) while having regard to the combined and cumulative effect that the implementation of the approved proposal and the significant amendments may have on the following environmental factors.

2.1 Inland waters

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

The proponent submitted the following investigations, surveys and peer reviews for assessment:

- Marillana Creek Water Resource Management Plan (BHP, 2025)
- Jugari Conceptual Hydrological Model (BHP, 2024)
- BHP Yandi E8 Groundwater Model, Yandi , Western Australia (Intera, 2024)
- MAC Phase 4: Aquatic Monitoring Dry 2022 and Wet 2023 (Biologic 2024)
- Marillana Creek Baseline Hydrology Study, Yandi Closure Landform SPS, (Advisian 2023)
- MAC Phase 4: Marillana Creek Baseline Aquatic Ecosystem Survey, Dry 2021 and Wet 2022 (Biologic 2023)
- Yandi Borefields Annual Aquifer Review (BHP 2023)
- MAC Phase 4: Marillana Creek Baseline Aquatic Ecosystem Survey, Dry 2020 and Wet 2021 (Biologic 2022)
- Yandi Borefields Triannual Aquifer Review (BHP 2022)
- Marillana Creek Diversion Management Plan (BHP, 2016)

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 the Department of Water and Environmental Regulation (DWER) in relation to the surface and groundwater modelling that was considered as part of this assessment.

Table 2: Assessment for inland waters

Key environmental values and context
The Yandi mine is located within the Marillana Creek catchment, which occupies and area of 2050km^2 within the Fortescue River Basin. Surface water features in the Development Envelope are ephemeral, usually flowing in the December to March wet season. Marillana Creek flows through the Development Envelope before entering Weeli Wolli Creek, which in turn flows into Fortescue Marsh. Surface water quality has a pH of between 7.5 and 7.8 with an average Total Dissolved Salts (TDS) of 206 mg/L, while water discharged as a result of abstraction is fresh with a pH of 7.6 with an average TDS of 537 mg/L. Discharge water recorded total nitrogen levels of 0.69 – 4 mg/L, which are above the Australia and New Zealand Guidelines for Fresh and Marine Water Quality in Tropical Australia. Marillana Creek and its tributaries contain a number of semi-permanent pools in an area known as Flat Rocks. These pools support diverse aquatic fauna, with 488 native species being identified during surveys, as well as riparian vegetation that is characterised by *Eucalyptus camaldulensis*, *Eucalyptus victrix*, which opportunistically use groundwater but can survive on soil moisture, and *Melaleuca argentea,* which rely on groundwater to survive. Marillana Creek has previously been diverted in line with the Approved proposal and does not require any further diversion as a result of this significant amendment. Key features presented in Figure 3. There are three main hydrogeological features in the Development Envelope: • Alluvial aquifer – this lies at the surface and groundwater levels fluctuate with seasonal rainfall and streamflow. Groundwater levels vary from between 3 – 12 m below the surface. • Channel Iron Deposit (CID) aquifer (Marillana Creek Formation) – this lies beneath the alluvial aquifer and is where the main impact of drawdown from abstraction of water for mining occurs • Basement (Weeli Wolli Formation) – which lies at the margins and beneath the CID aquifer and is generally less transmissive than the other two aquifer. The Ministers North Aquifer lies approximately 3km south of the significant amendment (and also Rio Tinto iron Ore's Mungadoo Operations) and is assumed to support groundwater dependent ecosystems in Yandicoogina Gorge, approximately 4km south of the Development Envelope. This feature occurs at the convergence of surface and groundwater flows from upstream. The proponent is working in conjunction with Rio Tinto to determine whether there is a connection between the Ministers North Aquifer and the Weeli Wolli Formation which underlies Marillana Creek. The initial assessment of the Yandi Mine occurred in 2005 and was regulated through MS 679. This MS set in place requirements to manage and monitor decommissioning and rehabilitation, impacts on surface water and groundwater, the construction of the Marillana Creek Diversion, the implementation of progressive rehabilitation, and also manage pit lake salinity. In 2016 there was an amendment to conditions under S46 of the EP Act, which resulted in MS 1039 being issued. This new MS replaced the decommissioning and rehabilitation condition, Marillana Creek Diversion condition, with more contemporary conditions and also added a condition requiring offsets.

Impacts from the proposal	Assessment finding, environmental outcome and recommended conditions
Potential impacts	**Assessment finding and environmental outcomes**

• Permanent alteration of the local hydrological regime, include surface water drainage and groundwater availability • Decrease in health of riparian vegetation as a result of alteration of localised hydrology • Impacts on water quality as a result of mining operations **Potential indirect impacts** • Decrease in groundwater levels outside the Development Envelope at Flat Rocks and Marillana Pools and consequent impacts on groundwater dependent ecosystems • Impacts to Yandicoogina Gorge **Avoidance and minimisation measures (including regulation by other DMAs)** • Discharge of dewatering is regulated through DWER Licence L6168/1991/10 which allows the approved proposal to discharge up to 41.1 ML/day of mine dewater into Marillana Creek. Currently discharge is approximately 3.4 ML/day. The Combined proposal will operate within the limits set by this licence • Abstraction of groundwater to allow mining operations is regulated through GWL 89501, issued under the *RIWI Act 191,* which allows for up to 20.65 GL/a of abstraction. • The proponent has already reduced and in some cases ceased using bores that were having an impact on Flat Rocks and Marillana Pools. • The proponent has revised the Marillana Creek Water Resource Management Plan (MCWRMP) to minimse impacts on riparian vegetation from discharge of water and abstraction of water to enable mining. **Consultation** The key matters raised during the consultation period include: • Clarification of direct and indirect impacts on rock pools at Flat Rocks/Marillana Creek and groundwater dependent ecosystems	<u>Surface Water</u> The approved proposal has impacted 0.63% of the Marillana Creek catchment. The significant amendment will contribute another 0.01% reduction to the catchment area. The significant amendment includes the construction of a flood bund to prevent water entering the proposed pits. No additional diversion of Marillana Creek is proposed. The eastern creek crossing will be constructed level with the current flow channel, while the western creek crossing will be designed with culverts that accommodate flows of up to 20% of annual exceedance with larger flows overtopping the road. The EPA considers that these changes are unlikely to cause any significant additional impacts to those of the approved proposal. Surface water quality is generally within accepted guideline values. The exception to this is Total Nitrogen, which is likely to be from the use of explosives within the Development Envelope. The proponent has a Part V license (L6168/1991/10) to discharge dewater from mining operations, with a limit of 41.1 ML/Day. Currently the discharge Is approx. 3.4 ML/day. Impacts on riparian vegetation will continue to be monitored as part of the implementation of the Marillana Creek Water Resource Management Plan (MCWRMP). As the semi-permanent pools monitored as part of the approved proposal lie upstream of the significant amendment, they will not be impacted by this significant amendment in relation to surface water. The EPA considers that discharge of dewater can be regulated through the Part V licence L6168/1991/10 and that changes to surface water catchments and flow will not cause significant impacts and no further conditions relating to surface water flows are required to meet its objective for Inland Waters. <u>Groundwater</u> The EPA notes that the proponent does not intend to change the current peak dewatering rate or annual groundwater abstraction limit of the approved proposal. Dewatering is currently licenced through groundwater licence GWL 89501 issued under the RiWI Act 1914. The proponent has modelled the unmitigated combined proposals' increasing drawdown beneath Flat Rocks and Marillana Pools from 12 m to 15 m. However, reductions in dewatering at the W0 pit already implemented by the proponent

• Necessity of appropriate monitoring and management of river pools and aquatic fauna • Provide further information on the likely effectiveness of mitigation measures • Regular updating of the groundwater model • Impacts of metalliferous drainage and other potential pollutants	have shown improvements in groundwater levels with groundwater recovery in some areas. Monitoring will continue as part of the MCWRMP. Through the implementation of mitigations, the proponent predicts the combined proposals will result in groundwater drawdown of up to 1 m between 2.5 km from north to south and 4.5 km from east to west from the dewatering area. The drawdown is unlikely to extend to the semi-permanent pools at Flat Rock, Marillana Creek or to Yandicoogina Gorge. Drawdown contours represented in Figure 3. The EPA notes the proponent's commitment to minimising any significant residual impacts of the combined proposals due to groundwater drawdown through the implementation of the MCWRMP (version 2.1), including measures to manage and monitor groundwater levels. This is likely to avoid permanent loss of riparian vegetation, and aquatic and terrestrial fauna at Flat Rocks and Marillana Creek pools. The EPA also notes the proponent's investigations into minimising impacts on groundwater drawdown and consequent impacts on riparian vegetation include off-tenure reinjection in the CID upstream of Flat Rocks, and installation of low permeability barriers to slow groundwater flow and encourage retention of water in the CID, without ongoing mitigation activities. Further approvals under the EP Act and RiWI Act would be required if these were to be implemented. The proponent has committed to develop a Flat Rock Springs Tree Restoration Program in collaboration with DBCA, Kings Park Science and the Banjima People. The EPA notes that the proponent's geological studies indicate that there is a low risk of generating acid mine drainage as a result of pit excavation and consequently there is a low risk of impacts to water quality from this source. The proponent intends to backfill the new pit. The Mine Closure Plan has been updated to incorporate the significant amendments. The EPA considers that water quality can be managed through Part V licence L6168/1991/10, and impacts mitigated through implementation of the MCWRMP, and its objective for Inland Waters can be met. <u>Cumulative impacts</u> The EPA has assessed cumulative impacts on groundwater aquifers and surface water systems from the approved proposal and the significant amendment.

	The EPA notes that the modelling undertaken by the proponent indicates that the significant amendment is unlikely to contribute to groundwater drawdown at Ministers North in the vicinity of Yandicoogina Gorge. The reductions in groundwater levels at Yandicoogina Gorge are potentially impacted by third-party mining operations, and the cause of the reductions is currently under investigation. The investigation will review the impacts of climate variability and regional drawdown from mining activities. The proponent is planning to investigate short-term supplementation trials and continue with field studies, which may lead to longer-term supplementation and development of a groundwater management strategy including monitoring, adaptive management and completion criteria. The EPA considers that the cumulative impacts of the approved proposal and the significant amendment can be appropriately managed to provide for an environmental outcome that is consistent with the EPA's objective for Inland Waters. **Recommended conditions to ensure consistency of environmental outcome with EPA objective:** Condition A1 • limits on extent of proposal Condition B1 (MCWRMP) • avoid additional adverse impacts to the Flat Rocks and Marillana surface water pools, including riparian vegetation and aquatic environments in Marillana Creek attributable to the proposal. • avoid additional adverse impacts to riparian vegetation and fauna habitat from the discharge of excess water into Marillana Creek attributable to the proposal. Condition B7 • implement the MCP.

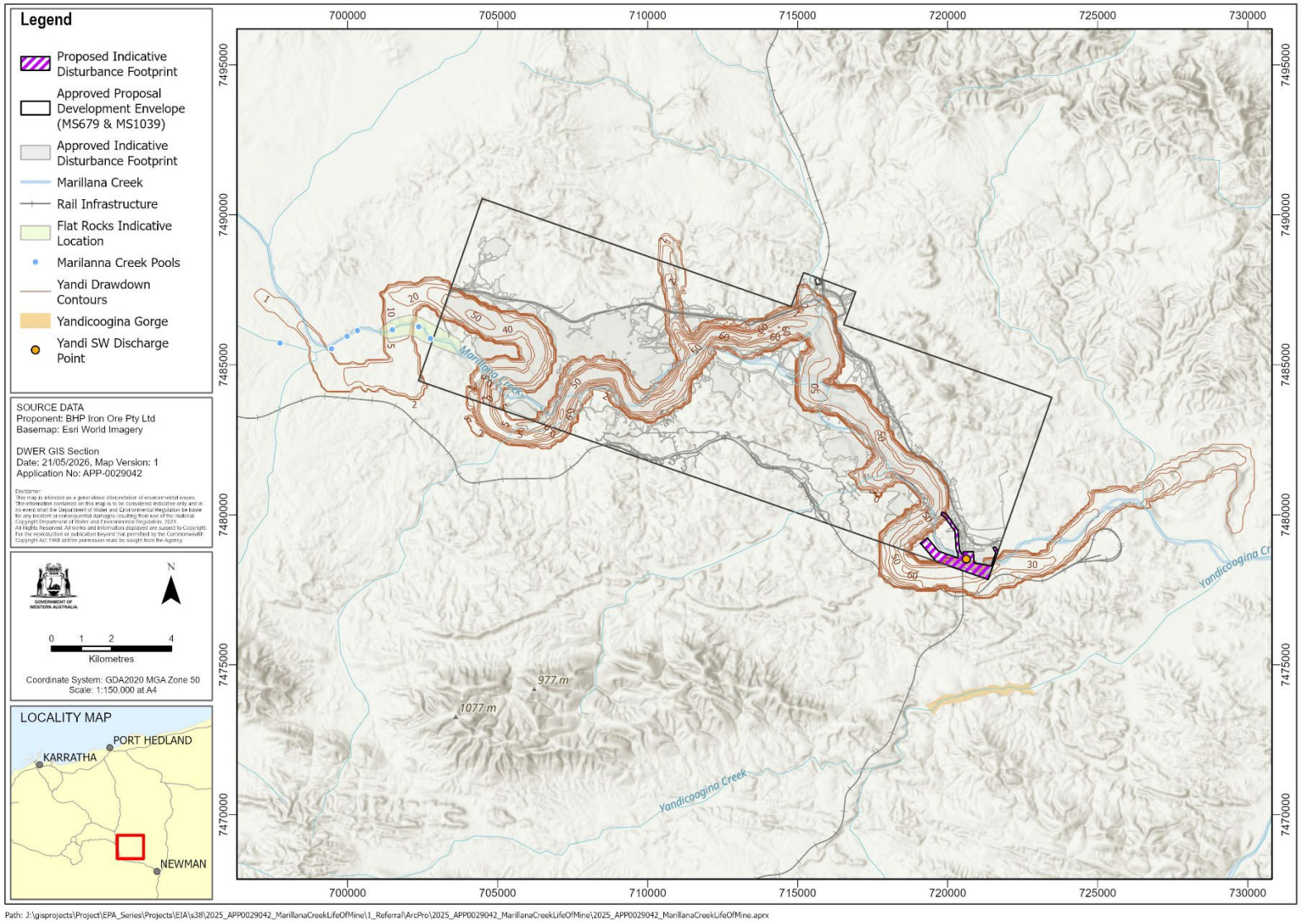

Figure 3: Key Features Surrounding Development Envelope and Drawdown Contours

2.2 Flora and Vegetation

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

The proponent submitted the following investigations and surveys for assessment:

- Central Pilbara Hub Detailed and Targeted Flora Survey (appendix 8.1 of the referral supporting document) (Biologic 2024a)
- Yandi E8 Targeted Flora Survey (appendix 8.2 of the referral supporting document) (Biologic 2023a)
- Targeted Flora Surveys of Pipeline Corridors (appendix 8.3 of the referral supporting document) (GHD 2022)
- Ministers North and Yandi Vegetation Association and Condition Mapping (appendix 8.4 of the referral supporting document) (onshore 2020)
- Ministers North Miscellaneous Licence Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment (appendix 8.5 of the referral supporting document) (Biologic 2020a)
- Marillana Creek Riparian Flora and Vegetation Survey (appendix 8.6 of the referral supporting document) (Onshore 2015)
- Breakaway and Marillana South: Reconnaissance Flora and Vegetation Survey (appendix 8.7 of the referral supporting document) (Biologic 2024g)
- Area C West to Yandi Flora and Vegetation Assessment (Astron 2019)
- Area C West to Yandi: Level 2 Flora and Vegetation Survey (Onshore 2014b)

The flora and vegetation surveys were largely consistent with the *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016). 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 and the DBCA in relation to the flora and vegetation surveys that were considered as part of this assessment.

Table 3: Assessment for flora and vegetation

Key environmental values and context	
The proposal is located in the IBRA Pilbara bioregion, and wholly within the Hamersley subregion. Most of vegetation within the survey area was considered to be in Very Good or Good condition. Two Beard association occur in the Development Envelope: Association 18 – low mulga woodland dominated by *Acacia aneura* Association 82 – hummock grasslands, low tree steppe and snappy gums over *Triodia wiseana*. No threatened flora listed under the BC Act were recorded. One threatened flora listed under the EPBC Act was recorded, *Seringia exastia* (Critically endangered), however, this is likely to be removed from the EPBC Act as it is now considered widespread. Seven priority species listed under the BC Act were recorded. No Threatened Ecological Communities listed under the Biodiversity Conservation Act 2016 (BC Act) or the EPBC Act were identified within the survey area. Two confirmed Priority Ecological Communities occur within 15 km of the Development Envelope: Weeli Wolli Spring community (Priority 1) Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously 'Fortescue Valley Sand Dunes') (Priority 3) Yandicoogina Gorge is located 4km south-east of the Development Envelope. The gorge contains vegetation associations with similarities to priority 2 Pilbara Pools PEC, with riparian and ground dependent vegetation. 43 vegetation associations were mapped within the survey area with nine being aligned with 'ecosystems at risk' by the DBCA, being vegetation associated with Marillana Creek. One vegetation association (SA Aa TpTwTb CcChf) was assessed as having the potential to be Valley Floor Mulga, an ecosystem at risk, with the vegetation association occurring through the Development Envelope. The dominant vegetation association within the Development Envelope is Triodia hummock grassland on hill crests, making up 43% of the vegetation extent in the Development Envelope. 20 of the vegetation associations were mapped as riparian vegetation with 10 of the associations being considered to have moderate or high likelihood of being groundwater dependent. Seven Priority flora species occur within the Development Envelope: • *Acacia subtiliformis* (P3) • *Amaranthus centralis* (P3) • *Aristida lazaridis* (P3) • *Ipomoea racemigera* (P2) • *Lepidium catapycnon* (P4) • *Rostellularia adscendens* var. *latifolia* (P3) • *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4)	
Impacts from the proposal	**Assessment finding, environmental outcome and recommended conditions**

Potential Impacts
 	
Direct Impacts
 	
• Clearing of 95 ha of native vegetation including:
  ○ 85 ha of native vegetation in Good to Excellent condition
  ○ 45 ha of riparian vegetation along Marillana Creek
  ○ Clearing of 30 ha of locally significant vegetation
• Clearing of one priority flora species
  ○ 173 individuals (2.4% of known individuals of *Rostellularia adscendens* var. *latifolia* (P3)
 	
Indirect Impacts
 	
• changes to groundwater and surface water
• Alterations to dust deposition, introduction/spread of weeds, and increased risk of bushfire.
 	
Avoidance measures
 	
• Designed the Development Envelope to utilise existing infrastructure and historically cleared areas where possible
 	
Minimisation measures (including regulation by other DMAs)
 	
• Setting limits on the extent of clearing and disturbance for specific vegetation type
  ○ 95 ha of native vegetation
  ○ 48 ha of riparian vegetation
• Disturb no more than 2.4% of known individuals of *Rostellularia adscendens* var. *latifolia* (P3)
• Undertaking progressive rehabilitation where practicable
	Assessment finding and environmental outcomes
	
	The EPA has assessed the additional clearing of up to 95 ha of native vegetation in 'Good' to 'Excellent' condition. The proponent has proposed to offset the residual impacts to native vegetation through a financial contribution to the Pilbara Environmental Offsets Fund (PEOF), as reflected in recommended condition B7. One Priority flora species, *Rostellularia adscendens* var. *latifolia* (Priority 3), was identified within the proposed footprint. The significant amendment is expected to clear approximately 2.4% of known individuals and records of this species. The EPA does not consider this impact to be significant, as the species is widespread within the Pilbara bioregion, and the species will be maintained.
	
	<u>Combined proposal</u>
	
	The combined proposal will result in the clearing of up to 4,653 ha of native vegetation, including 593 ha in 'Good' to 'Excellent' condition.
	
	Based on the proponent's survey data, approximately 1,574 individuals of *Rostellularia adscendens* var. *latifolia* (Priority 3) occur across 10 populations within the Development Envelope, predominantly along Marillana Creek in uncleared areas. The combined proposal is predicted to impact approximately 6.4% of known individuals. The EPA considers that the species is widespread in the Pilbara bioregion and impacts from the combined proposal are not likely to be significant.
	
	<u>Groundwater Dependent Vegetation</u>
	
	Groundwater abstraction under the combined proposal will result in groundwater drawdown intersecting groundwater-dependent vegetation (GDV) adjacent to the Indicative Footprint. A total of 3.6 ha of High and Moderate likelihood GDV occurs within the modelled drawdown zone and is expected to experience groundwater level reductions of up to 20 m, resulting in vegetation stress and decline.
	
	Under the approved proposal, groundwater drawdown has resulted in documented impacts to riparian vegetation and GDV within and west of the Development Envelope, including vegetation mortality. Within the Development Envelope (excluding areas proposed for clearing), 16.3 ha of High likelihood GDV and 192.5 ha of Moderate likelihood GDV occur within the drawdown zone and remain subject to ongoing impact.
	
	While dewatering intensity has reduced from historical peak levels, further impacts to riparian vegetation and GDV are expected to occur.
	
	The proponent has committed to ongoing monitoring of riparian vegetation and GDV in accordance with the MCWRMP, consistent with condition B1. Subject to the proposed limits and extents in condition A1-1, and the environmental outcomes specified in

• Management measures to minimise the introduction and spread of weed species
• Implement and action the MCWRMP including:
  ○ Further mitigation measures where tree health at Flat Rocks declines
 	
Rehabilitation measures
 	
• Design a revegetation program to establish native vegetation
  ○ Use a specified seed mix, including use of local provenance native seed
• Develop a Flat Rocks Spring rehabilitation strategy
• Flora and vegetation within rehabilitation areas to be comparable with ecosystem structure of reference sites
• Progressive rehabilitation as far as practicable
• Report on performance and progression of rehabilitation via submission of the mine closure plan at regular intervals
	recommended conditions B1 and B2, the EPA considers that residual impacts to flora and vegetation are likely to be consistent with the EPA's objective for this factor.
	
	<u>Cumulative impacts</u>
	
	The proponent has assessed the cumulative impacts of the proposal and other projects in the region on values of flora and vegetation. Up to 11.6% of known individuals of *Rostellularia adscendens* var. *latifolia* (P3) are estimated to be impacted cumulatively, and is not considered significant.
	
	Two regional vegetation associations occur within the Development Envelope. Association 18 will not be directly cleared by the proposal, with cumulative clearing estimated at 2.5% of its current extent. Association 82 will be directly impacted, with cumulative clearing estimated at 1.2% of its current extent.
	
	The EPA considers clearing of vegetation in Good to Excellent condition in the Pilbara to be a significant residual impact due to cumulative clearing pressures. The significant amendment is estimated to contribute approximately 85 ha to the cumulative clearing of vegetation in Good to Excellent condition. The proponent has committed to contributing into Pilbara Environmental Offsets Fund (PEOF) which aims to counterbalance the potential residual impact of clearing 'Good' to 'Excellent' condition native vegetation within the Pilbara bioregion by (recommended condition B8).
	
	Cumulative impacts to flora and vegetation from changes to groundwater regimes have been considered, with relevance to Yandicoogina Gorge, where declines in groundwater levels, GDV condition, and surface water pool levels have been observed through monitoring undertaken since 2020. Monitoring indicates decline in the health of riparian vegetation and GDV within the gorge, including reduced foliage cover and mortality of *Melaleuca argentea* and variable responses in *Eucalyptus camaldulensis*. Similar declines have not been observed at an upstream reference site, indicating that observed impacts within the gorge are likely due to climate variability and cumulative groundwater drawdown from approved operations.
	
	Groundwater modelling indicates that cumulative drawdown of approximately 5–6 m may occur within Yandicoogina Gorge, intersecting approximately 29.7 ha of High likelihood GDV and the majority of the draft potential PEC extent (36.7 ha). The proponent has committed to ongoing monitoring supported by a groundwater supplementation trial to stabilise groundwater levels and determine further potential mitigation measures.
	
	Recommended conditions to ensure consistency of environmental outcome with EPA objective:

	Condition A1 • limits and extents on the proposal Condition B2 • disturbance limits on priority flora Condition B6 and B7 • rehabilitation of flora and vegetation values • revise and implement the MCP Condition B8 • contribute funds to PEOF to counterbalance the significant residual impacts to 'Good' to 'Excellent' condition native vegetation and riparian vegetation.

2.3 Terrestrial fauna

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

The proponent submitted the following investigations and surveys for assessment:

- Ministers North Consolidated Targeted Significant Vertebrate Fauna Surveys (appendix 12.10 of the referral supporting document) (Astron 2024b)
- Yandi 45C Targeted Significant Vertebrate Fauna Survey (appendix 12.11 of the referral supporting document) (Astron 2023a)
- Central Pilbara Hub Targeted Matters of National Environmental Significance (appendix 12.12 of the referral supporting document) Vertebrate Fauna Survey (Biologic 2023b)
- Ministers North Level 1 Fauna Survey (appendix 12.13 of the referral supporting document) (GHD 2021a)
- Yandi Operations Short-Range Endemic Fauna Survey Report (appendix 12.14 of the referral supporting document) (Bennelongia 2024a)
- Ministers North Short-Range Endemic (SRE) Desktop and Field Survey (appendix 12.15 of the referral supporting document) (Bennelongia 2024d)
- Ministers North and Yandicoogina Creek Short-Range Endemic Invertebrate Fauna Survey (appendix 12.16 of the referral supporting document) (Biologic 2021)
- Ministers North Yandicoogina Creek Aquatic Ecosystem Survey Dry 2022 and Wet 2023 (appendix 12.17 of the referral supporting document) (Biologic 2024c)
- MAC Phase 4: Aquatic monitoring Dry 2022 and Wet 2023 (appendix 12.18 of the referral supporting document) (Biologic 2024b)
- MAC Phase 4: Marillana Creek Baseline Aquatic Ecosystem Survey Dry 2021 & Wet 2022 (appendix 12.19 of the referral supporting document) (Biologic 2023e)
- MAC Phase 4: Marillana Creek Baseline Aquatic Ecosystem Survey Dry 2020 & Wet 2021 (appendix 12.20 of the referral supporting document) (Biologic 2022a)
- Ministers North: Yandicoogina Creek Aquatic Ecosystem Surveys (appendix 12.21 of the referral supporting document) (Biologic 2020b)
- MAC Phase 4: Marillana Creek Targeted MNES Fauna Survey (appendix 12.22 of the referral supporting document) (Biota 2022)
- Ministers North Fauna Survey Level 2 Survey (appendix 12.23 of the referral supporting document) (GHD 2021b)
- Ministers North Aquatic Ecosystem Survey: Dry 2021 – Wet 2022 (appendix 12.24 of the referral supporting document) (Biologic 2023d)

- Ministers North: Yandicoogina Creek Aquatic Ecosystem Surveys Dry 2020 and Wet 2021 (appendix 12.25 of the referral supporting document) (Biologic 2022b)
- MAC Phase 4 Aquatic Monitoring Dry 2023 and Wet 2024 (appendix 12.26 of the referral supporting document) (Biologic 2025b)
- MAC to Yandi Corridor & Runaway Valley North Targeted Vertebrate MNES Fauna Survey (appendix 12.27 of the referral supporting document) (Biologic 2025a)
- Breakaway and Marillana MNES Targeted Vertebrate Fauna Survey (appendix 12.28 of the referral supporting document) (Spectrum Ecology 2024)
- Breakaway and Marillana South Basic Terrestrial Fauna Survey (appendix 12.29 of the referral supporting document) (Biologic 2022c).

The terrestrial fauna surveys were not fully consistent with the *Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020b) and *Technical Guidance – Sampling of short range endemic invertebrate fauna* (EPA 2016e). Despite inconsistencies, the EPA considered that the relevant studies can inform the assessment of the potential impacts to the above environmental factor.

The EPA sought advice from DWER and DBCA in relation to the terrestrial fauna surveys that were considered as part of this assessment. The EPA also considered relevant fauna recovery plans and conservation advice where applicable.

Table 4: Assessment for terrestrial fauna

Key environmental values and context
The proposal is located within the Pilbara bioregion. Fourteen vertebrate fauna habitat types were identified within the Development Envelope, of which nine are considered as having moderate to high value for terrestrial fauna, including Wetland, Major Drainage Line, Breakaway/Cliff, Medium Drainage Line, Hardpan Plains, Mulga Woodland, and Calcrete Plains. Of these, Wetland habitat is uncommon within the Pilbara, representing a distinct ecosystem that supports a specialised fauna assemblage. All mapped fauna habitat types are prospective for short-range endemic (SRE) species, as they contain suitable microhabitats, provide shading and/or elevated humidity, and include soil types conducive to burrowing species. The Development Envelope intersects Marillana Creek and supports 12 surface water pools, ranging from temporary to semi-permanent. The Flat Rocks locality is situated in the upper Marillana Creek and extends approximately 5 km from the Development Envelope. This habitat feature comprises exposed bedrock, riparian and groundwater-dependent vegetation, and a series of ephemeral to semi-permanent refuge pools. The area supports high ecological values, providing critical habitat for significant terrestrial and aquatic fauna, including conservation-significant species. A diverse aquatic fauna assemblage, including vertebrates, microinvertebrates, hyporheic fauna, and macroinvertebrates, has been recorded within the Development Envelope and in the upper Marillana Creek pools surrounding Flat Rocks. While no conservation-significant species were recorded within the Development Envelope, 13 conservation-significant species were recorded within the upper Marillana Creek pools, including four species listed on the IUCN Red List. Sixteen conservation significant species were predicted to occur within the Development Envelope. Of these, five species have been recorded in the Development Envelope: • Pilbara Olive Python (VU) • Northern Quoll (EN) • Common Sandpiper (Migratory) • Western Pebble-mound Mouse (P4) • Peregrine Falcon (Other specially Protected Fauna) The other eleven predicted to occur species are considered to have a possible or likely occurrence: • Ghost bat (VU) • Pilbara Leaf-nosed Bat (VU) • Grey Falcon (VU) • Australian Painted Snipe (EN) • Common Greenshank (Migratory) • Fork-tailed Swift (Migratory) • Pilbara Barking Gecko (P2) • Unpatterned Robust Slider (P2) • Brush-tailed Mulgara (P4) • Letter-winged Kite (P4)

Impacts from the proposal	Assessment finding, environmental outcome and recommended conditions

Potential impacts
 	
Direct Impacts
• Clearing of 72 ha of critical habitat
  ○ 72 ha of Ghost Bat critical habitat
  ○ 43 ha of Grey Falcon critical habitat
  ○ 25 ha of Pilbara Olive Python critical habitat
• Clearing of 72 ha of supporting habitat
  ○ 72 ha of Northern Quoll supporting habitat
  ○ 72 ha of Pilbara Leaf-nosed bat supporting habitat
  ○ 0.3 ha of Pilbara Olive Python supporting habitat
  ○ 0.3 ha of Grey Falcon supporting habitat
• Impacts to two SRE species:
  ○ 50% of known records of *Afrosternophorus* 'BPS506'
  ○ 25% of known records of *Beierolpium* 8/4 small 'BPS505'
 	
Indirect Impacts
• Potential loss of terrestrial and aquatic fauna habitat at Flat Rocks and Marillana Creek Pools from combined proposal
• Potential degradation in terrestrial and aquatic fauna habitat from change in water quality and drawdown
 	
Avoidance measures
• Avoid the use of barbed wire fencing as far as practicable
 	
Minimisation measures (including regulation by other DMAs)
• Fauna spotters utilised where clearing is undertaken in critical habitat
• Where barbed wire fencing cannot be avoided, reflectors will be installed to prevent entanglement of bat
• Implementing standard management practices to minimise impacts associated with increased noise, dust, vibration, light, weeds and feral fauna
• Monitoring and management of fauna habitat in conjunction with the MCWRMP
	Assessment finding and environmental outcomes
	
	<u>Survey Reports</u>
	
	Existing information is derived from historical targeted surveys undertaken for previous proposals, which only partially overlap the current development footprint and were not designed to address the requirements of this proposal. As a result, the information does not provide an integrated or comprehensive baseline fauna assessment. Consistent with the EPA's *Technical Guidance – Terrestrial Fauna Surveys* (EPA, 2020), a detailed fauna survey should be undertaken across the full extent of the Development Envelope to establish baseline conditions, with targeted surveys used only to address identified knowledge gaps where required. In the absence of adequate survey coverage and consistent with the Precautionary Principal, the EPA assumes that fauna species are likely to occur wherever critical or supporting habitat has been identified within the Development Envelope.
	
	To mitigate potential impacts to priority fauna from clearing of critical habitat, the EPA has recommended condition B3-3.
	
	<u>Critical Habitat and Threatened and Priority Fauna</u>
	
	The proposal will result in the clearing of approximately 72 ha of fauna habitat, comprising Wetland, Major Drainage Line, Drainage Area/Floodplain, Undulating Low Hills, Stony Plain, Hillcrest/Hillslope, and Minor Drainage Line habitats. The EPA notes that most of these habitat types are widespread within the local area and across the Pilbara region. However, Wetland habitat is limited in distribution within the Pilbara.
	
	The Wetland habitat represents critical habitat for the Pilbara Olive Python and Ghost Bat and supporting habitat for the Northern Quoll and Pilbara Leaf-nosed Bat. As wetland habitats represent distinct ecological systems with conditions highly suited to short-range endemic (SRE) species, impacts to this habitat type are considered significant.
	
	The additional clearing of fauna habitat will result in the loss of approximately 50% of known records of *Afrosternophorus* 'BPS506' and 25% of known records of *Beierolpium* 8/4 small 'BPS505' and will also

Rehabilitation measures • Undertaking progressive rehabilitation where practicable • Implement Mine Closure Plan • Develop a Flat Rock Springs Tree Restoration Program in collaboration with DBCA, Kings Park Science and the Banjima People	remove two historical records of the Pilbara Olive Python. The EPA notes that all species are known to occur outside the indicative development footprint and that at a regional scale, species viability is likely to be maintained. To minimise the potential impacts to fauna habitat and threatened and priority fauna species, the EPA has recommended conditions B2 (Flora and Vegetation) and condition B3 (Terrestrial Fauna). <u>Combined proposal</u> The combined proposal will result in the clearing of up to 4,653 ha of fauna habitat within the Development Envelope. The EPA notes limitations in the availability and resolution of fauna habitat information, as the majority of historical clearing occurred under Ministerial Statement 679, prior to the release of EPA technical guidance and before detailed fauna habitat mapping became standard practice. In this context, the EPA has applied conditions to limit habitat clearing associated with the implementation of the Significant Amendment, addressed in condition B3-1. The combined effect of clearing associated with the combined proposal is predicted to result in direct impacts to approximately 2.7% of known records of the Pilbara Olive Python, 0.1% of known records of the Northern Quoll, and 3% of known records of the Western Pebble-mound Mouse. <u>Indirect Impacts</u> The EPA considers that the proposal has the potential to degrade terrestrial and aquatic fauna habitat through changes to surface water flow and groundwater regimes. Significant aquatic fauna species identified in the ERD are likely to be impacted by the combined proposal, with indirect impacts expected to surface water pools. Impacts are considered likely for the majority of aquatic fauna species identified, including one species endemic to the Pilbara bioregion (*Limnadopsis pilbarensis*). The EPA notes that, with regulation under Part V, ongoing monitoring and implementation of condition, EPA's objective for terrestrial fauna is likely to be met. <u>Cumulative impacts</u> Cumulative impacts to terrestrial fauna habitat have been considered in the context of existing operations and reasonably foreseeable future developments within the region. Direct impacts from the proposal will not exceed 1% of the extent of any land system within the Pilbara bioregion.

	When considered cumulatively with other current and future developments, total impacts are not expected to exceed 6% for any land system. On this basis, cumulative impacts to land systems are not considered to represent a significant residual impact at the bioregional scale. Cumulative impacts to fauna from changes to groundwater regimes have been considered, with relevance to Yandicoogina Gorge, where declines in groundwater levels, groundwater-dependent vegetation condition, and surface water pool levels have been observed. Groundwater levels in the vicinity of the gorge have declined by approximately 3.5 m, and cumulative groundwater modelling predicts an additional 5–6 m reduction under combined drawdown and climate variability. Within the cumulative drawdown extent, approximately 29.7 ha of terrestrial fauna habitat containing high-likelihood GDV and permanent or semi-permanent pools occurs, with a further 12.1 ha of moderate-likelihood groundwater-dependent fauna habitat present upstream; these areas comprise Major Drainage Line and Gorge/Gully habitats that support conservation-significant vertebrate fauna, short-range endemic invertebrates, and a diverse aquatic fauna assemblage. Impacts to fauna and fauna habitat can be regulated by way of conditions including A1 (limits and extents) and B3 (disturbance limit for fauna habitat). Consistent with the WA Environmental Offsets Policy (Western Australian Government 2011), the proponent has committed to contribute to the Pilbara Environmental Offsets Fund (PEOF) to improve biodiversity conservation outcomes with the aim of counterbalancing the significant residual environmental impacts of the proposal. This can be regulated by way of condition B7. **Recommended conditions to ensure environmental outcome consistency with EPA objective:** Condition A1 • limits and extents on proposal Condition B2 • Disturbance limits of Good to Excellent condition vegetation Condition B3 • disturbance limits on habitat types • no increase in feral animal presence

	• minimise indirect impacts to critical fauna habitat • preclearance surveys for presence of the Northern Quoll and Pilbara Olive Python • fauna spotter and relocation of fauna during clearing activities Condition B6 and B7 • rehabilitation of terrestrial fauna habitat • revise and implement the MCP Condition B8 • contribute funds to PEOF to improve biodiversity conservation outcomes with the aim of counterbalancing the significant residual environmental impacts of the proposal.

2.4 Subterranean fauna

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

The proponent submitted the following investigation and surveys for assessment:

- Yandi Operations Subterranean Fauna Survey Report, April 2024 (refer to Appendix 15.1 of Referral ERD) (Bennelongia 2024b)
- Ministers North Subterranean Fauna Survey, December 2024 (refer to Appendix 15.2 of Referral ERD) (Bennelongia 2024c)
- Jugari East 8 Subterranean Fauna Habitat Modelling, October 2024 (refer to Appendix 15.3 of Referral ERD) (Biologic 2024c)
- Yandi Targeted Subterranean Fauna Survey Report, April 2025 (refer to Appendix 15.4 of Referral ERD) (Bennelongia 2025)

The EPA notes that the subterranean fauna surveys were largely consistent with the EPA's *Technical guidance – Subterranean fauna surveys for environmental impact assessment* (EPA 2021e). 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 impacts on subterranean fauna. Surface and groundwater modelling was considered as part of this assessment.

Table 5: Assessment for subterranean fauna

Key environmental values and context
The Pilbara region is recognised as having a high diversity of subterranean fauna. The significant amendment is situated within the Hamersley IBRA subregion, which is dominated by band-iron formation with chert, mudstone, siltstone, rhyolite, and numerous dolerite sills also present. Surface geology comprises primarily exposed rock, with alluvium and colluvium along drainage lines. The Yandi area includes the Weeli Wolli Iron Formation, which sits beneath the Marillana Formation Channel Iron Deposit (CID). This is overlain with superficial detritals. Subterranean fauna habitat is contained mainly within the Marillana Formation, which incorporates a paleochannel orebody and is the main aquifer within the Development Envelope. It contains zones of high permeability, with lower permeability being more common in lower parts of the CID and the basal clay/conglomerate. The relatively shallow depth to groundwater, its low salinity, and the high permeability with the Development Envelope make this suitable habitat for subterranean fauna. The alluvial sediments in the immediate vicinity of the E8 pit provide medium suitability for subterranean fauna. The Weeli Wolli Formation is a fractured rock aquifer comprised of weathered shale and dolerite, which has variable permeability due to areas of fresh or unweathered rock being relatively impermeable. The deeper less-weathered parts of this formation have very low to moderate transmissivity. It is therefore considered less likely to provide suitable habitat due to this variable permeability but has not been sampled as extensively as the Marillana Formation and cannot therefore be entirely excluded as subterranean fauna habitat. Sampling for troglofauna include 205 samples from 16 sample sites located within impact areas associated with the development, and a further 37 sample sites within the Development Envelope but outside the predicted impact area. Approximately 35 troglofauna taxa are known from the Development Envelope. None of the troglofaunal taxa, nor the communities recorded in the DE are listed under the EPBC Act or the BC Act. A total of 15 troglofauna species are currently known only from the DE, five of which are currently only known from the proposed mine pits of the proposed amendment, these being: • *Hanseniella* sp. indet., • *Hesperanillus* `BCO247`, • *Cryptops* `BSCOL091`, and • *Haplodesmidae* `BDI080` • *Trigoniulidae* `BDI079`. Subterranean fauna surveys at Yandi collected 1,904 specimens representing at least 35 species. These surveys included an initial survey (Bennelongia, 2024b) and a subsequent targeted survey (Bennelongia 2025). A number of stygofauna species were identified as of conservation significance, or potential conservation significance. These were: • *Elaphoidella* `BHA342` • *Parastenocaris* `BHA343`. • *Pilbaranella sp.* Habitat modelling was undertaken to better understand the extent to suitable habitat for subterranean fauna (Biologic 2024). Previous assessments of the Yandi Iron Ore mine did not include subterranean fauna. A section 46 enquiry was undertaken in 2016, which amended conditions relating to rehabilitation and decommissioning, the diversion of Marillana Creek, and offsets. The assessment of impacts to subterranean

fauna related to the significant amendment is therefore considered in the context of existing developments which have not previously addressed this issue.

The MS 679 approval included conditions for the investigation of stygofauna to maintain the abundance, diversity, geographic distribution and productivity of stygofauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvements in knowledge, and these conditions are still applicable under the amended Ministerial Statement.

Impacts from the proposal	Assessment finding, environmental outcome and recommended conditions
Potential impacts The significant amendment has the potential to significantly impact on subterranean from: • Loss of stygofauna habitat as a result of groundwater abstraction • Loss of troglofauna habitat due to excavation of mine pits **Potential indirect impacts** • changes to surface inputs of flow/volume of water, nutrients and oxygen • changes to structure and presence of underground voids • contamination from spills, leaching and incidents. **Avoidance and minimisation measures (including regulation by other DMAs)** • impacts associated with the abstraction of groundwater can be adequately addressed through the current abstraction licence GWL 89501 issued under the RiWI Act • implementation of the Marillana Creek Water Resource Management Plan (MCWRMP) and MCP **Consultation** The key matters raised during the consultation period include:	**Assessment finding and environmental outcomes** <u>Stygofauna</u> Of the stygofauna species recorded during the various subterranean fauna surveys, two found in the area of impact were potentially limited in distribution. The targeted survey (Bennelongia, 2025) noted these as *Elaphoidella* sp. 'BHA342' and *Parastenocaris* sp. 'BHA343'. Habitat modelling (Biologic, 2024) indicated that the habitat for *Elaphoidella* sp. 'BHA342' has been found to occur more widely beyond the Study Area at Jugaricoogina Creek. Consequently, this species is considered to occur more widely throughout the catchment and is not expected to be seriously impacted. *Parastenocaris* sp. 'BHA343' has subsequently been found 33 km away and is no longer considered restricted to the impact area. In addition to these species there is some uncertainty regarding the distribution of *Pilbaranella* `BSY372' and whether it is a new species or related to *Pilbaranella sp.*, which was collected 7 km away. However, as both species occur outside the additional groundwater drawdown resulting from the combined proposal, no increase in impacts are expected for these species. Based on the widespread habitat that occurs outside of the impacts area, together with surveys identifying that none of the stygofauna species that were considered potentially conservation significant are likely to be restricted to the impact area, the EPA considers that existing limitations on groundwater abstraction regulated through the RIWI Act are sufficient to ensure that there are no significant impacts to stygofauna.

• clarify the impacts of the combined proposal on groundwater dependent ecosystems • Figures should be updated to reflect the consolidated data from all surveys. • Clarify impacts on species considered restricted or potentially restricted. • The MCWRMP needs to be updated to include managing impacts on stygofauna	Subject to the recommended conditions, the environmental outcome for subterranean fauna is likely to be consistent with the EPA's objective for this factor. <u>Troglofauna</u> The significant amendment will result in a reduction of troglofauna habitat within the CID. However, the EPA notes that the 3D habitat modelling (developed in Maptek Vulcan Software, converted into Leapfrog), which has been undertaken (Biologic, 2024) indicates a wider extent of connected and suitable habitat remaining intact beneath or outside the areas of impact, supports the conclusion that there are unlikely to be significant impacts on troglofauna as a result of the combined proposal. Based on this, the EPA did not consider that a condition specifically for troglofauna was necessary or important to maintain consistency with the EPA objective for subterranean fauna. <u>Cumulative impacts</u> Cumulative impacts on subterranean fauna are from the loss of habitat from excavation of mine pits and/or the reduction in groundwater levels due to dewatering. All suitable habitat types for stygofauna are likely to be widespread and well-connected, and the habitat assessment indicated that troglofauna extends outside the areas of impact, therefore significant impacts are unlikely. The implementation of existing or reasonably foreseeable projects is unlikely to change this conclusion. The EPA considers that the impacts of the significant amendment, in the context of the significance of the environmental values at risk, can be approximately managed to provide for environmental outcomes that are consistent with the EPA's objectives for subterranean fauna. **Recommended conditions to ensure consistency of environmental outcome with EPA objective:** Condition B1-2 • Implementation of the MCWRMP

2.5 Greenhouse gas emissions

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

The EPA recognises that the proponent prepared its information relating to this factor in accordance with the 2023 version of the *Environmental Factor Guideline – Greenhouse Gas Emissions (EFG GHG; EPA 2024)*.

Table 6: Assessment for greenhouse gas emissions

Key environmental values and context	
GHG emissions from a cumulative range of sources have an impact on Western Australia'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 Western Australia'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. The EPA therefore considers GHG emissions to be a key environmental factor in the assessment of the proposal. There is also an established correlation between global temperature rise and greenhouse gas emissions. The EPA advises that for every 1,000 billion tonnes [i.e. 1 gigatonne (1 Gt)] of carbon dioxide 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).	
Impacts from the proposal	**Assessment finding, environmental outcome and recommended conditions**
GHG emissions estimates	
Scope 1 Scope 1 emissions will be generated through: • diesel use for heavy haulage and ancillary equipment such as excavators • dewatering activities • vegetation clearing Vegetation clearing is the only source of scope 1 emissions that is not covered by the National Greenhouse and Energy Reporting Scheme and Safeguard Mechanism. **Scope 2** Scope 2 emissions associated with the proposal are associated with grid-connected electricity from Yarnima Power Station. **Scope 3** Scope 3 emissions will be generated through: • diesel consumed by rail locomotives transporting ore to Port Hedland	Scope 1 emissions from operations were calculated consistent with methodologies developed and applied by DCCEEW in National and State climate change inventory reporting, specifically the National Greenhouse and Energy Reporting Scheme. Scope 1 emissions from land clearing were calculated using the Full Carbon Accounting Model (FullCAM) methodology, which is consistent with National Inventory reporting used by DCCEEW to determine land use and land use change and forestry emissions in both national and state emission inventory reporting. Scope 1 emissions from the significant amendment and combined proposal fall beneath the 100,000 t CO_2-e threshold required to be covered by the Safeguard Mechanism on their own. The 'YAN01 Yandi/Marillana Creek Mine – MNG Facility' also includes scope 1 emissions associated with the Ministers North derived proposal, which will bring the facility emissions over 100,000 t CO_2-e. Scope 2 emissions estimates are based on the recent average of BHP's NGER Act reported emissions associated with megawatt hours of electricity generation from Yarnima Power Station. The emissions for the proposal have been calculated by apportioning estimated electricity demand with development scenarios to the unit emissions per megawatt.

• downstream production of steel by third parties **GHG emissions during operations** The proponent has provided estimates of operational annual average GHG emissions over the life of the proposal. **Significant Amendment** • Scope 1 emissions covered by Safeguard Mechanism – 8,986 t CO_2-e (max 17,238 t CO_2-e in FY27) • Scope 1 emissions not covered by Safeguard Mechanism – 38 t CO_2-e (max 167 t CO_2-e in FY 29) • Scope 2 – 5,478 t CO_2-e (max 12,252 t CO_2-e in FY27) • Scope 3 – 4,315,551 t CO_2-e (9,538,704 t CO_2-e in FY27). **Combined proposal** • Scope 1 emission covered by Safeguard Mechanism – 49,533 t CO_2-e (max 89,791 t CO_2-e in FY28) • Scope 1 emissions not covered by Safeguard Mechanism – 175 t CO_2-e (max 284 t CO_2-e in FY29) • Scope 2 – 9,873 t CO_2-e (max 25,460 t CO_2-e FY26) • Scope 3 – 18,312,706 t CO_2-e (max 20,851,796 t CO_2-e in FY 2026). **Cumulative effects** WA's yearly scope 1 emissions based on 2022 levels were 82.5 million tonnes (Mt) CO_2-e (DCCEEW 2024) and national emissions for 2022 were 432.9 Mt CO_2-e (DCCEEW 2023). The annual estimated scope 1 GHG emissions from the proposal would constitute approximately 0.06% of WA's total emissions and 0.011% of Australia's total reported GHG emissions. The annual estimated scope 1 GHG emissions from the combined proposal would constitute approximately 0.072% of WA's total emissions and 0.013% of Australia's total reported GHG emissions.	Scope 3 emissions associated with domestic transport to the Port Hedland ship loading facility were estimated by apportioning NGER reported emissions associated with BHPIO's Port Hedland activities required to support the forecasted production from the proposal. Scope 3 emissions associated with steel making is estimated using a global average emissions intensity factor (tonnes of CO_2 per tonne of crude steel). Scope 3 emissions from international shipping are estimated based on a assumption of 100% of production form the proposal will be shipped over a distance reflecting a North Asia dispatch region and using an industry average of historical emissions intensity factor per voyage. The EPA considers that the proponent's estimated GHG emissions quantities are a reasonable basis for the assessment.
Baseline emissions avoidance and minimisation	

Scope 1 emissions from the significant amendment are those associated with diesel consumed for heavy haulage and ancillary equipment, dewatering, and land clearing. **Significant Amendment** • Scope 1 emissions covered by Safeguard Mechanism – 8,986 t CO_2-e (max 17,238 t CO_2-e in FY27) • Scope 1 emissions not covered by Safeguard Mechanism – 38 t CO_2-e (max 167 t CO_2-e in FY 29) **Combined proposal** • Scope 1 emission covered by Safeguard Mechanism – 49,533 t CO_2-e (max 89,791 t CO_2-e in FY28) • Scope 1 emissions not covered by Safeguard Mechanism – 175 t CO_2-e (max 284 t CO_2-e in FY29) The proponent has identified the following measures to avoid and minimise scope 1 GHG emissions: • avoidance of land clearing through use of existing infrastructure • use of high efficiency pumps and motors, optimisation of bore locations and pipe design to reduce GHG emissions from dewatering operations • increasing the sources of renewable energy providing power mining operations, through proven technology such was windfarms and solar farm • electrification of heavy mining equipment	The EPA considers that the proponent has adopted avoidance and mitigation measures to reduce GHG emissions. The EPA notes that the proponent has proposed electrification of mining equipment across the Pilbara but has not provided implementation milestones specific to the proposal. The proponent has identified that the approved proposal is registered as a Safeguard Facility under 'YAN01 Yandi/Marillana Creek Mine – MNG Facility' and as such the Safeguard Mechanism will apply to emissions from the proposal and combined proposal. The default Iron Ore emission intensity of 0.00467 t CO_2-e per tonne of iron ore will be applicable. The EPA notes that both annual residual scope 1 emissions from the combined proposal covered by Safeguard and not covered by Safeguard are expected to be below 100,000 t CO_2-e (max 89,791 t CO_2-e in FY28). Scope 1 emissions not covered by the Safeguard Mechanism are primarily associated with vegetation clearing and are estimated to be 175 t CO_2-e per annum, with a peak of 284 t CO_2-e and 2,271 t CO_2-e over the life of the combined proposal. 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 represents a linear trajectory to net zero by 2050. The EPA notes that the proponent has adopted a scope 1 emissions reduction trajectory that aligns with the Safeguard Mechanism. 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
Emissions trajectory to 2050	
The proponent's long-term goal for both its scope 1 and scope 2 emissions from its operated assets is to achieve net zero operational GHG emissions by 2050 and reduce operational GHG emissions by at least 30% by financial year 2030. The proponent has adopted an indicative scope 2 emissions reduction trajectory for the combined proposal aligned with the Safeguard Mechanism (figure 3).	
Scope 2 GHG emissions	

Scope 2 emissions associated with the significant amendment are those associated with the generation and transportation of electricity from Yarnima Power Station: • natural gas consumed for power generation • diesel consumed for power generation • fugitive emissions of sulphur hexafluoride Annual average scope 2 GHG emissions for the significant amendment are estimated to be 5,478 t CO_2-e per annum with a peak of 12,252 t CO_2-e in FY27. Annual average scope 2 GHG emissions for the combined proposal are estimated to be 9,873 t CO_2-e with a peak of 25,460 t CO_2-e in FY26.	Yarnima Power Station is a designated large facility under the NGER Act. The proponent is required to reduce emissions associated with electricity generation at Yarnima Power Station through compliance with the Safeguard Mechanism on a trajectory aligned with a 34.3% decline rate by 2030 and net-zero by 2050. The EPA is of the view that emissions reductions required under the Safeguard Mechanism, in conjunction with best practise measures, represents as far as practicable for the reduction of greenhouse gas emissions from the proposal.
Scope 3 GHG emissions	
Scope 3 emissions from the significant amendment are those associated with rail transport of ore to Port Hedland, ship loading at Port Hedland, international shipping and steelmaking. Annual average scope 3 GHG emissions for the significant amendment during operations are estimated to be 4,315,551 t CO_2-e per annum with a peak of 9,538,704 t CO_2-e in FY27. Annual average scope 3 GHG emissions for the combined proposal during operations are estimated to be 18,312,706 t CO_2-e per annum with a peak of 20,851,796 t CO_2-e in FY26.	Scope 3 emissions form a large proportion (over 99%) of the total GHG emissions over the life of the combined proposal. The proponent has taken the following measures to reduce scope 3 emissions: • electrification of rail locomotives for ore transport • purchasing solar power to power ship loading facilities at Port Hedland • investment into decarbonisation of steel production The EPA notes that the proponent has taken measures to reduce scope 3 emissions and encourages the proponent to take further reasonable opportunities to reduce emissions as they raise through the life of the combined proposal to further reduce scope 3 emissions.
Offsets	
The proponent prioritises GHG emissions reductions at its operated assets to achieve its scope 1 and scope 2 targets and goals, however acknowledges there is a role for offsets i.e. Australian Carbon Credit Units (ACCU) and Safeguard Mechanism Credits (SMC). Therefore, where structural abatement of emissions reduction trajectory, the proponent will ensure targets are met by using SMC by either using banked SMCs from prior years, transferring SMCs from other BHP facilities and/or retiring eligible, high quality offsets in a temporary or	The EPA considers it 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

transitional capacity while abatement options are being studied, as well as 'hard to abate' emissions with limited or not current technological solutions, and where access to renewable energy is constrained. This approach is consistent with the principle that offsets should be a last resort, applied only after all reasonable avoidance and minimisation measures have been implemented. The EPA considers it 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.	of short- and long-term sourcing approaches, are likely to ensure sufficient offsets are available that satisfy integrity principles.
Other decision-making processes, including the Commonwealth Safeguard Mechanism	
Commonwealth Safeguard Mechanism The proponent has identified that the 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 Australia emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050.	The proponent has identified that the approved proposal is registered as a Safeguard Facility under 'YAN01 Yandi/Marillana Creek Mine – MNG Facility' and as such the Safeguard Mechanism will apply to emissions from the proposal and combined proposal. The default Iron Ore emission intensity of 0.00467 t CO_2-e per tonne of iron ore will be applicable. The EPA notes that both annual residual scope 1 emissions from the combined proposal covered by Safeguard and not covered by Safeguard are expected to be below 100,000 t CO_2-e (max 89,791 t CO_2-e in FY28). Scope 1 emissions not covered by the Safeguard Mechanism are primarily associated with vegetation clearing and are estimated to be 175 t CO_2-e per annum, with a peak of 284 t CO_2-e and 2,271 t CO_2-e over the life of the combined proposal. 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 represents a linear trajectory to net zero by 2050. The EPA notes that the proponent has adopted a scope 1 emissions reduction trajectory that aligns with the Safeguard Mechanism. 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 that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism (recommended condition B4). **Recommended conditions to ensure consistency of environmental outcome with EPA objective** Condition B4 • Reporting if obligations change under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and Safeguard Mechanism.

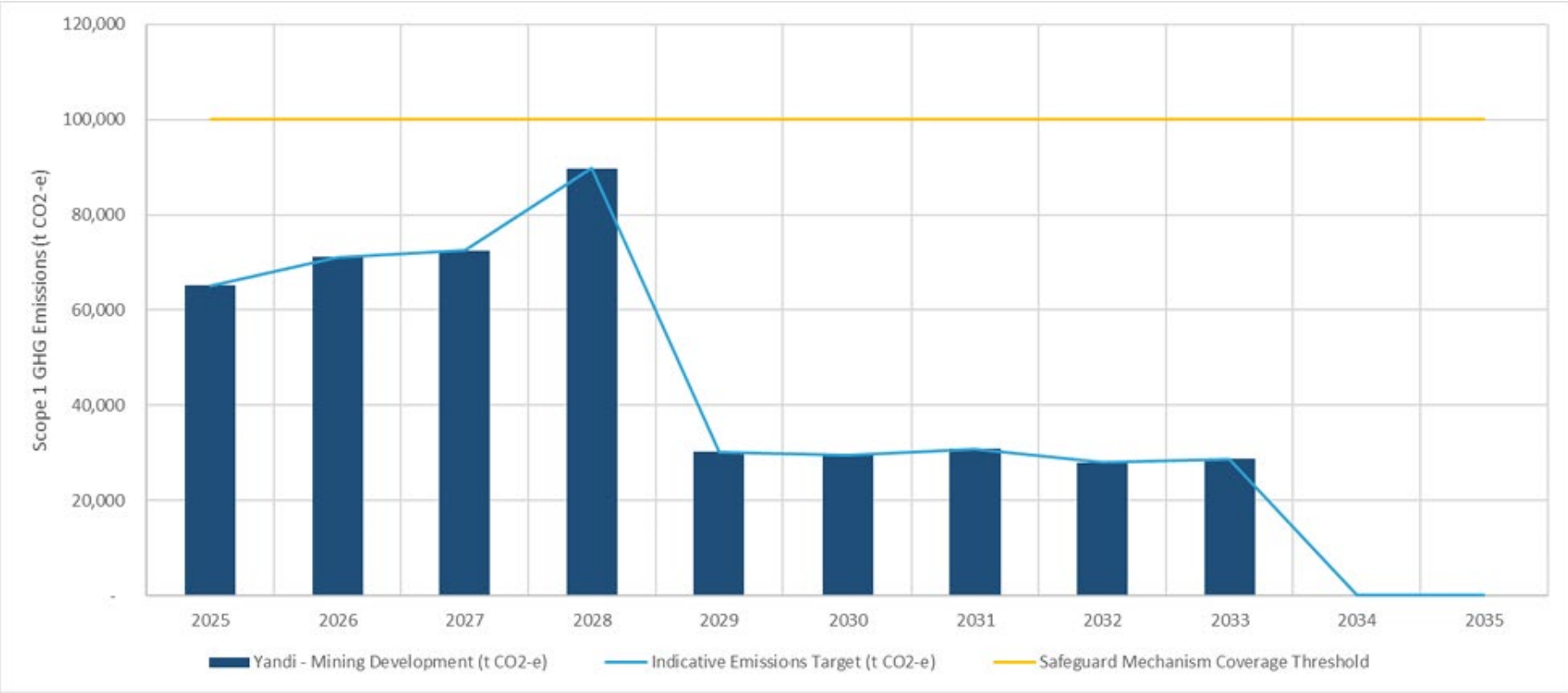

Figure 4: Combined proposal scope 1 emissions and Safeguard baseline

In summary, the EPA considers that the emissions avoidance, minimisation and offsets 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 scope 1 emissions from the combined proposal of 49,654 t CO_2-e per annum do not exceed the 100,000 t CO_2-e per annum threshold in the EFG GHG (EPA 2024). This includes emissions from land clearing that are not covered by the Safeguard Mechanism. The 'YAN01 Yandi/Marillana Creek Mine – MNG Facility' also includes scope 1 emissions associated with the Ministers North derived proposal, which will bring the facility emissions over 100,000 t CO2-e. The EPA notes that the combined proposal is a designated large facility and is subject to reduction targets specified under the Safeguard Mechanism.

The EPA recognises that the significantly strengthened Commonwealth 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 2050 are achieved. The EPA is of the view that emissions reductions required under the Safeguard Mechanism, in conjunction with best practice measures represents as practicable for the reduction of greenhouse gas emissions from the 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).

The EPA notes that scope 2 emissions of 9,873 t CO_2-e per annum (average) for the combined proposal do not exceed the 100,000 t CO_2-e per annum threshold in the EFG GHG (EPA 2024). These emissions are associated with the consumption of grid generated electricity from the Yarnima Power Station. The EPA notes that the Yarnima Power Station is itself a designated Safeguard Facility and is subject to reduction targets specified under the Safeguard Mechanism. The EPA has therefore not recommended conditions relating to scope 2 emissions for the proposal.

Scope 3 emission form a large portion (over 99%) of total GHG emissions over the life of the combined proposal and are estimated to exceed 100,000 t CO_2-e per annum. The EPA notes that the proponent has taken all practicable measures currently available to reduce scope 3 emissions and encourages the proponent to take further reasonable opportunities to reduce emissions as they arise through the life of the project to reduce scope 3 emissions.

2.6 Social surroundings

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

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

The proponent has an ongoing relationship with the Banjima Traditional Owners which is formalised through a comprehensive agreement and associated registered Indigenous Land Use Agreement (ILUA). The proponent has provided a history of ethnographic and heritage surveys that have taken place from 1981 to 2021, in their referral supporting documentation.

Table 7: Assessment for social surroundings

Key environmental values and context
The proposal is located entirely within the Banjima Native Title Determination (WCD2014/001) and consultation with the Traditional Owners has been facilitated by the Banjima Native Title Aboriginal Corporation (BNTAC). The proponent has advised that they engage regularly with representatives for the Banjima People through the Heritage Advisory Council. This is formalised through a Comprehensive Agreement and associated Indigenous Land Use Agreement (ILUA). The proponent has provided a history of ethnographic and heritage surveys in their referral supporting documentation. Surveys that have taken place from 1981 to 2021. The key social surroundings values that have been identified as relevant to this proposal are the Flat Rocks site, and Yandicoogina Gorge. Flat Rocks is a cultural and archaeological heritage site that is located on the western end of the Yandi Mine. Yandicoogina Gorge is located 4 km south of the Development Envelope and is an important feature of the Pilbara ecohydrological system. The Gorge contains archaeological sites that are significant to the Banjima Traditional Owners. Members of EPA Services consulted directly with the Banjima Native Title Aboriginal Corporation (BNTAC) to hear their feedback on the significant amendment. Discharge of water into creek beds as a surplus water management measure was a key area of interest to BNTAC and their expectations were that proponents should be looking to alternatives to manage surplus water.

Impacts from the proposal	Assessment finding, environmental outcome and recommended conditions
Potential impacts • removal or disturbance of registered Aboriginal heritage sites • impacts to cultural values associated with the Flat Rocks Pools as a result of groundwater drawdown • impacts to cultural values associated with Yandicoogina Gorge as a result of groundwater drawdown • impacts to social and cultural values associated with changes to surface and groundwater quality and regimes • clearing of 95 ha of native vegetation • reduction in amenity and landscape values due to the formation of pit lakes and permanent landforms post-closure • loss of access to country • impacts to amenity from dust, noise and light emissions **Avoidance, minimisation and rehabilitation measures (including regulation by other DMAs)**	It is noted that impacts to Aboriginal cultural heritage values may occur through impacts to inland waters and ethnobotanical values such as impacts to flora and vegetation and terrestrial fauna. The EPA considers its assessment of these factors is satisfactory to address impacts that may also be considered under social surroundings. **Assessment finding and environmental outcomes** <u>Aboriginal cultural heritage</u> The EPA acknowledges that the proponent has taken reasonable steps to consult with BNTAC about the impacts associated with the implementation of the proposal and the EPA has used this information to inform its assessment. The EPA considers that direct impacts to Aboriginal heritage sites can be adequately addressed through the regulatory processes under the *Aboriginal*

• avoidance of disturbance of three additional heritage sites through project design and use of existing infrastructure
• implementation of the Social Cultural Heritage Environmental Management Plan (SCHEMP) which outlines:
  ○ the framework for ongoing consultation with the Banjima Traditional Owners throughout the life of the proposal
  ○ processes for ongoing protection of cultural heritage and values
  ○ provisions for ongoing land access
• mitigating tree decline at Flat Rocks
• development of reinjection off tenure to increase groundwater levels to support vegetation health at Flat Rocks
• groundwater supplementation trials at Yandicoogina Gorge
• implementation of the Marillana Creek Water Resource Management Plan and Marillana Creek Diversion Management Plan
• implementation of the Biodiversity Environmental Management Plan
• implementation of the Mine Closure Plan
• progressive rehabilitation of land no longer required for operations
• use of ethnobotanical species in seed mixes used in rehabilitation efforts
Consultation
Members from EPA Services consulted directly with BNTAC about the potential impacts from the proposal.
The key matters raised during this consultation include;
• surplus water discharge to creek lines
	Heritage Act 1986 (AH Act) and has recommended standard condition B5-1(1) to reflect this.
	
	The potential indirect impacts to values of Aboriginal cultural heritage can be minimised through reasonable conditions as recommended under other environmental factors, for example conditions B1, B2 and B3.
	
	<u>Amenity</u>
	The EPA considers that the potential impacts associated with noise and dust emissions are unlikely to represent significant residual impacts on amenity values given the scale of proposed operations to operations already approved, and existing dust controls in place.
	
	The EPA has assessed the potential impacts on visual amenity and landscape values. The proponent has committed to expanding the capacity of existing plant nurseries to use ethnobotanical species in seed mixes during rehabilitation. The proponent has committed to filling the proposed E8 pit to above the water table to prevent pit lakes from forming. The proponent has committed to consulting with the Traditional Owners about the rehabilitation and closure of the proposal, which is reflected in recommended condition B5-4. Subject to this condition, the rehabilitation measures in recommended condition B6, and the above rehabilitation outcomes specified by the proponent, the impacts to visual amenity are not likely to be significant.
	
	Cumulative impacts
	The proponent has undertaken an assessment of the cumulative impacts across the Banjima Native Title determination area. Based on current and potential future proposals currently being assessed, cumulative clearing of native vegetation will total 41,672 ha of within the Banjima Native Title determination area out of a total 826,300 ha. This clearing represents approximately 5% of the total area in the Native Title determination area. The combined proposal would represent 0.6% of total clearing, and the proposal would represent 0.2% of total clearing.

	Drawdown in the Ministers North Aquifer in the vicinity of Yandicoogina Gorge is currently at 3.5 m and is expected to increase to 6.1 m likely due to cumulative drawdown from other operators in the region, and climate variability. The proposal and combined proposal are not expected to contribute to drawdown in the Ministers North Aquifer. The proponent is investigating short-term mitigation trials at Yandicoogina Gorge to stabilise groundwater levels within the gorge. This has been endorsed by the Banjima Heritage Advisory Council. The results of this short-term trial will then inform mid to long term mitigation measures. Subject to ongoing consultation with the Traditional Owners, the overall cumulative impact to Aboriginal cultural heritage values are not expected to be inconsistent with the EPA's objective for social surroundings. **Recommended conditions to ensure consistency of environmental outcome with EPA objective** Condition A1 • limits and extents on proposal Condition B1 • implementation of CPWRMP Condition B5 • no disturbance to Aboriginal cultural heritage sites unless consent is granted under the AH Act • no loss of access to country • minimise adverse impacts to Aboriginal cultural heritage • consult with the Traditional Owners about the achievement of conditions and design of permanent landforms. Condition B6 • rehabilitation of landforms Condition B7 • implement the MCP

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 inland water, flora and vegetation, and terrestrial fauna, 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. Surface water pools and the river systems provide a source of water for flora and vegetation and terrestrial fauna species and supports habitat for conservation significant and short-range endemic species. 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, terrestrial fauna, and subterranean 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 the EPA recognises the strong cultural links between the 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.

Conclusion

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 aim to 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.

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
- Critical habitat for the Pilbara Olive Python, Ghost bat, and Grey Falcon
- Supporting habitat for the Northern Quoll, Pilbara Leaf-nosed Bat, Pilbara Olive Python, 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 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 other offset projects currently being implemented or develop under the program.

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

- $1,016 AUD (excluding GST) per hectare of 'Good' to 'Excellent' condition native vegetation cleared as a result of the proposal within the Roebourne IBRA subregion
- $2,031 AUD (excluding GST) per hectare of critical habitat for the Ghost Bat (*Macroderma gigas*), Grey Falcon (*Falco hypoleucos*) and Pilbara Olive Python (*Liasis olivaceus barroni*) cleared as a result of the proposal within the Hamersley IBRA subregion
- $1,016 AUD (excluding GST) per hectare of supporting habitat for the Northern Quoll (*Dasyurus hallucatus*), Pilbara Leaf-nosed bat (*Rhinonicteris aurantia),* Pilbara Olive Python (*Liasis olivaceus barroni*) and, Grey Falcon (*Falco hypoleucos*)

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
- 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, and
- principles of the EP Act.

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

Appendix A: Recommended conditions

Recommended Environmental Conditions

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

MARILLANA CREEK LIFE OF MINE PROPOSAL

Proposal: The proposal includes the extension of existing above water table and below water table pits, groundwater abstraction for dewatering and operational supply, surplus water management via creek discharge, mineral waste and associated infrastructure and supporting facilities.

Proponent: BHP Iron Ore Pty Ltd

Australian Company Number 008 700 981

Proponent address: 125 St George's Terrace
PERTH WA 6000

Assessment number: 2501

Report of the Environmental Protection Authority: 1810

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

- Marillana Creek Life of Mine Proposal, Mining Leases 270SA 47/292, 90 km North-West of Newman, Shire of East Pilbara under Ministerial Statement (MS) 679 (Report 1166, EPA Assessment number 1555)
- Marillana Creek Life of Mine Proposal, Mining Leases 270SA 47/292, 90 km North-West of Newman, Shire of East Pilbara under MS 1039 (Report 1577, EPA Assessment number 2080)

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 (April 2026), may be implemented;
2. Ministerial Statements 1039 and 679 for the above existing proposals are superseded under section 40AA (6) (b) of the *Environmental Protection Act 1986*; and

3. the implementation of the significant amended proposal (being the existing approved proposal as amended by the significant amendment proposal as shown in Figure 1) 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 1	No more than 13,158 **ha**.
Disturbance footprint	Within the **Development Envelope** shown in Figure 1	No more than 4,653 **ha** within a 13,258 **ha Development Envelope**.
Direct **disturbance** of native vegetation	Within the **Development Envelope** shown in Figure 1	Clearing of no more than 4, 653 **ha** of vegetation.
Timing elements		
Mine life	Within the **Development Envelope** shown in Figure 1	Approximately five (5) years from the date of approval.
Decommissioning	Within the **Development Envelope** shown in Figure 1	Decommissioning phase up to approximately ten (10) years following the cessation of mining.

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

B1 Inland waters and subterranean fauna

B1-1 The proponent must ensure the implementation of the proposal achieves the following environmental **objectives**:

(1) avoid additional **adverse impacts** to Flat Rocks and Marillana Creek surface water pools, including riparian vegetation and aquatic environments in Marillana Creek attributable to the proposal;

(2) avoid additional **adverse impacts** to riparian vegetation and fauna habitat from the discharge of excess water into Marillana Creek attributable to the proposal;

(3) avoid additional **adverse impacts** to surface water flow rates, water levels or water quality in the Marillana Creek attributable to the proposal;

(4) avoid additional **adverse impacts** to riparian vegetation communities as a result of changes to groundwater regimes or groundwater quality attributable to the proposal;

(5) avoid additional **adverse impacts** to aquatic fauna habitat as a result of changes to groundwater regimes or groundwater quality attributable to the proposal;

(6) avoid additional **adverse impacts** to stygofauna as a result of changes to groundwater regimes or groundwater quality attributable to the proposal;

(7) ensure that diverted sections of Marillana Creek function as a fluvial system that maintains the key hydrological, geomorphological and ecological processes of Marillana Creek.

B1-2 The proponent must:

(1) implement the most recent version of the approved Marillana Creek Water Resource Management Plan (MCWRMP), with the purpose of ensuring the inland waters, riparian vegetation and fauna habitat environmental **objectives** in condition B1-1 are achieved, monitored, substantiated and satisfy the requirements of conditions C2 and condition C3; and

(2) implement the most recent version of the approved Marillana Creek Diversion Management Plan (MCDMP) with the purpose of ensuring the environmental **objectives** in condition B1-1 are achieved, monitored, substantiated.

B2 Flora and vegetation

B2-1 The proponent must ensure the implementation of the proposal achieves the following environmental **outcomes**:

(1) **disturb** no more than the following within the Development Envelope:

(a) 85 ha of **'Good' to 'Excellent' vegetation** from the **significant amendment**

(b) 393 ha for the **Marillana Creek Diversion**

(c) 18 ha for **Marillana Creek Crossings**

(d) 48 ha of **riparian vegetation** from the **significant amendment**

(e) 6.4% of known populations of *Rostellularia adscendens* var. *latifolia* (a Priority 3 flora species).

B2-2 The proponent must implement appropriate management measures to achieve the following environmental **objectives** for the proposal:

(1) Minimising **disturbance** to flora and vegetation including but not limited to impacts from, altered hydrological regimes, fire, dust, fragmentation and weeds and;

(2) Minimise **disturbance** on remaining extents of significant vegetation and priority flora.

B3 Terrestrial fauna

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

(1) **Disturb** no more than:

(a) 7.1 ha of **Wetland habitat**

(b) 17.6 ha of **Major Drainage Line habitat**

(c) 0.3 ha of **Medium Drainage Line habitat**

(d) 25.4 ha of **Drainage Area/ Floodplain habitat**

(e) 0.02 ha of **Undulating Low Hills habitat**

(f) 0.1 ha of **Stony Plain habitat**

(g) 21.2 ha of **Hillcrest/Hillslope habitat**

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

(1) avoid adverse impacts to **critical habitat**, including from dust emissions, spread or introduction of **environmental weeds**, increase in feral animals, fire, altered hydrological regimes, habitat fragmentation and **contamination**.

(2) Where avoidance is not possible, impact shall be minimised, as demonstrated through implementation of control measures and comparison against baseline environmental monitoring data.

B3-3 Prior to **ground disturbing activities** within **Wetland habitat** type and **Major Drainage Line** habitat type the proponent must undertake the following actions:

(1) within seven (7) days prior to clearing activities, using a licensed fauna spotter, undertake pre-clearance surveys of sandplain habitat to detect presence of Pilbara Olive Python (*Liasis olivaceus barroni*) within clearing areas, and

(2) where the Pilbara Olive Python (*Liasis olivaceus barroni*) is detected, **ground disturbing activities** shall not commence in that location until either:

(a) the individual has been relocated by a licensed **fauna handler** to **Wetland habitat** or **Major Drainage Line** habitat; or

(b) the individual has been observed by the **fauna spotter** to have moved on from the area to adjoining **Wetland habitat** or **Major Drainage Line** habitat, or

(c) the **fauna spotter** considers that the individual no longer occurs in the area to be cleared.

B3-4 During **construction activities** and **operations**, vehicle and machinery speed limits within the **Development Envelope**, excluding **active mining areas** and **emergency response vehicles**, shall comply with site-specific speed limits considering the likelihood of occurrence of native fauna.

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 Traditional Owners** about the achievement of the **outcomes** in condition B1-1(1), condition B1-1(4), condition B5-1, and condition B6-1(2) and the **objectives** in condition B1-2 and condition B6-2 for the life of the proposal.

B5-4 The proponent must take reasonable steps to consult with the **relevant Native Title party/parties** about:

(1) the design of waste rock landforms and the integrated waste landform as part of approval processes under Part V of the *Environmental Protection Act 1986* and the *Mining Act 1978*.

B6 Rehabilitation

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

(1) **Flat Rocks Spring** is to be **rehabilitated** with vegetation species of local provenance and commensurate to the final post closure groundwater levels;

(2) disturbed areas of Marillana Creek within the Development Envelope are to be rehabilitated with vegetation species of local provenance and commensurate to the final post closure groundwater levels;

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

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

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

(6) **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;

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

B6-2 The proponent must ensure that the **rehabilitation** of ecosystems to achieve the **outcomes** in condition B7-1 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 eighteen (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 B7-1:

(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 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.

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.

(1) The Mine Closure Plan must address the **outcomes** in condition B6-1.

B8 Pilbara Environmental Offsets Fund

B8-1 The proponent must contribute funds to the **Pilbara Environmental Offsets Fund** calculated pursuant to condition B7-2, 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*) 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 (*Rhinonicteris 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 B9-3.

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**; and

(c) 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 B9-1 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 B9-5.

B8-7 The Impact Reconciliation Report required pursuant to condition B8-6 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.

B8-11 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 Upon being required to implement an environmental management plan under Part B, the proponent must:

(1) implement the most recent version of the **confirmed** environmental management plan; and

(2) continue to implement the **confirmed** environmental management plan other than for any period which the **CEO** confirms by notice in writing that it has been demonstrated that the relevant requirements for the environmental management plan have been met, or are able to be met under another statutory decision-making process, in which case the implementation of the environmental management plan is no longer required for that period.

C1-2 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.

C1-3 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.

C1-4 If the proponent is to implement minor revisions to an environmental management plan under condition C1-3, 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.

C1-5 The proponent must cease to implement any revisions which the **CEO** notifies the proponent (at any time) in writing may not be implemented.

C1-6 **Confirmed** environmental management plans, and any revised environmental management plans under condition C1-4(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 Related to Management Actions and Targets for Objective Based Conditions

C3-1 The environmental management plans required under condition B1-2(1) must contain provisions which enable the achievement of the relevant **objectives** of those conditions and substantiation of whether the **objectives** are reasonably likely to be met, and must include:

(1) **management actions**;

(2) **management targets**;

(3) **contingency measures** if **management targets** are not met; and

(4) reporting requirements.

C3-2 Without limiting condition C1-1, the failure to achieve an environmental **objective**, or implement a **management action**, regardless of whether **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 D6-1.

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 D6-1 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 cultural heritage site(s)	Means an Aboriginal site as defined in section 5 of 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(s)	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, 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, increase in feral fauna, 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	Marillana Creek Life of Mine Proposal, Mining Leases 270SA 47/292, 90 km North-West of Newman, Shire of East Pilbara as approved under Ministerial Statement 679 and amended by Ministerial Statement 1039.
Baseline	Initial conditions measured before **disturbance** associated with the proposal, as captured in the environmental management plan

	required by condition B4-1, which is used for comparison with data collected during and after **disturbance** to identify and measure changes in conditions.
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*.
CO_2-e	Carbon dioxide equivalent.
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.
Conservation significant fauna	Threatened fauna listed under the *Biodiversity Conservation Act 2016* and Priority fauna listed by **DBCA**.
Construction activities	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.
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**.
Contingency measures	Planned actions for implementation if it is identified that an environmental **outcome**, environmental **objective**, **threshold criteria**, 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 Marillana Creek Life of Mine Proposal Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
DBCA	The Department of Biodiversity, Conservation and Attractions.
DMPE	The Department of Mines, Petroleum and Exploration.
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 spatial area as depicted in Figure 1 and defined by geographic coordinates in Schedule 1.
Dispersal and foraging habitat	Comprises of **sandplain drainage**, **sandplain spinifex** and **stony hills** habitat within 1 **km** of **major river** habitat, considered **critical habitat** for the northern quoll (*Dasyurus hallucatus*).
Disturb / 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 inland waters, includes to have the effect of altering hydrological regimes or water quality to the detriment of the **environmental values** supported by or dependent on surface water and/or groundwater. In relation to flora, vegetation or fauna habitat, includes to result in the death, destruction, removal, severing or doing substantial damage. In relation to fauna, includes to have the effect of altering the natural behaviour of fauna to its detriment. In relation to subterranean fauna means the loss of habitat through groundwater drawdown and the direct removal of habitat as a result of mining activity. 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 habitat	The area defined as the habitat type “Drainage Area/Floodplain” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
Emergency response vehicles	Vehicles responding to an emergency, as defined by section 5 of the *Emergency Management Act 2005*.

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.
Environmental weeds	Any plant declared under section 22(2) of the *Biosecurity and Agriculture Management Act 2007,* any plant listed on the Weeds of National Significance List and any weeds listed on **DBCA's** Pilbara Impact and Invasiveness Ratings list, as amended or replaced from time to time.
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.
Greenhouse gas emissions	Greenhouse gas emissions expressed in tonnes of **CO_2-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.
Greenhouse gas	Has the meaning given by Section 7A 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.
GL/a	Gigalitre(s) per annum.
'Good' to 'Excellent' condition native vegetation	Means the condition of native vegetation rated in accordance with the *Technical guidance – Flora and vegetation surveys for environmental impact assessment, Environmental Protection Authority, December 2016* including any revision to this technical guidance.
Ground disturbing activities	Any activity or activities undertaken in the implementation of the proposal, including any **clearing**, civil works or construction.
Groundwater abstraction	The process of taking water from a ground source.
ha(s)	Hectare(s).

Hillcrest/Hillslope habitat	The area defined as the habitat type “Hillcrest/Hillslope” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
IBRA	Interim Biogeographic Regionalisation for Australia.
km	Kilometre(s).
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).
Low impact activities	Means activities involving minimal **disturbance** of ground or vegetation. Activities may include monitoring of fauna, vegetation or water, or management activities associated with feral fauna control or weed control.
m	Metre(s).
Major drainage line	The area defined as the habitat type “Major Drainage Line” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
Management action(s)	The identified actions implemented with the intent of achieving the environmental **objective**.
Management target(s)	A type of indicator to evaluate whether an environmental **objective** is being achieved.
Marillana Creek Crossing	A permanent or temporary engineering crossing constructed to provide access across Marillana Creek for the purposes of implementing the Proposal.
Marillana Creek Diversion	Diversion of sections of Marillana Creek in order to maximise resource use in W5 mine area and the E1 to E6 mine area.
Medium drainage line	The area defined as the habitat type “Medium Drainage Line” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
Mt	Million tonne(s).
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	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*.
Pre-clearance survey(s)	Surveys designed to identify the presence or evidence of threatened fauna listed under the *Biodiversity Conservation Act 2016* prior to **ground disturbing activities**.
Progressive manner	In relation to rehabilitation, the stage treatment of **disturbed** areas during exploration, **construction**, development, and **operations** as soon as these areas become available.
Rehabilitation/ Rehabilitate/ Rehabilitated/ Rehabilitating	A process which aims to maximise the return of biodiversity to disturbed land by reinstating self-sustaining and functional ecosystems based on local species.
Relevant Traditional Owner(s)	In relation to the land subject to the proposal, means one or more of the following: - a registered native title body corporate for the land; or - a registered native title claimant for the land; or - a group of persons with Aboriginal traditional and cultural associations with the land; or - a body prescribed in the Aboriginal Heritage Regulations 1974.
Riparian vegetation	Vegetation types 2, 3, 4, 15, and 16 that were considered to be dependent on surface water flows and/or groundwater, as described in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 8-5)
Safeguard Legislation	The Commonwealth *National Greenhouse and Energy Reporting Act 2007* and associated *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015*.
Scope 1	Scope 1 emissions of **greenhouse gas**, in relation to a facility, means the release of **greenhouse gas** into the atmosphere as a direct result of one or more activities, which are part of the proposal, that generate **greenhouse gas emissions**.

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 Proposal Content Document dated 6 May 2025.
Stony plain habitat	The area defined as the habitat type “Stony Plain” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
Supporting habitat	As defined in the Marillana Creek Life of Mine Proposal Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
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.
Undulating low hills habitat	The area defined as the habitat type “Undulating Low Hills” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).
Water quality standards and criteria	Water quality standards and criteria as required under a works approval or license issued under Part V of the *Environmental Protection Act 1986*.
Wetland habitat	The area defined as the habitat type “Wetland” in the report and supporting spatial data in the Marillana Creek (Yandi) Significant Amendment Referral Supporting Document (BHP 2026) (Table 9-3).

Figures (attached)

Figure 1 Marillana Creek Life of Mine Proposal location and Development Envelope (This figure is a representation of the co-ordinates referenced in Schedule 1)

Figure 2 Marillana Creek Life of Mine Proposal Development Envelope, and indicative disturbance footprint (This figure is a representation of the co-ordinates referenced in Schedule 1)

Figure 1 Marillana Creek Life of Mine Proposal location and Development Envelope

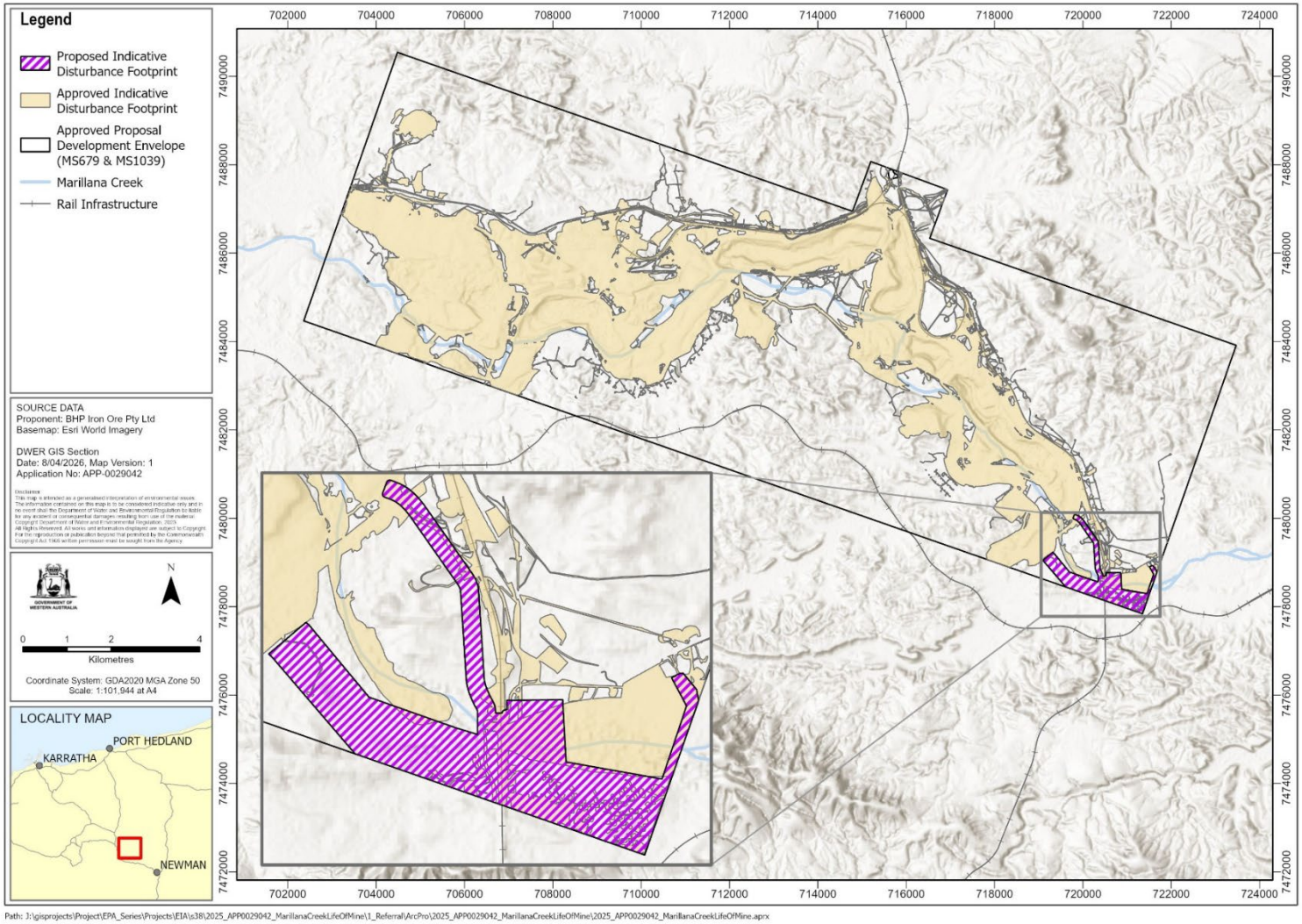

Figure 2 Marillana Creek Life of Mine Proposal Development Envelope, and indicative disturbance footprint

Schedule 1

All co-ordinates are in metres, listed in Map Grid Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 2020 (GDA2020).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation. Record no. APP-0029042.

Appendix B: Decision-making authorities

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

Decision-Making Authority	Legislation (and approval)
1. Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972* – section 18 consent to impact a registered Aboriginal heritage site
2. Minister for Environment	*Biodiversity Conservation Act 2016* – section 40 authority to take or disturb threatened species
3. Minister for Mines and Petroleum	*Mining Act 1978* – granting of a new mining lease
4. 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
5. Chief Executive Officer, Department of Biodiversity, Conservation and Attractions	*Biodiversity Conservation Act 2016* – authority to take flora and fauna (other than threatened species)
6. Chief Health Officer, Department of Health	*Health Act 1911* Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulation 1974
7. Chief Dangerous Goods Officer Department of Local Government, Industry Regulation and Safety	*Dangerous Goods Safety Act 2004* – storage and handling of dangerous goods
8. Executive Director Resource and Environmental Compliance, Department of Mines, Petroleum and Exploration	*Mining Act 1978* – mining proposal
9. Department of Mines, Petroleum and Exploration	*Mining Act 1978* – miscellaneous license
10. State Mining Engineer, Department of Local Government, Industry Regulation and Safety	*Mines Safety and Inspection Act 1994* – mine safety – approval to commence mining operations
11. Chief Executive Officer, Department of Water and Environmental Regulation	*Environmental Protection Act 1986* – part V works approval and licence – part V clearing permit

Decision-Making Authority	Legislation (and approval)
	– part IV compliance (Ministerial statements)

Appendix C: Regulation under other statutory processes

Table C1: Regulation under other statutory processes

Statutory decision-making process	Environmental outcome
Aboriginal Heritage Act 1972	No disturbance to Aboriginal cultural heritage, unless consent is granted to disturb that site under the *Aboriginal Heritage Act 1972* and has involved reasonable steps to consult with relevant Traditional Owners.
Biodiversity Conservation Act 2016	The taking of threatened flora, fauna and ecological communities does not result in any species or community being listed under a higher conservation status.
Environmental Protection Act 1986 Part V works approval and license Environmental Protection (Noise) Regulations 1997	Regulate emissions and discharges from construction and operations to achieve the following outcomes: • no adverse impacts to soil, surface water and groundwater quality • maintain air quality and minimise emissions so that environmental values are protected • protect sensitive receptors from dust and noise.
Mining Act 1978	Mining activities and associated closure and rehabilitation to be managed via a Mining Proposal and Mine Closure Plan under the Mining Act and achieve the following outcomes: • rehabilitated landforms are stable and do not cause pollution or environmental harm • rehabilitated vegetation is self-sustaining • rehabilitated areas are consistent with the species diversity and abundance of native vegetation within comparative analogue or reference sites • rehabilitation includes the use of native seeds collected from native vegetation within the proposal • rehabilitated drainage lines are stable, not prone to erosion, and support ecological processes • closure planning and rehabilitation are undertaken in a progressive manner consistent with achievement of the above outcomes during operations, where practicable.

Rights in Water and Irrigation Act 1914	No adverse impacts to groundwater or surface water.
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	The EPA has recommended conditions in relation to impacts on listed threatened species and communities protected by the EPBC Act. The Department of Climate Change, Energy, the Environment and Water may impose additional conditions under the EPBC Act.
National Greenhouse and Energy Reporting Act 2007 (Commonwealth)	The reduction of scope 1 GHG emissions to meet Australian emission targets of 43% below 2005 levels by 2030 and net zero by 2050. The potential environmental effects of the proposal associated with the emissions of scope 1 GHG emissions are likely to be mitigated to achieve consistency with the environmental factor objective for GHG emissions through the obligations required under the *National Greenhouse and Energy Reporting Act 2007* and the Commonwealth Safeguard Mechanism.

Appendix D: Environmental Protection Act principles

Table D1: 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.*	<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 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. The EPA notes that as a result of proposal implementation residual scope 1 and 2 emissions will be emitted prior to the proponent reaching net zero. The EPA considers the Commonwealth's Safeguard Mechanism represents an as far as practicable reduction of the proposal's GHG emissions. The EPA has recommended condition B4 that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism.
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: • preparing a GHG management plan, including a decarbonisation plan to reduce emissions over the life of the proposal • consulting with the Traditional Owners of the potential impacts to the social and cultural values and to ensure values and traditional knowledge of the land is not compromised • commitments to rehabilitate in a progressive manner and at the cessation of mining to a state suitable for future land use, as identified by the pastoral, traditional, or other land users.

EP Act principle	Consideration
	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, and terrestrial fauna habitat • ensure ongoing access to land used for traditional use or custom by the Traditional Owners • consult with the Traditional Owners on the design of the waste rock landforms (WRLs) and IWL • 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's obligations under the Commonwealth's Safeguard Mechanism 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 condition B7 which requires the proponent to report to the CEO of DWER if obligations change under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and Safeguard Mechanism.
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, terrestrial fauna and subterranean 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 priority flora species and ensuring vegetation and fauna habitat are appropriately considered in rehabilitation planning. The EPA has also set limits on the maximum disturbance

EP Act principle	Consideration
	of stygofauna habitat types to ensure species are able to persist beyond the boundaries of the Development Envelope. 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 • *Environmental factors should be included in the valuation of assets and services.* • *The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.* • *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.* • *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 benefits and/or minimise costs to develop their own solutions and responses to environmental problems.*	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 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 and confirm environmental values within the Development Envelope • incorporating costs of environmental management in project planning • minimising clearing to the extent required • progressively rehabilitating to restore natural ecosystems throughout the life of the proposal. <u>Greenhouse gas emissions</u> 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.

EP Act principle	Consideration
	The proponent has considered the principle of waste minimisation in designing the proposal, such as: • Utilising existing infrastructure • minimise ex-pit waste through the backfill of waste into mined-out pit voids

Appendix E: Other environmental factors

Table D1: Evaluation of 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	Modification of natural landforms from the construction and operation of mines and associated infrastructure Erosion of natural landforms as a result of altered surface water regimes		Landforms was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • No significant landforms are located within the Development Envelope • No major modification to creeks • Management and rehabilitation measures outlined in the MCP the EPA considers that it is unlikely that the proposal would have a significant impact on landforms. 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 mine pit excavation and mining and activities AMD		Terrestrial environmental quality was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • Recent sampling results suggesting the likelihood of generating AMD is low • Management and rehabilitation measures outlined in the MCP the EPA considers that it is unlikely that the proposal would have a significant impact on terrestrial environmental quality. Accordingly, the EPA did not consider terrestrial environmental quality to be a key environmental factor at the conclusion of its assessment.
Air			
Air quality	Particulate emissions (dust) reducing ambient air quality at sensitive receptors		Air quality was identified as preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • emissions from prescribed premises can be adequately assessed, managed, and regulated under Part V of the EP Act

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
			the EPA considers that it is unlikely that the proposal would have a significant impact on air quality. Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment.

Appendix F: List of submitters

Government agencies

- Department of Biodiversity, Conservation and Attractions
- Department of Mines, Petroleum and Exploration
- Department of Planning, Lands and Heritage
- Department of Water and Environmental Regulation

Appendix G: Assessment timeline

Date	Progress stages	Time (weeks)
3 June 2025	EPA decided to assess – level of assessment set	
18 August 2025	EPA requested additional information	7
6 February 2026	EPA received additional information	25
17 April 2026	EPA accepted additional information	10
23 April 2026	EPA completed its assessment	6 days
28 May 2026	EPA provided report to the Minister for Environment	6
2 June 2026	EPA report published	3 days
23 June 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.

Appendix H: 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.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2023, Australian national greenhouse accounts factors workbook 2023, Department of Climate Change, Energy, the Environment and Water.

DCCEEW 2024, State and territory greenhouse gas inventories: annual emissions. Department of Climate Change, Energy, the Environment and Water, Canberra, ACT.

EPA 2016, *Environmental factor guideline – Flora and vegetation*, Environmental Protection Authority, Perth, WA.

EPA 2023, *Environmental factor guideline – Social surroundings*, Environmental Protection Authority, Perth, WA.

EPA 2016, *Environmental factor guideline – Subterranean fauna*, Environmental Protection Authority, Perth, WA.

EPA 2016, *Environmental factor guideline – Terrestrial fauna*, Environmental Protection Authority, Perth, WA.

EPA 2018, *Environmental factor guideline – Inland waters*, Environmental Protection Authority, Perth, WA.

EPA 2024, *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 – Protecting the quality of Western Australia's marine environment*, Environmental Protection Authority, Perth, WA.

EPA 2016X, *Technical guidance – Protection of benthic communities and habitats*, 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 –Environmental impact assessment of marine dredging proposals*, Environmental Protection Authority, Perth, WA.

EPA 2021X, *Technical guidance –Subterranean fauna surveys for environmental impact assessment*, Environmental Protection Authority, Perth, WA.

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