BHP Iron Ore

EPBC Act Strategic Environmental Assessment

– Annual Environmental Report –

July 2023 – June 2024

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Abbreviations

Term	Meaning
AER	Annual Environmental Report
ANFO	Ammonium Nitrate Fuel Oil
APOP	Assurance Plan and Offsets Plan (Version 2.3)
AWT	Above water table
BHP	BHP Iron Ore Pty Ltd
CPWRMP	BHP Central Pilbara Water Resource Management Plan
DAWE	Department of Agriculture, Water and the Environment (now DCCEEW)
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DoEE	Department of Environment and Energy (now DCCEEW))
DWER	Department of Water and Environmental Regulation
ELOR	Environmental Legal Obligations Register
EMP	Environmental Management Plan
EPBC	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ERI	Early Response Indicator
FMP	Fauna Management Plan
FY	Financial Year
FY2024	Financial Year 2024 (1 July 2023 to 30 June 2024)
GIS	Geographical Information Systems
ha	Hectares
IRR	Impact Reconciliation Report
MAC	Mining Area C
MACEMP	Mining Area C Environmental Management Plan
MACFMP	BHP Mining Area C (South Flank) Fauna Management Plan
mAHD	Metres Australian Height Datum
MAR	Managed Aquifer Recharge
mRL	meters Relative Level
MS	Ministerial Statement
ng/g	Nanogram per gram
OB	Orebody
PEAHR	Project Environmental and Aboriginal Heritage Review
PEOF	Pilbara Environmental Offsets Fund
POP	Pilbara Olive Python
SAA	Strategic Assessment Area
SEA	Strategic Environmental Assessment
SNP	Single Nucleotide Polymorphism
SSAN	Security Storage Ammonium Nitrate
TSSC	Threatened Species Scientific Committee
WA	Western Australian
WAIO	Western Australian Iron Ore

Declaration of Accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

Full name (please print):	Tim Day
Position (please print):	Asset President Western Australian Iron Ore (WAIO)
Organisation:	BHP Iron Ore
CAN:	ACN 008 700 981
Date	26/09/2024

Rev	Description of Amendment	Organisation	Name
Rev 0	Final Report	BHP Iron Ore Pty Ltd	David Bunting

1 Introduction

The BHP Iron Ore Pty Ltd (BHP) Pilbara Strategic Assessment Program (the Program) was endorsed by the then Minister for the Environment and Energy on 11 May 2017 and an Approval Decision (the Approval) for taking actions in accordance with the Program was issued on 19 June 2017.

The Approval applies to the development of new iron ore mines and associated infrastructure and the expansion of existing iron ore mines and associated infrastructure within a defined Strategic Assessment Area in the Pilbara region of Western Australia (Figure 1-1). Key commitments of the Program and conditions of the Approval include preparation and approval of an Assurance Plan and Offsets Plan and undertaking a validation process including preparation of a Validation Notice for each Notifiable Action (Figure 1.2) and BHP internal Decision Reports for Non-Notifiable Actions.

The Assurance Plan and Offsets Plan were originally separate documents, endorsed by the then Federal Minister for Environment on 11 May 2018. A review of the plans was undertaken in 2022 as part of the first five-year review, with the outcome being a single combined Assurance and Offsets Plan (APOP) (BHP 2023). The APOP was approved as version 2 by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) on 18 April 2023. Following subsequent minor administrative updates, version 2.3 (9 May 2023) is considered the most recent approved version and is herein referred to throughout this Annual Environmental Report (AER).

In accordance with the conditions of the approval decision relating to the Program, BHP is hereby submitting an AER for the reporting period between 1 July 2023 and 30 June 2024. An outline of the content of the report is provided below:

- Section 1: Introduction - Provides the Approval background and key terminology.
- Section 2: Approval Decision - Outlines compliance with the conditions of the Approval.
- Section 3: Program - Addresses the requirements of an annual report outlined in Part B, Chapter 5 of the endorsed Program.
- Section 4: Assurance Plan and Offsets Plan - Addresses the reporting requirements outlined in version 2.3 of the APOP.
- Section 5: Program Decisions and Disturbance
- Section 6: Validation Notices - Outlines compliance with obligations within the Validation Notices.

Four new Validation Notices became effective during the reporting period (see Section 5 and Sections 6-3 to 6-6 including:

- Mooka Rail Works (effective 4 July 2023)
- Revised Jimblebar Optimisation Project (effective 23 September 2023)
- Yeerabiddy Rail Works (effective 12 October 2023)
- Newman Hub Western Ridge (effective 19 October 2023).

A further two Validation Notices were in preparation during the reporting period, but are not yet effective. These will be detailed in the next AER, once effective. They are:

- Jimblebar Significant Amendment Validation Notice
- East Pilbara Surplus Water Drilling Validation Notice

There were seven non-notifiable action Decision Reports finalised during the reporting period (see Section 5).

There was one potential non-compliance identified during the reporting period (see Section 6.1.1).

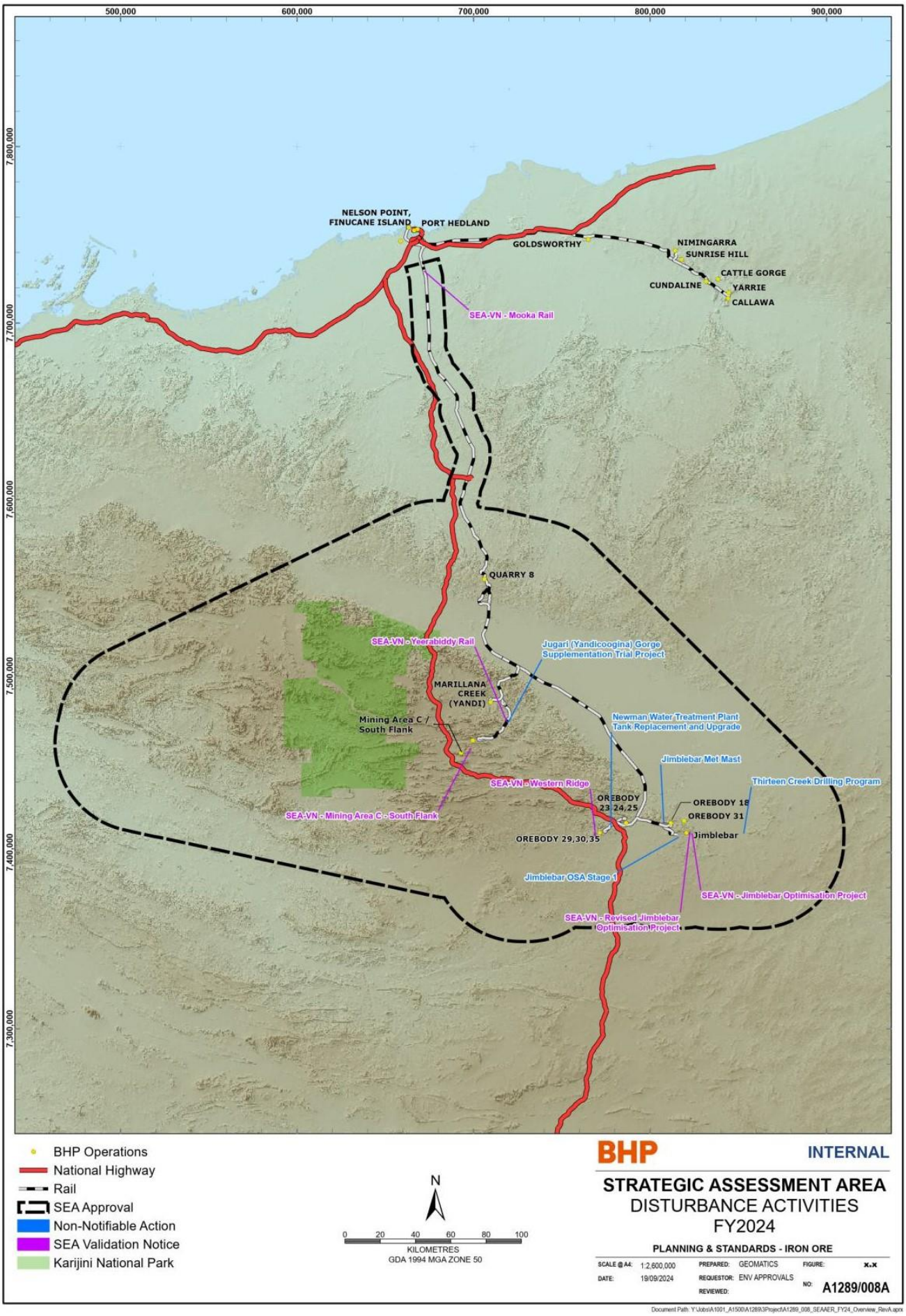

Figure 1-1 BHP Strategic Assessment Area

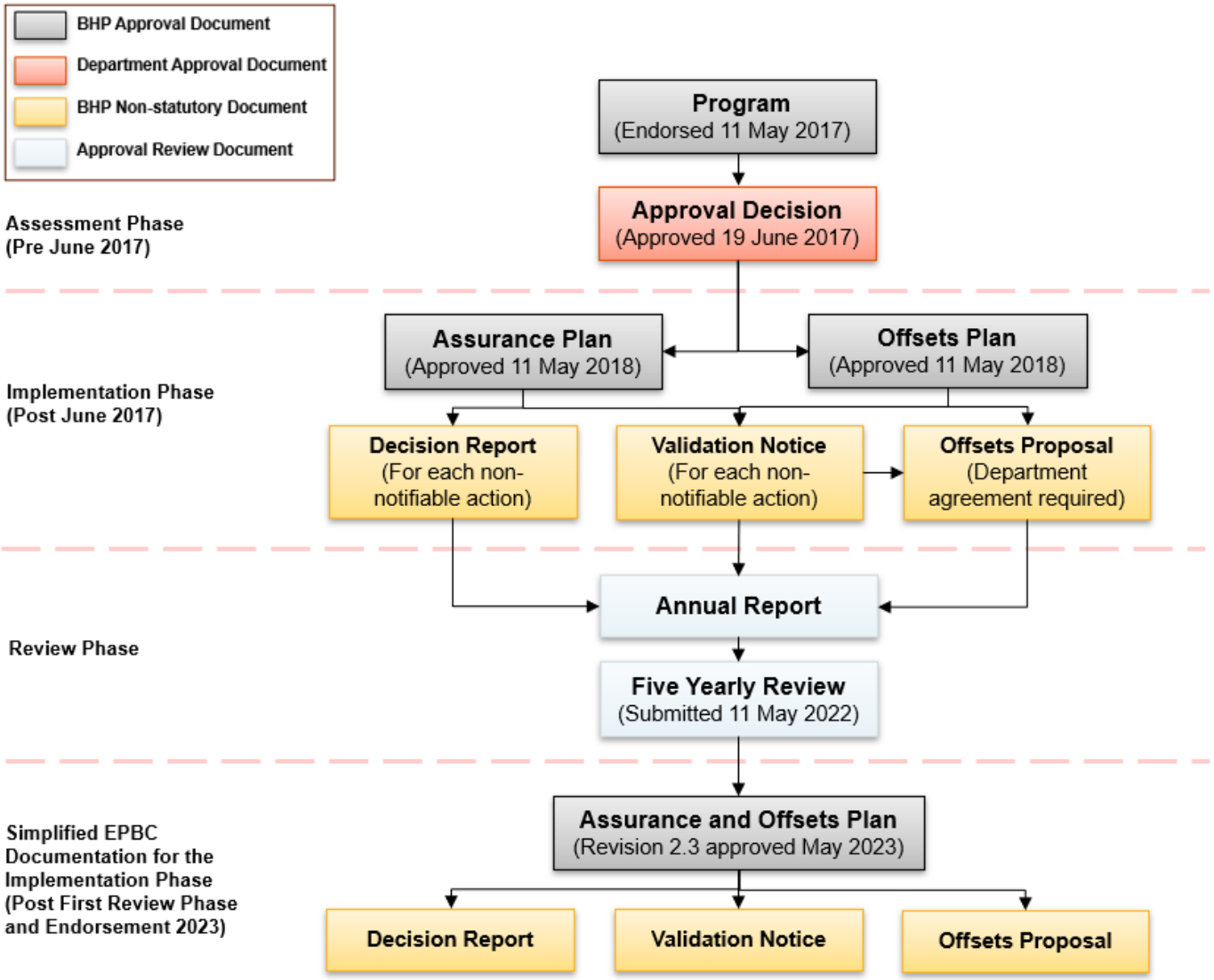

Figure 1-2 BHP Strategic Environmental Assessment – Approval Documents

2 EPBC SEA Approval Decision

Table 2-1 assesses compliance against the 10 conditions of the Approval.

Table 2-1 Audit Table for the EPBC SEA Approval Decision (Approved: 19 June 2017)

Condition/ Section	Requirement	How	Documentation	Evidence	Timeframe	Status
1	The approval holder must implement the endorsed Program.	Implement Assurance Plan, Offset Plan and Validation Notices in accordance with criteria in the Program.	Compliance reported annually in the BHP Iron Ore Strategic Environmental Assessment Annual Environmental Report (BHP SEA AER).	Activities have been implemented in accordance with the endorsed Program (see Conditions 3 and 7).	Life of Approval.	Compliant.
2	The approval holder must not make any validation decisions as outlined in Part C of the endorsed Program after 70 years from the date of the Approval.	No validation decisions to be made after 19 June 2087.	Compliance reported annually in the BHP SEA AER.	The Approval commenced on the 19 June 2017. Validation decisions were permitted during the reporting period.	From 19 June 2087.	Not required during this reporting period.
3	Within 12 months of the date of Approval, the approval holder must prepare and submit for the Minister's written Approval an Assurance Plan and an Offsets Plan in accordance with Section 3 of the endorsed Program.	Prepare and submit an Assurance Plan and Offsets Plan to the satisfaction of the Minister for Environment (or delegate).	Submitted Assurance Plan and Offset Plan.	An Assurance Plan (dated 10 May 2018) and Offsets Plan (dated 10 May 2018) were prepared and submitted to the Department on 1 March 2018. The Assurance Plan and Offsets Plan were approved by the Department on behalf of the Minister on 11 May 2018 (Reference Letter from G. Manning – Assistant Secretary Assessments (WA, SA, NT) and Post Approvals Branch Environment Standards Division dated 11 May 2018).	Prior to 19 June 2018.	Closed.
	The approval holder must implement the approved Assurance Plan and Offsets Plan.	Implement Validation Notices and Decisions Reports in accordance with the requirements of the approved Assurance Plan and Offsets Plan.	Compliance reported annually in the BHP SEA AER.	The Assurance Plan (dated 10 May 2018) and Offsets Plan (dated 10 May 2018) have been implemented (see Condition 7 below and Section 5). BHP notes that a revised and combined APOP was submitted on 16 December 2022 to DCCEEW. The revised plan has been implemented since it was endorsed on 18 April 2023. The revised plan is published on BHP's website.	Annually for the duration of the Approval.	Compliant.
	The approval holder must publish the approved Assurance Plan and Offsets Plan on its website within one (1) month of receiving written notice that the Assurance Plan and Offsets Plan are approved.	Publish the approved Assurance Plan and Offsets Plan on the BHP external website.	Submitted Assurance Plan and Offset Plan.	The Assurance Plan (dated 10 May 2018) and Offsets Plan (dated 10 May 2018) were published on the BHP website on 15 May 2018. Email sent to V. Cox (Senior Assessing Officer – Post Approvals) on 15 May 2018 advising the Plans were available on the website.	Within 1 month of Approval.	Complete.
4	Unless otherwise agreed to in writing by the Minister, every five years from the date of Approval, the approval holder must review and revise the Assurance Plan and the Offsets Plan in accordance with Section 4.1 of the endorsed Program. The approval holder must submit the revised Plans for the Minister's Approval within 6 months of the five year anniversary of the date of Approval unless the Minister has agreed in writing that no revisions are necessary. If the approval holder does not submit the revised Plans for Approval, the approval holder may not give any further validation notices under Part C of the endorsed Program until the revised Plans have been submitted and approved. The Minister may, within 60 days of receipt by the Department of the revised Plans, advise the approval holder in writing that (a) the revised Plans are approved; or (b) additional revisions are required to be made to the Plans. If the Minister does not advise the approval holder within the 60 days, the revised Plans are taken to have been approved by the Minister and the approval holder must implement the revised Assurance Plan and Offsets Plan. If the Minister requires additional revisions to the Plans, the approval holder has to make the required revisions and resubmit the Plans for Approval. If the revised Plans are not submitted, no further validation notice may be given under Part C of the endorsed Program until the revised Plans have been submitted and approved. The Minister has 30 days to advise the approval holder in writing whether the revised Plans are approved. If the Minister does not advise the approval holder within the 30 days, the revised Plans are taken to have been approved and the approval holder must implement the revised Assurance Plan and Offsets Plan.	Prepare and submit a review and revision of the Assurance Plan and Offsets Plan to the satisfaction of the Minister for Environment (or delegate).	Five-yearly review document and revised Assurance Plan and Offsets Plan.	BHP completed a comprehensive review of the implementation framework in 2022, in accordance with Section 4 of the Program. The outcome of the review was the preparation of a revised and combined APOP which was endorsed on 18 April 2023. A subsequent version with minor updates was completed on 9 May 2023. The review document can be located on BHPs website under the regulatory information section (available here: https://www.bhp.com/sustainability/environment/regulatory-information).	The first review was due after 19 December 2021 and prior to December 2022.	Compliant. The five yearly review of the Assurance Plan and Offsets Plan was submitted to DCCEEW on the 16 December 2022, and endorsed in April 2023 and subsequently with minor updates in May 2023.

Condition/ Section	Requirement	How	Documentation	Evidence	Timeframe	Status
	After receiving written notice from the Department that the revised Assurance Plan and Offsets Plan are approved, the approval holder must implement the revised Assurance Plan and Offsets Plan. The approval holder must publish and maintain the revised Assurance Plan and Offsets Plan on its website within one (1) month of receiving written notice from the Department that the plans have been approved.					
5	At any time the approval holder may choose to review and revise the Assurance Plan and/or the Offsets Plan without requiring the Minister's Approval of the revised Plans if the revision does not: (a) include changes to Program Matters Outcomes; (b) affect the achievement or monitoring of Program Matters Outcomes; or (c) include changes to environmental offsets for any Program Matters. If the approval holder makes this choice, the approval holder must notify the Department in writing that the current approved Assurance Plan and/or Offsets Plan has been revised and provide the Department with a copy of the revised Assurance Plan and/or Offsets Plan. The approval holder must implement the revised Assurance Plan and/or Offsets Plan from the date of the written notice to the Department. The approval holder must publish the revised Assurance Plan and Offsets Plan on their website within one (1) month of the written notice to the Department.	Prepare and submit a review and revision of the Assurance Plan and Offsets Plan to the satisfaction of the Minister for Environment (or delegate).	Revised Assurance Plan and Offsets Plan.	Not required during this reporting period.	Anytime during the duration of the Approval.	Not required during this reporting period. Submitted as part of the 5 yearly review. See Condition 4 above.
6	The approval holder must inform any person that they authorise, permit or request to undertake any activity of obligations under the endorsed Program and conditions attached to this Approval that restrict or regulate the undertaking of activities within the strategic assessment area.	Obligations are maintained in the legal obligations register and documented within the Project Environmental and Aboriginal Heritage Review (PEAHR) prior to undertaking activities.	Western Australian Iron Ore (WAIO) Environmental Legal Obligations Register (ELOR) and PEAHR documentation.	All Validation Notice and Decision Report obligations are maintained in BHP's ELOR system and subsequently included in site-specific Project Environmental and Aboriginal Heritage Reviews (PEAHRs), as raised across WAIO operations. During the reporting year, this requirement continued to be met via the upload of the four new effective Validation Notices and seven new Decision Reports to ELOR, including all relevant obligations These obligations have been documented/included into relevant PEAHRs as raised.	Prior to undertaking activities.	Compliant.
7	An upper disturbance limit of 110,000 hectares applies to the approval holder. All activities that result in a direct disturbance will account towards the upper disturbance limit. The approval holder may undertake activities that result in a direct disturbance up to the maximum of 110,000 hectares less any direct disturbance permitted in a section 146B approval given in relation to assets divested by the approval holder and for which a validation notice has been given.	Maintain the program disturbance tracking register.	Program disturbance tracking register.	Section 5 details the current disturbance undertaken during the reporting period against the upper disturbance limit. A total of 26,017 ha of disturbance has been allocated via Validation Notices and Non-Notifiable Actions since July 2018. The current total disturbance has not exceeded the upper disturbance limit. No individual activities exceeded their allocated disturbance limit.	Annually for the duration of the Approval.	Compliant.
8	By the first business day in October of each year after the commencement of this Approval, the approval holder must submit a report to the Department and publish the report on its website. The report must address the requirements of an annual report outlined in Part B of the endorsed Program.	Prepare and submit annual report and publish on BHP external website	BHP SEA AER.	This document forms the annual report under the Approval for the 1 July 2023 to 30 June 2024 period. The FY2023 report was submitted on 29 September 2023 and was available on the BHP website from this date. (https://www.bhp.com/-/media/bhp/regulatory-information-media/iron-ore/western-australia-iron-ore/0000/pilbara-strategic-assessment-commonwealth/bhp-waio-epbc-sea-aer-2022_2023.pdf). Section 3 documents the requirements of an annual report in accordance with Part B, Chapter 5 Reporting, of the Program.	Annually for the duration of the Approval.	Compliant.
9	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions attached to this Approval, including measures taken to implement the endorsed Program, Assurance Plan and Offsets Plan and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions attached to this Approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	1. Maintain the program disturbance tracking register. 2. Document decisions regarding notifiable and Non-Notifiable Actions 3. Maintain the legal obligations register.	1. Program disturbance tracking register. 2. Validation notices and decision reports. 3. WAIO ELOR.	1. Section 5 provides an extract of the Program disturbance tracking register, which details the disturbance undertaken during the reporting period against the upper disturbance limit. 2. There were four Validation Notices and seven Decision Reports completed during the reporting period. 3. BHP is utilising the WAIO ELOR database to administer and report against legal obligations.	Duration of the Approval.	Compliant.
10	Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions attached to this Approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Appoint a Minister-approved independent auditor to undertake an audit of compliance with conditions.	Independent auditors report.	Not required during this reporting period.	When requested by the Minister.	Not required during this reporting period.

3 EPBC SEA Program Part B

Table 3-1 assesses compliance against the seven requirements of the reporting section of the Program.

Table 3-1 Audit Table for the EPBC SEA Program Part B

Chapter	Condition/ Section	Requirement	How	Documentation	Evidence	Timeframe	Status
5 Reporting	Item 1	Compliance with the Assurance Plan and Offsets Plan and Validation Notices.	Assess as part of the BHP annual reporting process.	BHP SEA AER.	There was one potential non-compliance identified with the Assurance Plan and Offsets Plan during the reporting period (see 6.1.1).	Annually for the duration of the Approval.	Potentially non-compliant.
	Item 2	Actions determined not notifiable.	Assess activities against the Program and Assurance Plan.	Decision Report.	There were seven Non Notifiable actions in the reporting period as identified in Section 5.	Duration of the Approval.	Compliant.
	Item 3	Activities determined to be a notifiable action.	Assess activities against the Program and Assurance Plan.	Decision Report and Validation Notice.	There were four actions determined to be Notifiable in the reporting period	Duration of the Approval.	Compliant.
	Item 4	Progress of notifiable actions, including when notifiable actions have commenced and completed.	Review progress of notifiable actions.	Program disturbance tracking register.	See Section 6: Validation Notices	Annually for the duration of the Approval.	Compliant.
	Item 5	Assets divested through the process described in Section 2.1, noting the status of environmental obligations under this Program at the time of divestment.	Review BHP divestment activities.	Asset database.	No assets, subject to the Program, were divested during the reporting period.	Annually for the duration of the Approval.	Not required during this reporting period.
	Item 6	An account of the upper disturbance limit for all activities taken within the Strategic Assessment Area. This will include any direct disturbance that has occurred in the twelve month period and as a cumulative total.	Maintain the program disturbance tracking register.	Program disturbance tracking register.	Details of disturbance undertaken during the reporting period and the cumulative disturbance is provided in Section 5.	Annually for the duration of the Approval.	Compliant.
	Item 7	Results of the five yearly review as described in Sections 4.1.1. and 4.1.2.	Prepare and submit a five yearly review to the satisfaction of the Minister.	Five yearly review document.	BHP undertook a comprehensive review of the implementation framework in 2022, as per the five yearly review document submitted to the Department on the 16 December 2022. The timing and review process was undertaken, resulting in a series of recommendations and preparation of a revised, combined APOP (BHP 2023). The APOP was approved as version 2 by DCCEEW on 18 April 2023. Following subsequent minor administrative updates, version 2.3 (dated 9 May 2023) is considered the most recent approved version.	First review due after 19 December 2021 but prior to 19 December 2022.	Compliant. Submitted on 16 December 2022.

4 EPBC SEA Assurance Plan and Offsets Plan (Version 2.3)

Table 4-1 assesses compliance against the 15 requirements of Section 8.10 (Annual Environment Report), five requirements of Section 8.7 (Data Management) and two requirements of Section 16 (Monitoring, Reporting and Adaptive Management) of the endorsed APOP version 2.3.

Table 4-1 Audit Table for the EPBC SEA Assurance and Offsets Plan (Version 2.3)

Chapter	Condition/ Section	Requirement	How	Documentation	Evidence	Timeframe	Status
8.7 Data Management	Item 1	An annual review of the site monitoring register and the guideline trigger values to ensure the program is efficient, risk based and meets compliance requirements.	Review site monitoring registers and compliance audits.	Site monitoring register and compliance audit reports.	Site monitoring register reviews and compliance audits have been carried out across operations annually/during the reporting period.	Annually for the duration of the Approval.	Compliant.
	Item 2	Environmental monitoring and measurement equipment is to be maintained/calibrated/verified in accordance with manufacturer's specifications.	Review site monitoring registers and compliance audits.	Site monitoring register and compliance audit reports.	Groundwater level monitoring was undertaken during the reporting period. Calibration of water level monitors was undertaken in accordance with the manufacturer's specifications, as per the Western Australian (WA) Department of Water and Environmental Regulation (DWER) Operating Licences.	Annually for the duration of the Approval.	Compliant.
	Item 3	Verify source data integrity to determine if the data from a sampling point has been mapped against the correct data program, data type, test methods and units of measurement are accurate.	Review site monitoring registers and compliance audits.	Site monitoring register and compliance audit reports.	Verification of the groundwater level monitoring data was completed during the reporting period. Verification activities included confirming sampling locations, checking monitoring equipment and ensuring consistency with previous monitoring data.	Annually for the duration of the Approval.	Compliant.
	Item 4	Source monitoring data is analysed against trigger values, trends and outliers, and in consideration of the target environmental outcomes.	Review site monitoring registers and compliance audits.	Site monitoring register and compliance audit reports.	Source monitoring data (groundwater level monitoring data) was compared against trigger values during the reporting period.	Annually for the duration of the Approval.	Compliant.
	Item 5	An investigation is required for any values that are above triggers and thresholds.	Review site monitoring registers and compliance audits.	Site monitoring register and compliance audit reports.	No exceedance of trigger or thresholds during the reporting period.	Annually for the duration of the Approval.	Compliant.
8.10 Annual Environment Report	Item 1	BHP decisions (Notifiable Actions and Non-Notifiable Actions) in relation to its activities within the SAA, and its compliance in relation to the upper disturbance limit of 110,000 ha specified in section 2.4 of the Program. An outline of offsets applicable to the decision, including offsets required under other legislation will be specified in the AER.	Review progress of Notifiable Actions and Non-Notifiable Actions and maintain the program disturbance tracking register.	BHP SEA AER. Program disturbance tracking register.	See Section 5, which presents a brief summary of activity completed, as well as disturbance data, for all Notifiable and Non-Notifiable Actions during the FY2024 reporting period. Section 6 presents a more detailed update on each of the Notifiable Actions (Validation Notices).	Annually for the duration of the Approval.	Compliant
	Item 2	Notifiable Actions identified under the Program during the period covered by the report.	Assess activities against the Program and Assurance Plan.	Validation Notice.	There were four actions determined to be Notifiable in the reporting period.	Annually for the duration of the Approval.	Compliant.
	Item 3	Details of activities within the scope of the Program which were commenced during the period covered by the report but were determined not to be notifiable.	Review progress of Non-Notifiable Actions and maintain the program disturbance tracking register.	BHP SEA AER. Program disturbance tracking register.	Details of activities, which were determined to be Non-Notifiable (Decision Reports), are provided in Section 5.	Annually for the duration of the Approval.	Compliant.
	Item 4	Status of implementation (planned start date, action commenced and planned completion date; and action completed) of all Notifiable Actions.	Review progress of notifiable actions and maintain the program disturbance tracking register.	BHP SEA AER. Program disturbance tracking register.	Status of implementation of all Notifiable Actions (Validation Notices) are provided in Section 5. Section 6 presents a more detailed update on each of the Notifiable Actions (Validation Notices).	Annually for the duration of the Approval.	Compliant.
	Item 5	Assets divested through the process described in section 2.1 of the Program.	Review BHP divestment activities.	Asset database.	No assets, subject to the Program, were divested during the reporting period.	Annually for the duration of the Approval.	Not required during this reporting period.
	Item 6	Status of offsets implemented for each Notifiable Action.	Review progress of offset plans for notifiable actions.	BHP SEA AER.	No on-ground offsets were implemented during the reporting period. BHP submitted the Offsets Proposal for Mining Area C, in accordance with the Offsets Plan, on 14 December 2018. As a result of outcomes of the five yearly review, BHP has agreed to resubmit the Mining Area C – South Flank Offsets Proposal. The Offsets Proposal is partially endorsed. Consultation with DCCEEW is ongoing and continued during this reporting period. During this reporting period, financial offset payments were made to the PEOF for the Mooka Rail Works Validation Notice, Jimblebar Optimisation Project Revised Validation Notice, Western Ridge Validation Notice and Yeerabiddy Rail Works Validation Notice.	Annually for the duration of the Approval.	Compliant
	Item 7	Disturbance areas associated with all actions, whether material or non-material, implemented since the Approval, with both	Maintain the program disturbance tracking register.	Program disturbance tracking register.	Details of disturbance undertaken during the reporting period, as well as total disturbance (since the Approval) is provided in Section 5.	Annually for the duration of the Approval.	Compliant.

Chapter	Condition/ Section	Requirement	How	Documentation	Evidence	Timeframe	Status
		the annual disturbance and the total disturbance (since the Approval) included.					
	Item 8	Monitoring, management and corrective actions implemented during the reporting period to avoid, mitigate and offset impacts to Program Matters.	Maintain the program disturbance tracking register.	Program disturbance tracking register.	This is provided in Sections 5 and 6 of this AER.	Annually for the duration of the Approval.	Compliant
	Item 9	Outcomes of compliance audits undertaken during the period covered by the report.	Review outcomes of compliance audits completed during the reporting period.	Compliance audit reports.	No compliance audits were completed during the reporting period.	Annually for the duration of the Approval.	Not Required.
	Item 10	Attainment of Program Matter Objectives and Outcomes.	Review site monitoring registers and compliance audits undertaken during the reporting period. Prepare and submit a five yearly review to the satisfaction of the Minister.	Compliance audit reports. BHP SEA AER. Five-yearly review document if applicable during reporting period.	Section 6 provides further information on each of the Notifiable Actions (Validation Notices).	Annually for the duration of the Approval.	Compliant
	Item 11	Summary of any exceedances of the Program Matter Outcomes relevant to each Notifiable Action, and corrective actions taken.	Review decision reports, notifiable actions and compliance audits undertaken during the reporting period.	Monitoring reports.	No exceedances of the Program Matter Outcomes were identified during the reporting period. See Section 6.	Annually for the duration of the Approval.	Compliant.
	Item 12	The effectiveness of management and corrective actions to avoid, mitigate and/or offset impacts to Program Matters.	Assess management commitments outlined in Validation Notices in the AER.	BHP SEA AER.	Section 6 provides further information for each of the Notifiable Actions (Validation Notices).	Annually for the duration of the Approval.	Compliant
	Item 13	Deviations from the Program or from information and management commitments contained in a Validation Notice for a Notifiable Action.	Review decision reports, notifiable actions and compliance audits undertaken during the reporting period.	Compliance audit reports.	A potential non-compliance (deviation) relating to monthly ground water level data collection at Weeli Wolli Spring has been identified during this reporting period. Further detail is provided in Section 6.1.5.	Annually for the duration of the Approval.	Potentially non-compliant.
	Item 14	A summary of Pilbara Environmental Offsets Fund (PEOF) Impact Reconciliation Report submitted (refer Section 15.1 of the APOP).	Financial contribution to PEOF through Impact Reconciliation Report.	PEOF fund DWER invoice reference.	BHP provides a summary of contributions to the PEOF for the reporting period.	Annually for the duration of the Approval.	Compliant
	Item 15	Outcomes of the five yearly reviews where these reviews occur within the reporting period (refer Section 8.12 of the APOP).	Prepare and submit a five yearly review to the satisfaction of the Minister.	Five-yearly review document and revised Assurance Plan and Offsets Plan.	It was documented in the previous reporting period (FY2023) that a five-yearly review was undertaken and a revised APOP was endorsed in May 2023. In addition, it was documented that a revision was required to be submitted to DCCEEW in November 2023, for endorsement by the Minister by end of March 2024. This revision timeframe is now extended and will be met in the next reporting period (FY2025).	Every five years.	Compliant
16 Monitoring, Reporting and Adaptive Management	Item 1	BHP will provide a progress summary of the offsets implemented and achievement of outcomes from the funding provided to the PEOF in the AER.	Review of financial contribution to PEOF through IRRs.	PEOF fund, DWER invoice references and BHP PEOF Registers.	BHP made financial contributions to the PEOF for the four Validation Notices which became effective during the reporting period. BHP provides a summary of financial contributions to the PEOF and of offset projects implemented. See supporting evidence.	Annually for the duration of the Approval.	Compliant
	Item 2	BHP will prepare an AER as outlined in Section 8.10 of the APOP (see reference to items 1-15 under Section 8.10 of this table)	Preparation of this SEA AER.	This BHP SEA AER.	The SEA AER will be added to BHP's external website.	Annually for the duration of the Approval.	Compliant

5 Program Decisions and Disturbance

Four notifiable actions became 'effective' and seven Non-Notifiable Actions were documented during the reporting period. Table 5-1lists all the validation notices and decision reports that have been made under the Program to date, the disturbance allocated to each decision and the disturbance completed during the reporting period. Table 5-2 shows the disturbance by habitat type to 30 June 2024 for all Validation Notices and Decision Reports.

Table 5-1 Program Decisions and Disturbance undertaken during the 2023/24 reporting period

Project Name	Activity completed during reporting period	Decision Rationale	Decision Made	Date Decision Effective From	Proposed disturbance (ha)	Overall cumulative program disturbance remaining (ha)	Activity disturbance June 2018 to June 2023	Activity disturbance 2023/24 (ha)	Total activity disturbance to June 2024 (ha)	Overall cumulative activity disturbance remaining (ha)
Mining Area C	Mining continued at Mining Area C and South Flank.	Project fulfils the triggers of the Assurance Plan for Greater Bilby (Macrotis lagotis), Northern Quoll (Dasyurus hallucatus), Pilbara Leaf-Nosed Bat (Rhinonicterus aurantia), Ghost Bat (Macroderma gigas) and Pilbara Olive Python (Liasis olivaceus barroni).	Validation Notice	July 2018	16,000.00	94,000.00	4,472.19	184.03	4,656.22	105,343.78
Jimblebar OSA1 Stage 1	No activity completed during the reporting period. This Non-Notifiable Notice is superseded by the Jimblebar Optimisation Project Validation Notice.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	August 2018	95.00	93,905.00	94.73	0.00	94.73	105,249.05
Western Creek Diversion	No activity completed during the reporting period.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	February 2020	15.00	93,890.00	5.20		5.20	105,243.85
MAC Surplus Water	No activity completed during the reporting period.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	April 2020	0.00	93,890.00	0.00		0.00	105,243.85
Jimblebar Optimisation Project	Clearing of mine infrastructure and exploration drilling areas.	Project fulfils the triggers of the Assurance Plan for the Greater Bilby (Macrotis lagotis), Northern Quoll (Dasyurus hallucatus), Pilbara Leaf-Nosed Bat (Rhinonicterus aurantia), Ghost Bat (Macroderma gigas) and Pilbara Olive Python (Liasis olivaceus barroni).	Validation Notice	June 2020	2,000.00	91,890.00	501.76	15.50	517.26	104,726.59
OB31 Stage 1 Clearing	Stockpiling of overburden in a new overburden storage area at Jimblebar.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	December 2022	5.00	91,885.00	0.11		0.11	104,726.48
Mooka Rail Works	Additional rail sidings and re-alignment of existing rail sidings and associated infrastructure.	Records of Northern Quolls exist within a 500-m buffer of the activity boundary.	Validation Notice	July 2023	23.00	91,862.00	0.00	5.76	5.76	104,720.72
Jimblebar Optimisation Project Revised	Ongoing operation of Jimblebar mine.	Program Matter records occur within the Activity Area.	Validation Notice	September 2023	1,042.00	90,820.00	0.00	110.75	110.75	104,609.97
Newman Hub Western Ridge	Initial ground disturbance underway for preparation of foundations for construction. Communications infrastructure under construction.	The Project meets the Notifiable Action Triggers for Northern Quoll, Ghost Bat and Pilbara Olive Python.	Validation Notice	October 2023	4,266.00	86,554.00	0.00	129.51	129.51	104,480.47
Yeerabiddy Rail Works	Additional rail sidings and associated infrastructure near Mining Area C.	Records of Ghost Bats exist within a 500-m buffer of the activity boundary.	Validation Notice	October 2023	60.02	86,494.00	0.00	19.33	19.33	104,461.13
Thirteen Creek Drilling Program	Clearing commenced and completed. Drilling commenced and completed.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	August 2023	11.00	86,483.00	0.00	8.40	8.40	104,452.73
Rail decarbonisation electrification project	No onsite activity completed during the reporting period however internal project studies were progressed to refine project milestone and timeframes.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	August 2023	0.02	86,483.00	0.00		0.00	104,452.73
Orebody 32 Below Water Table	No activity completed during the reporting period.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	September 2023	224.00	86,259.00	0.00		0.00	104,452.73
Newman West (Mount Whaleback Mine)	No activity completed during the reporting period.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	November 2023	155.00	86,104.00	0.00		0.00	104,452.73
Newman Water Treatment Plant Tank Replacement and Upgrades[1]	Internal Project disturbance approval (PEAHR) submitted as well as State Agreement changes.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	November 2023	7.00	86,097.00	0.00	0.90	0.90	104,451.83
Jimblebar Met Mast Decision Report[1]	Minor ground disturbance for LiDAR installation works and meteorological mast installation.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	November 2023	2.00	86,095.00	0.00	0.26	0.26	104,451.57
Jugari (Yandicoogina) Gorge Supplementation Trial Project[1]	Pipeline constructed, supplementation trial yet to commence.	Project does not meet the Notifiable Action Triggers.	Non-Notifiable Action	May 2024	1.00	86,094.00	0.00	0.23	0.23	104,451.34

[1] In preparing the AER, BHP identified discrepancies between proposed and actual land disturbance boundaries for three Decision Reports (Non-Notifiable Actions). BHP has determined that actual land disturbance extents areas do not exceed proposed extents areas provided for in the Decision Reports. Further, that the actual land disturbance boundaries do not change the original Decision Report determinations (i.e. all remain as Non-Notifiable Actions). BHP has raised these discrepancies in its Event Management System for further investigation and will implement corrective actions aimed at preventing a re-occurrence.

Table 5-2 Total Clearing by Habitat Type to 30 June 2024 for all Validation Notices and Decision Reports

Habitat Type	Total clearing [ha] from July 2018 to June 2023	Total clearing [ha] for this FY July 2023 to June 2024	Total clearing [ha] for the SEA from July 2018 to June 2024
Drainage Area and Floodplain	389.94	59.38	449.32
Gorge and Gully	104.40	9.20	113.60
Hardpan Plain	11.93	3.20	15.13
Hillcrest and Hillslope	3,205.24	224.67	3,429.91
Major Drainage Line	4.24	12.04	16.28
Minor Drainage Line	510.84	34.50	545.34
Mulga Woodland	113.78	39.09	152.87
Sand Plain	283.46	23.16	306.62
Stony Plain	446.75	66.54	513.29
Breakaway/Cliff	0.00	0.06	0.06
Unmapped	1.95	0.97	2.92
TOTAL	**5,072.36**	**472.81**	**5,545.34**

6 Validation Notices

6.1 Mining Area C

Mining Area C is located approximately 100 kilometres (km) northwest of the town of Newman in the Pilbara region of Western Australia. The mine is situated within Mineral Lease 281SA (ML281SA) and Mineral Lease 249SA (ML249SA) and is operated by BHP in accordance with the *Iron Ore (Mount Goldsworthy) Agreement Act 1964*.

Mining Area C - Northern Flank Operations commenced in August 2003 under Ministerial Statement (MS) 491, issued 24 December 1998. In February 2018, Ministerial Statement 491 was superseded by MS1072, which covers the existing Northern Flank Operations and the new Southern Flank development. In July 2018, the Mining Area C – South Flank Validation Notice became effective.

In March 2019, BHP submitted a section 45C application to amend MS1072 to allow the disposal of surplus water into a new Managed Aquifer Recharge (MAR) bore field at South Flank Valley and discharge to a drainage line that leads to Pebble Mouse Creek. This submission was approved on 15 January 2020. An EPBC non notifiable action Decision Report was finalised for the same project in May 2020. All ground disturbance for the project is included in the Mining Area C Validation Notice mentioned above.

Campaign mining continues through conventional open cut mining methods including drilling, blasting and categorisation of blasted material into iron ore or waste rock. Fixed and mobile ore crushing facilities are utilised through the operation. Ore is blended into stockpiles onsite and railed to BHP's shipping facilities at Port Hedland where it is shipped to overseas customers. Mining activities continued as per the FY2024 mine plan which included a new pit east of the Great northern Highway (Highway pit) and a new HB pit. Mining continued in the existing footprint of highway pits, Grand Central, Highway and Vista deposits. Development of infrastructure (haul roads, Run of Mine pads and Overburden Storage Areas) continued in FY2024 to support production and ramp up of operations.

Mine dewatering continues at North Flank. MAR continues to be the main method of surplus water discharge. The A Deposit MAR ceased to operate in April 2019 to allow for mine expansion. The Juna Downs MAR became operational in May 2019.

The South Flank Valley MAR concluded commissioning on 30 April 2022 and the commissioning report was submitted on 7 June 2022. Mine dewatering at South Flank MAR (Vista Pit) commenced at Vista A in November 2023.

6.1.1 Validation Notice Deviations

A potential non-compliance (deviation) relating to monthly ground water level data collection at Weeli Wolli Spring has been identified during this reporting period. Further detail is provided in Section 6.1.5.

6.1.2 Program Matter Monitoring and Outcomes

The monitoring required to be completed during the reporting period is outlined in Table 6-1. Monitoring results are discussed in the following sections.

Table 6-1 Program Matter Monitoring Requirements for FY2024 Reporting Period

Species	Monitoring	Parameter	Due Date	Performance Targets	Applicable Program Matter Outcome
Ghost Bat	Land disturbance reconciliation	Disturbance to Ghost Bat caves in the activity area during operations	Annually	No land disturbance within 50 m of 'to be retained High value ghost bat caves' or 'artificial ghost bat roosts'.	No loss of Ghost Bat population/s as a result of Program activities.
				No disturbance to any of the 'to be retained High value ghost bat caves' or 'artificial ghost bat roosts'.	
				No disturbance to any 'to be retained ghost bat cave' that renders it unsuitable ghost bat habitat.	

Species	Monitoring	Parameter	Due Date	Performance Targets	Applicable Program Matter Outcome
	Ghost Bat viability and presence	Presence/absence of Ghost Bat	July 2023 - Every 5 years during operations. BHP has implemented the annual Ghost Bat monitoring program	Signs of Ghost Bat use in the 'to be retained' Ghost Bat caves or artificial roosts (if applicable) within the activity area, within 5 years of cessation of operations.	No loss of Ghost Bat population/s as a result of Program activities.
Pilbara Olive Python	Land disturbance reconciliation	Land disturbance of pools Disturbance of Pilbara Olive Python habitat	Annually	No unauthorised disturbance beyond the activity area	Program activities do not physically disturb, or result in adverse changes to the hydrological regimes and/or water quality of the following waterholes: Weeli Wolli Spring, Ben's Oasis.
	Population monitoring	Presence/absence of Pilbara Olive Python	July 2028	NA	No loss of Pilbara Olive Python population/s as a result of Program activities.
	Hydrogeological monitoring	Groundwater levels	Annually	Monitoring commenced 2 years prior to commencement of dewatering of the eastern deposits.	Program activities do not physically disturb, or result in adverse changes to the hydrological regimes and/or water quality of the following waterholes: Weeli Wolli Spring, Ben's Oasis.
Greater Bilby	Land disturbance reconciliation	Disturbance to Greater Bilby habitat	Annually	No unauthorised disturbance beyond the activity area	No loss of Greater Bilby population/s as a result of Program activities.
	Population Monitoring	Presence/absence of Greater Bilby	July 2028	NA	No loss of Greater Bilby population/s as a result of Program activities.
Pilbara Leaf-nosed Bat	Land disturbance reconciliation	Disturbance to critical Pilbara Leaf-nosed Bat habitat	Annually	No unauthorised disturbance beyond the activity area	No loss of Pilbara leaf-nosed bat population/s as a result of Program activities.
	Population Monitoring	Presence/absence of Pilbara Leaf-nosed Bat	July 2028	Presence of species consistent with baseline data	No loss of Pilbara leaf-nosed bat population/s as a result of Program activities.
Northern Quoll	Land disturbance reconciliation	Disturbance to significant Northern Quoll habitat	Annually	No unauthorised disturbance beyond the activity area	No loss of Northern Quoll habitat that supports a high density population as a result of Program activities
	Population Monitoring	Presence/absence of Northern Quoll	July 2028	Presence of species consistent with baseline data.	No loss of Northern Quoll population/s as a result of Program activities.

6.1.3 Population Monitoring

Monitoring of Greater Bilby, Pilbara Olive Python, Leaf-Nosed Bat and Northern Quoll populations was not required during the reporting period as per the Validation Notice.

In respect of the Ghost Bat, based on the results of monitoring conducted during the FY2024 reporting period, BHP considers that the following Program Matter Outcome has been achieved for the FY2024 reporting period:

> *No loss of Ghost Bat population/s as a result of program activities*

Based on the continued presence of Ghost Bats at Mining Area C during the reporting period, BHP considers that the following performance target in the Mining Area C Validation Notice has been achieved for the FY2024 reporting period:

> *Signs of ghost bat use in the 'to be retained' ghost bat caves or artificial roosts (if applicable) within the activity area.*

Monitoring results for the Ghost Bat are discussed in the following sections.

6.1.3.1 Ghost Bat Monitoring

Sampling

During the reporting period, five field trips were undertaken as part of the bi-monthly scat collection monitoring program to determine presence/absence of Ghost Bats from scat deposits as outlined in the *BHP Mining Area C (South Flank) Fauna Management Plan Version 1.1* (BHP 2020) (MACFMP). As outlined in Table 5 of the MACFMP, the targeted caves include:

- 18 high-value caves retained or retained for minimum of five years (AC13, AC14, AC17, AC18[1], SF04, SF05, SF08, SF14, SF18, SF26, SF27, AC01, AC02, AC05, AC06, AC08, AC09, SF06)
- the Mining Area C artificial roost (AGBC)
- reference sites at Tandanya and Mudlark Well
- four Early Response Indicator Caves (ERI)[2] (SF03, SF09, SF28, SF30).

Note AC06 cannot be entered due to Working from Heights risk.

Refer to Table 6-2 of this AER for the FMP monitoring results. A summary of the five field trips are below.

July 2023

A total of 24 caves were visited (i.e., accessible but may or may not be able to be entered), consisting of 11 high value caves, eight reference sites, four additional caves and the artificial roost.

Caves not accessed:

- SF04, SF05, SF08, SF27, SF06, SF28, SF03, AC14, AC18 due to no safe access

Caves not entered:

- ACW10 reference site due to Ghost Bat presence
- AC06 due to falling from heights risk
- ACW01 reference site due to operational constraints.

Outcomes:

- a total of 221 scats across seven caves were observed and 124 collected
- one Ghost Bat individual directly observed at M01, and three individuals at ACW-06.

September 2023

A total of 32 caves were visited (i.e., accessible but may or may not be able to be entered), consisting of 16 high value caves, eight reference sites, seven additional caves and the artificial roost.

Caves not accessed:

- SF06, SF27 due to no safe access.

[1] The Retained High Value Cave AC18 cannot currently be accessed for bi-monthly monitoring due to safety concerns as this cave is located within 250 metres of active mining by Rio Tinto. Monitoring is proposed to re-commence when safe access can be re-established

[2] The Early Response Indicator was reached in July 2021 and in response, the following caves have been added to the bi-monthly scat program: SF03, SF09, SF28, SF30

Caves not entered:

- ACW31 reference site due to ghost bat presence
- AC06 due to falling from heights risk
- ACW09, M01, M02 reference sites due to operational constraints

Outcomes:

- a total of 4220 scats across seven caves were observed and 151 collected.
- 2 Ghost Bat individuals directly observed at ACW31 and SF08
- one Reolink camera installed at AC09.

January 2024

A total of 33 caves were visited (i.e., accessible but may or may not be able to be entered), consisting of 17 high value caves, eight reference sites, seven additional caves and the artificial roost.

Caves not accessed:

- AC18 due to safety concerns during summer months
- AC06 due to falling from heights risk.

Caves not entered:

- ACW01, ACW31, M01, ACW08 reference site due to operational constraints.

Outcomes:

- A total of 328 scats across 10 caves were observed and 88 collected.
- No Ghost Bat individuals directly observed.
- Feral cat monitoring cameras installed at SF05, SF08, SF14, AC01, AC09, AC17.

March 2024

A total of 31 caves were visited (i.e., accessible but may or may not be able to be entered), consisting of 17 high value caves, six reference sites, seven additional caves and the artificial roost.

Caves not accessed:

- AC18, ACW06, M01 due to no safe access
- AC06 due to falling from heights risk.

Outcomes:

- A total of 79 scats across five caves were observed and 57 collected.
- One Ghost Bat individual directly observed at M01 and two observed at AC14.
- Water dripping was observed in AC08, triggering exit response from field crew over safety concerns.

May 2024

A total of 33 caves were visited (i.e., accessible but may or may not be able to be entered), consisting of 18 high value caves, seven reference sites, seven additional caves and the artificial roost.

Caves not accessed:

- ACW06 due to no safe access
- AC06 due to falling from heights risk.

Caves not entered:

- ACW01 reference site due to Ghost Bat presence.

Outcomes:

- A total of 229 scats across 5 caves were observed and 51 collected.
- One Ghost Bat individual directly observed at ACW01.

Eight of the 18 high value caves recorded no presence (four with no records in FY2024), with AC6 remaining inaccessible due to working at heights restrictions. Most visual observations of Ghost Bats were of individuals only (except reference site ACW06 n=3, July 23), with cave visitations aborted as soon as bats were noted, in order to avoid flushing roosting bats. Therefore, active caves were not able to be thoroughly examined in some instances, where multiple chambers exist.

Table 6-2 Scat collection FMP bi-monthly monitoring

Cave	Location	Jul-23		Sep–23		Jan–24		Mar-24		May-24	
		No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present
MS1072 Sites											
AC1	North Flank	2	0	10	0	0	0	0	0	0	0
AC2	North Flank	0	0	0	0	0	0	0	0	0	0
AC5	North Flank	0	0	0	0	0	0	0	0	0	0
AC6	North Flank	UA	UA	UA	UA	UA	UA	UA	UA	UA	UA
AC8	North Flank	0	0	0	0	6	0	0	0	4	0
AC9	North Flank	0	0	0	0	10	0	0	0	0	0
AC13	North Flank	0	0	0	0	0	0	0	0	0	0
AC14	South Flank	UA	UA	0	0	0	0	NE	2	3	0
AC17	South Flank	0	0	0	0	0	0	0	0	0	0
AC18	South Flank	UA	UA	0	0	UA	UA	UA	UA	0	0
SF4	South Flank	UA	UA	0	0	26	0	0	0	0	0
SF5	South Flank	UA	UA	220	0	10	0	2	0	0	0
SF6	South Flank	UA	UA	UA	UA	0	0	0	0	0	0
SF8	South Flank	UA	UA	2000	1	5	0	1	0	200	0
SF14	South Flank	10	0	0	0	37	0	0	0	0	0
SF18	South Flank	0	0	0	0	0	0	0	0	0	0
SF26	South Flank	90	0	0	0	0	0	0	0	0	0
SF27	South Flank	UA	UA	UA	UA	4	0	0	0	0	0
AR01	North Flank	UA	UA	0	0	0	0	0	0	0	0
Reference Sites											
ACW01	Tandanya	NE	NE	1500	0	NE	NE	23	0	0	1
ACW06	Tandanya	40	3	NE	NE	40	0	UA	UA	UA	NE
ACW08	Tandanya	0	0	150	0	NE	NE	50	0	0	0
ACW10	Tandanya	NE	1	NE	NE	180	0	0	0	2	0
ACW31	Tandanya	0	0	NE	1	NE	NE	0	0	20	0
AC10	Tandanya	-	-	-	-	0	0	0	0	0	0
M01	Mudlark	8	0	0	0	NE	NE	UA	UA	0	0
M02	Mudlark	0	0	NE	NE	0	0	0	0	0	0
ERI Sites^											
SF03	South Flank	UA	UA	40	0	0	0	0	0	0	0
SF09	South Flank	0	0	0	0	0	0	0	0	0	0
SF28	South Flank	UA	UA	300	0	10	0	3	0	0	0
SF30	South Flank	20	0	0	0	0	0	0	0	0	0
Opportunistic Sites (Ad Hoc)											
SF2	South Flank	51	0	0	0	0	0	0	0	0	0
SF24	South Flank	0	0	0	0	0	0	0	0	0	0

bats present | scats present

NE Not Entered; UA Not entered due to Unsafe Access or conditions; ^ERI (Early Response Indicator) are the inclusion of additional monitoring caves due to an FMP trigger exceedance event in FY2022
– Not visited
* Scats collected off sheet

In February 2023, four high value caves (AC14, SF18, SF4 and SF26) reached a trigger criteria listed in the FMP due to no recorded scats over a 24-month period. Actions initiated in response to meeting the trigger criteria included:

- Increase the extent of the monitoring to low value caves or alternative location that the Ghost Bats may use
- Compare changes to results from other BHP Ghost Bat Monitoring programs
- Investigate the potential change in presence at high value caves to be retained and determine if additional threshold actions are required.

The extent of monitoring was increased to include low value caves and caves outside of the MS1072 Development Envelope as part of the response to the FMP trigger. This included caves in the Tandanya and Mudlark Well geoscience project areas to the west of the MS1072 Development Envelope.

Results for FY2024 show scats were found in SF4, SF26, and AC14, with SF18 remaining unused, and has remained so since records commenced.

Ghost Bat presence, which comprises of records of fresh scats collected on midden sheets and observations of Ghost Bats has been compared across project areas in Figure 6-1. Given sampling regimes differ (e.g., number and selection of caves monitored and timing) from year-to-year and across projects, results cannot be directly compared. However, results indicate that Ghost Bats are still present across the eastern Hamersley subregion of the Pilbara.

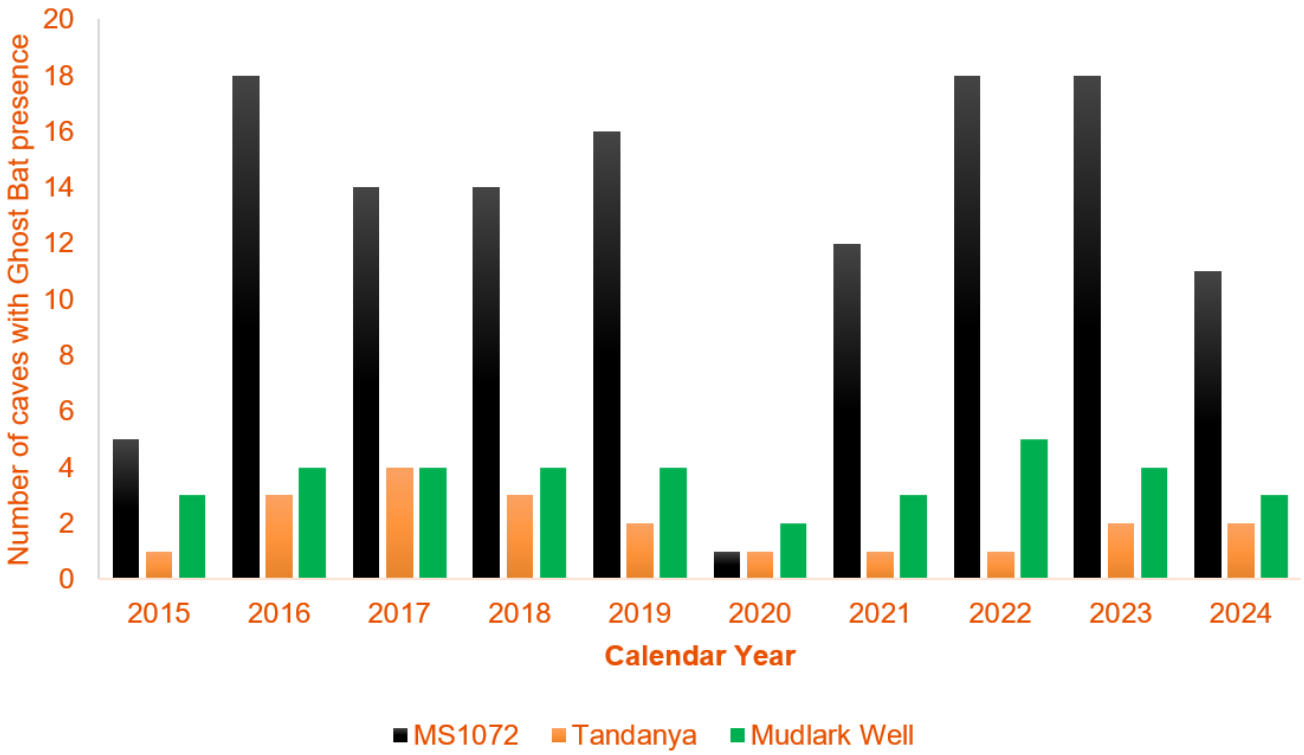

Figure 6-1 Number of caves with recorded Ghost Bat presence across different project areas

Ghost Bat presence at high value retained caves has decreased marginally caves in the MS1072 Development Envelope (Figure 6-2). A decrease was observed in FY2021, however, it is likely that this result is the function of the relatively low number of sampling events (three) that took place in 2020. The environmental criteria in the MS1072 MACFMP focuses on Ghost Bat absences from caves, rather than presence.

Given that Ghost Bats are known to utilise a variety of caves and that Ghost Bats may by hidden in chambers not accessible to humans or may not deposit scats on the midden sheet, it is difficult to rely on absence data. BHP WAIO submitted a revised MACFMP Version 2.1 on 24 March 2023, which proposed using presence data only to determine any potential changes in cave utilisation by the Ghost Bat in the MS1072 Development Envelope. Once the MACFMP Version 2.1 is endorsed, the above actions will be reviewed, and actions aligned to Version 2.1.

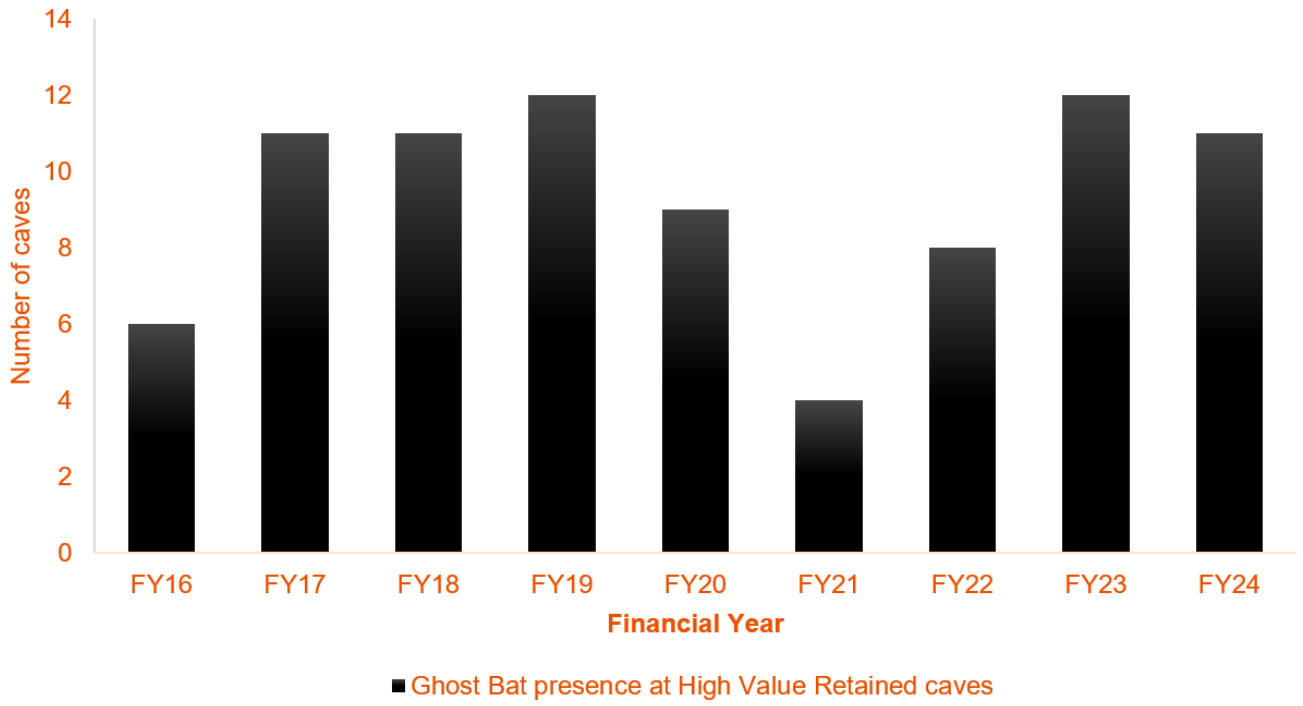

Figure 6-2 Ghost Bat presence at High Value retained caves in the MS1072 Development Envelope

Genotype Analysis

Samples taken for genetic and hormone analysis are subject to a 12-month lead-time, therefore complete results from samples collected in FY2024 will be presented in the FY2025 reporting. Genetic results from samples collected between July 2022 and May 2023 are summarised below for FY2024.

A total of 38 unique genotypes (unique individuals) were identified from the 368 successfully genotyped scat samples. The number of individuals recorded from each cave ranged from zero to six (Table 6-3). The highest abundance was recorded at SF28 (n = 6), SF03 (n = 5), SF08 (n = 5), SF27 (n = 4), AC09 (n = 4) and ACW06 (n = 4). In September 2022, 17 individuals were detected from ten caves; the highest number of individuals detected during a given sampling period during FY2023. The effective population size estimate during FY2023 shows a recovery from FY2022, however is still lower than the original estimate in 2019.

Of the 38 individuals identified, 19 individuals were also recorded from previous surveys. Five of the 19 individuals have been detected consistently within the area for four to six years. The most recorded and consistent individual, 437 (six years of records), was detected during FY2023 at ACW01, after being absent during FY2022.

No maternity groups were observed during FY2023. The genetic analysis suggested that there were 11 pairs of related individuals (parent-offspring or full-sibling pedigree relationship), six of which were recorded within the same caves (SF08, SF03, SF27, SF28, AC17, AC18, AC05 and AC09). During FY2022, seven pairs of related individuals occurred within 10 caves, four of which are consistent with pairs identified during the FY2023 (SF08, SF27, SF28 and AC17).

Most individuals moved between a cluster of caves in the western portion of South Flank (SF08, SF05, SF03, SF27 and SF28), suggesting a degree of site fidelity within the South Flank area. Based on DNA sexing there were 17 females, 18 males and four individuals of undetermined sex. Female genotypes were exclusively recovered from five caves: SF01, SF09, M01, ACW10 and ACW17. Female genotypes also comprised more than 50% of the genotypes recovered from SF08 and SF27.

Table 6-3 Number of genotyped individuals detected by cave during each monitoring trip (2022-2023)

Cave	Number of genotyped Individuals detected from each monitoring trip					Total individuals	Individual genotype number
	Jul-22	Sep-22	Jan-23	Mar-23	May-23		
MS1072 Sites							
AC05		1	1	1		**1**	879
AC09		1	3	2	2	**4**	851, 879, 893, 905
AC13				1			80
AC17	2				1	**3**	844, 885, 886
AC18	-		-	-	1	**1**	844
SF01		-	-	-	1	**1**	892
SF05		2		1		**2**	674, 878
SF08	#	5	4	2		**5**	533, 674, 815, 841, 843
SF27				4	1	**4**	527, 533, 903, 904
Early Response Indicator Caves							
SF03	1		1		5	**5**	843, 897, 895, 896, 894
SF09				1		**1**	842
SF28	3	1	1		2	**6**	435, 449, 533, 674, 880, 881
Reference Sites							
ACW01		1				**1**	437
ACW06		3	1	1		**4**	682, 834, 883, 884
ACW08	1	1	3		-	**3**	685, 849, 850
ACW10	1				-	**1**	685
M01		1			-	**1**	882
Additional Caves							
SF11	-	1*	-	-	-	**1**	690
ACW17	2*	-	-	-	-	**2**	890, 891

* refers to genotypes obtained from scats collected off sheet (scats likely fresh but age of these scats cannot be guaranteed)
\- refers to caves that were not visited during monitoring trip
\# refers to caves where scats could not be collected
.

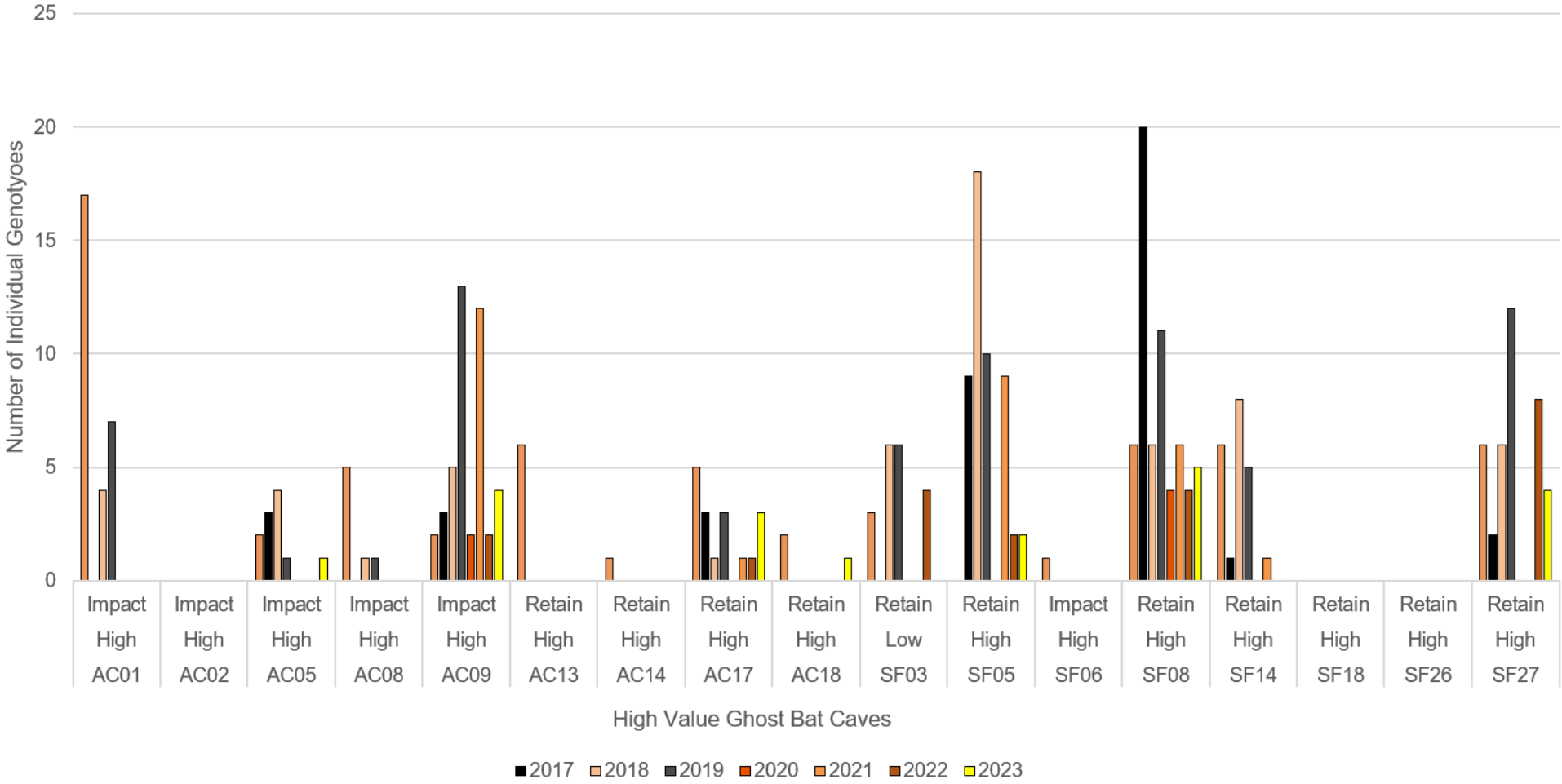

Figure 6-3 Individual genotypes recorded in genetic analyses from high value caves at Mining Area C sampled in 2016 to 2023

Hormone Analysis

Scats collected between July 2023 and May 2024 were analysed by the University of Queensland for faecal metabolites (hormones) to determine the occurrence of pregnant individuals within caves.

Hormone concentrations were expressed as nanograms of hormone metabolites per gram of faeces (ng/g). Progesterone levels are considered to be elevated (i.e. progesterone levels indicating pregnancy of individual) for results of 970 ng/g or greater.

Of the 559 scats collected during the current reporting period, 329 scats (58.86%) from 21 caves (six retained high value caves, three high value retained for 5-year caves, three low value, six contextual caves, and three additional caves) contained elevated progesterone levels (Table 6-4). CTAN-06 contained the highest proportion of scats with elevated progesterone (92.86% of scats collected), with SF08, SF28, CTAN-01, CTAN-06, and CMUD-08 used most consistently by presumed pregnant females during the current reporting period.

CMUD-01 has recorded presence of pregnant females across all but the 2020–2021 reporting period (n = 8) making it the most consistently used cave by pregnant females of the 33 monitored caves. CMUD-10 (n = 7), CMUD-08 (n = 6), and SF08 (n = 6) have also recorded presence of pregnant females consistently for the last six reporting periods.

Forty samples from 18 caves showed intermediate levels of progesterone (i.e. progesterone levels ranging from 700 – 999 ng/g), suggesting the hormone was either decaying due to the age of the scat, or the individual may have recently been pregnant or was in early stages of pregnancy. All the remaining samples analysed (32.20%) returned progesterone levels of 699 ng/g or below.

An additional 34 scats opportunistically collected from CMUD-047 were analysed to provide additional regional context. Of the 34 samples analysed, 32 scats (94.12%) contained elevated progesterone levels (progesterone levels exceeding 1,000 ng/g), indicating the presence of presumed pregnant females.

Table 6-4 Caves containing scat samples with elevated (> 970 ng/g) progesterone

Cave	Jul-23	Sep-23	Jan-24	Mar-24	May-24	Total scats collected on- and off-sheet
AC13	0	0	0	0	0	0
AC14	-	0	0	#	0/3	3
AC17	0/3	0	0	0	0	3
AC18	-	0	-	-	0	0
AC01	0/2	**9/10**	0	0	0	12
AC02	0	0	0	0	0	0
AC05	0	0	0	0	0	0
AC08	0	0	0/6	0	4/5	11
AC09	0	0	3/5	0	0	5
AR1	0	0	0	0	0	0
SF04**	-	0	9/9	0	0	9
SF05**	-	**7/8**	0	**2/2**	0	10
SF08**	-	**24/30**	**5/5**	#	15/30	65
SF14**	0/7	0	10/25	0	0	32
SF18**	0	0	0	0	0	0
SF26**	5/36	0	0	0	0	36
SF27**	-	-	1/1	**0**	0	1
SF02	14/37	0	1/1	0	0	38
SF06	-	-	0	0	0	0
SF03	**-**	23/30	**4/9**	0	**0**	39
SF09	0	0	0	0	0	0
SF24	0	0	0	0	0	0
SF28	-	**17/23**	**1/2**	3/3	**0**	28
SF30	1/10	0	0	0	0	10
CTAN-01	-	**23/30**	-	19/23	#	53
CTAN-06	22/24	**-**	4/4	**-**	-	28
CMUD-08	**6/20**	**9/20**	**-**	16/20	0	60

Cave	Jul-23	Sep-23	Jan-24	Mar-24	May-24	Total scats collected on- and off-sheet
CMUD-10	#	-	26/29	1/2	0	31
CTAN-31	0	-	-	9/9	7/15	24
CMUD-01	6/7	0	-	-	0	7
CMUD-02	0	-	0	0	0	0
CEPA10						
CMIN-03			0	0	0	0
CTAN-07*	5/5					5
CMUD-63*					9/19	19
CMUD-64*					6/30	30
Total	**151**	**151**	**96**	**59**	**102**	**559**

- Denotes caves were visited during the given monitoring survey
* Scats that were not collected from scat sheet
** FMP High Value Retained caves
\# Caves that could not be inspected for caves
Scats with elevated progesterone levels have been bolded.

Based on FY2024 analysis of monitoring results, there was a potential non-compliance with Ghost Bat scat presence threshold criteria for the Population Outcome [Condition 7-1(1) in the Mining Area C FMP (rev 1.1)], related only to SF18. The following response actions will remain during the reporting period:

- Maintain monitoring to low value caves or alternative location that the Ghost Bats may use
- Continue to compare changes to results from other BHP Ghost Bat Monitoring programs

The MACFMP (rev 2.1) has been submitted. Once endorsed, the above actions will be reviewed and aligned.

6.1.3.2 Pilbara Olive Python

Scheduled targeted monitoring was not required during the reporting period. Two Pilbara Olive Pythons were observed at the Mulla Mulla and Packsaddle camp within the activity area during FY2024 reporting period.

6.1.4 Management Commitments

An update on the management commitments is outlined below.

Barbed wire fence removal

No barbed wire fencing (within 50 km of the activity area) was removed or replaced during the reporting period. Metal bat deflectors were installed on security fences where barbed wire is a statutory design requirement, including the Mining Area C Security Storage Ammonium Nitrate (SSAN). Planning and stakeholder identification is ongoing to identify areas of barbed wire fencing, which are located on third party-owned assets, that can be removed or replaced.

Feral animal control

No updates during the reporting period.

Fire control/management

No updates during the reporting period.

Remove cattle from newly excised land from pastoral leases and construction of exclusion fencing (where applicable)

No updates during the reporting period.

Exclusion fencing around waterholes

No updates during the reporting period.

6.1.5 Hydrological Regimes

During FY2024 groundwater level monitoring data was collected at the pathway and receptor bores for Weeli Wolli and Ben's Oasis. There were no exceedances or non-compliances relating to trigger and threshold criteria associated with the BHP Central Pilbara Water Resource Management Plan Version 4.1 (BHP 2021) (CPWRMP),

referenced in the Mining Area C Validation Notice. A potential non-compliance relating to missed monthly groundwater bore levels at Weeli Wolli under the Central Pilbara Water Resource Management Plan (Version 4.1) monitoring program was identified during FY2024. Refer to baseline groundwater level monitoring at the pathway and receptor bores for Weeli Wolli Spring (Table 6-5 and Figure 6-4) and Ben's Oasis (Table 6-6 and Figure 6-5).

Although there are data gaps in the water level records at Weeli Wolli Springs groundwater bores, BHP considers water levels at these receptors have not been affected. Consistent water level trends are visible in the available data and in adjacent bores with complete data sets.

Based on the monitoring undertaken during the FY2024 reporting period, BHP considers that the Program Matter Outcome has been achieved during the reporting period:

> *Program activities do not physically disturb, or result in adverse changes to the hydrological regimes and/or water quality of the following waterholes: Weeli Wolli Spring, Ben's Oasis;*

Dewatering of South Flank deposits (Vista A) has commenced in November 2023 and R Deposit is not scheduled to commence within the next four years. Groundwater level monitoring continued during FY2024 the reporting period at the pathway and receptor bores for Weeli Wolli Spring and Ben's Oasis.

Table 6-5 Groundwater levels for baseline understanding – Weeli Wolli Spring

Sample Point ID	Weeli Wolli Spring FY2024 (mRL)											
	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
Early Warning												
GWB0015M	554.681	554.580	554.492	554.416	554.355	554.331	554.445	554.673	555.139	554.926	554.819	554.765
HEPX0001M	526.35	526.00	525.60	525.24	524.98	524.33	524.18	524.02	523.95	523.92	523.63	523.58
At Receptor												
GWB0016DM	564.983	564.662	564.944	564.944	564.733	564.448	564.263	-	564.548	564.132	564.339	564.37
GWB0016SM	564.570	564.256	564.437	564.374	564.143	563.019	564.927	-	564.534	564.276	564.6094	564.181
GWB0017DM	-	-	555.994	556.228	556.407	556.270	556.334	556.038	556.015	555.847	555.744	555.734
GWB0017SM	556.456	556.365	556.358	556.330	556.320	556.344	556.683	556.560	556.735	556.810	556.874	556.866
GWB0018DM	559.368	559.488	559.595	-	560.020	559.898	559.370	559.022	559.208	-	-	559.82
GWB0018SM	560.760	560.735	560.766	560.791	560.763	560.677	560.091	560.632	560.705	560.563	560.481	560.455
GWB0032DM	550.562	550.655	550.748	550.846	550.919	550.889	551.034	-	550.941	550.911	550.884	550.915

- Denotes that no reading was taken.

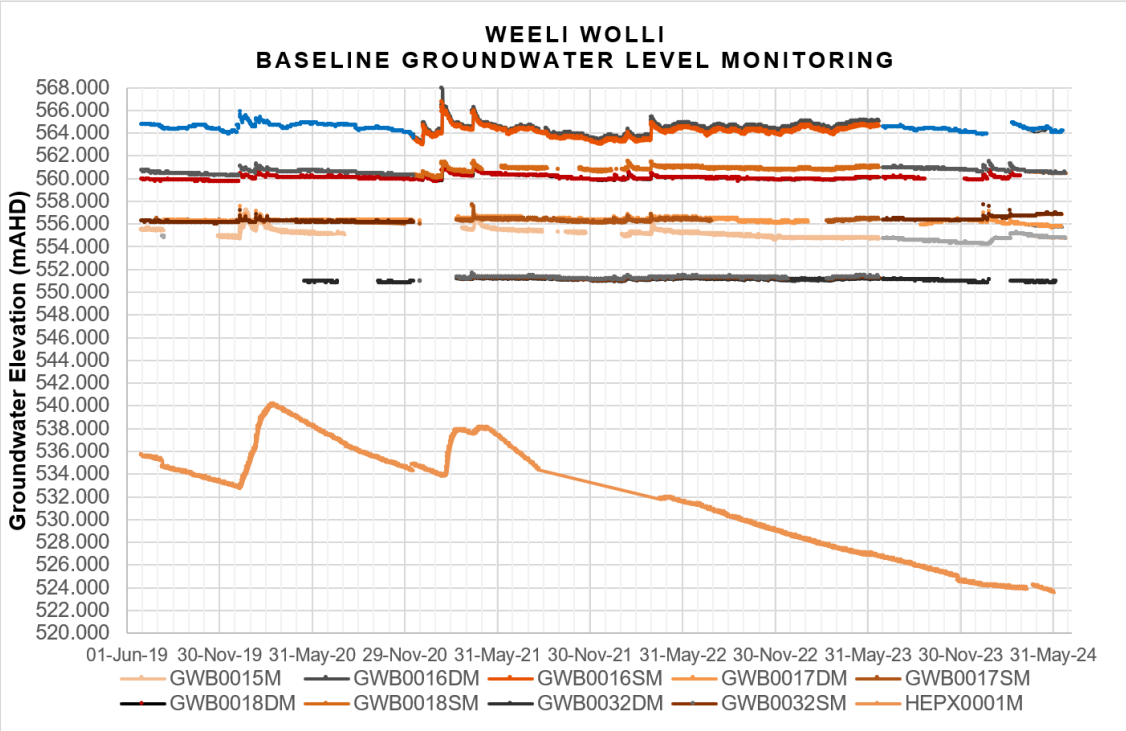

Figure 6-4 Weeli Wolli Spring Groundwater Levels

Table 6-6 Groundwater levels for baseline understanding – Ben's Oasis

Sample Point ID	Ben's Oasis FY2024 (mRL)											
	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
Early Warning												
HDD0004M	570.834	570.618	570.402	570.175	569.984	569.775	569.880	569.671	571.355	570.317	569.690	569.548
HDD0003M	567.159	566.953	566.723	566.512	566.548	566.355	566.158	565.899	565.640	565.101	565.159	565.090
At Receptor												
HDD0001M	604.218	604.217	604.168	604.135	604.118	604.141	604.163	604.385	604.053	604.077	604.759	604.718

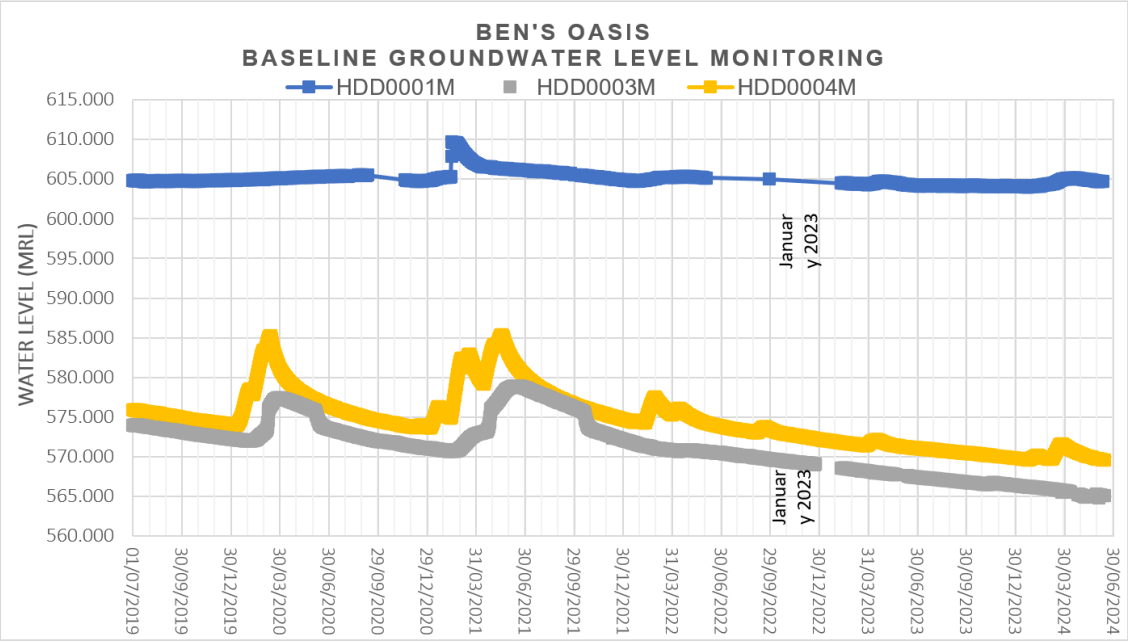

Figure 6-5 Ben's Oasis Groundwater Level Monitoring

6.1.6 Offsets

BHP is preparing a MAC-South Flank Offsets Proposal to address residual impacts identified in the MAC-South Flank Validation Notice (2018). Preparation of the Proposal is required to address a recommendation arising from the five yearly review of the EPBC Strategic Program. BHP continues to work with DCCEEW to finalise the Offsets Proposal. This will include commitments to provide financial contributions to the PEOF to address habitat loss other than caves. In addition, the Proposal will commit to implementing on-ground offsets, including research on the construction of artificial roosts and their efficacy, and the management of Feral cats.

6.1.7 Land Disturbance Reconciliation

Disturbance undertaken during the reporting period under the Mining Area C Validation Notice is detailed in Table 6-7. The disturbance of habitats for all the Program Matters is shown in Figure 6-6 and Figure 6-7.

No disturbance has been undertaken at Weeli Wolli Spring or Ben's Oasis by BHP. Based on the disturbance undertaken during the FY2024 reporting period, BHP consider that the following Program Matter Outcome has been achieved during the FY2024 reporting period:

> *Program activities do not physically disturb, or result in adverse changes to the hydrological regimes and/or water quality of the following waterholes: Weeli Wolli Spring, Ben's Oasis;*

The gorge and gully habitats do not support a high density population of Northern Quolls at Mining Area C. BHP considers that the following Program Matter Outcome has been achieved during the FY2024 reporting period:

> *No loss of Northern Quoll habitat that supports a high density population as a result of Program activities;*

No land disturbance has occurred within 50 m of the retained high value ghost bat caves or artificial Ghost Bat roosts during the reporting period (Figure 7.3). BHP considers that the following performance targets in the Mining Area C Validation Notice have been achieved for the FY2024 reporting period:

> *No land disturbance within 50 m of 'to be retained High value ghost bat caves' or 'artificial ghost bat roosts'.*
>
> *No disturbance to any of the 'to be retained High value ghost bat caves' or 'artificial ghost bat roosts'.*
>
> *No disturbance to any 'to be retained ghost bat cave' that renders it unsuitable ghost bat habitat.*

No land disturbance has occurred outside of the activity area (Figure 6-6) and disturbance to habitats for each Program Matter remains below the impacts described in the Mining Area C Validation Notice (Table 6-7). BHP considers that the following performance target in the Mining Area C Validation Notice for the Greater Bilby, Pilbara Olive Python and Northern Quoll have been achieved for the FY2024 reporting period:

> *No unauthorised disturbance beyond the activity area.*

All disturbance to habitats for each Program Matter remain below the impacts predicted during the Validation Process (Table 6-7).

Table 6-7 Mining Area C Disturbance by habitat type

Habitat	Activity disturbance July 2023 to June 2024 (ha)	Total Disturbance from July 2018 to June 2024 (ha)	Total Predicted Disturbance (ha)
Ghost Bat			
Foraging Habitat[1]	160.27	4451.19	14,502
Ghost Bat Caves	Two caves (2024 – AC3, AC11)	Four caves (2019 – SF22, 2020 – SF15, 2024 – AC3, AC11)	Thirty-six roosts (impact)
Pilbara Olive Python			
Gorge/Gully	8.96	112.94	1,123
Major Drainage	0.1	0.8	2
Total			*1,125*
Greater Bilby			
Sand Plain	0.85	128.42	236
Pilbara Leaf-nosed Bat			
Gorge/Gully	8.96	112.94	1,123
Northern Quoll			
Gorge/Gully	8.96	112.94	1,123

1 Ghost Bat foraging habitat is based on a buffer of 4 km applied to high value roosts as per Area B outlined in Ministerial Statement 1072.

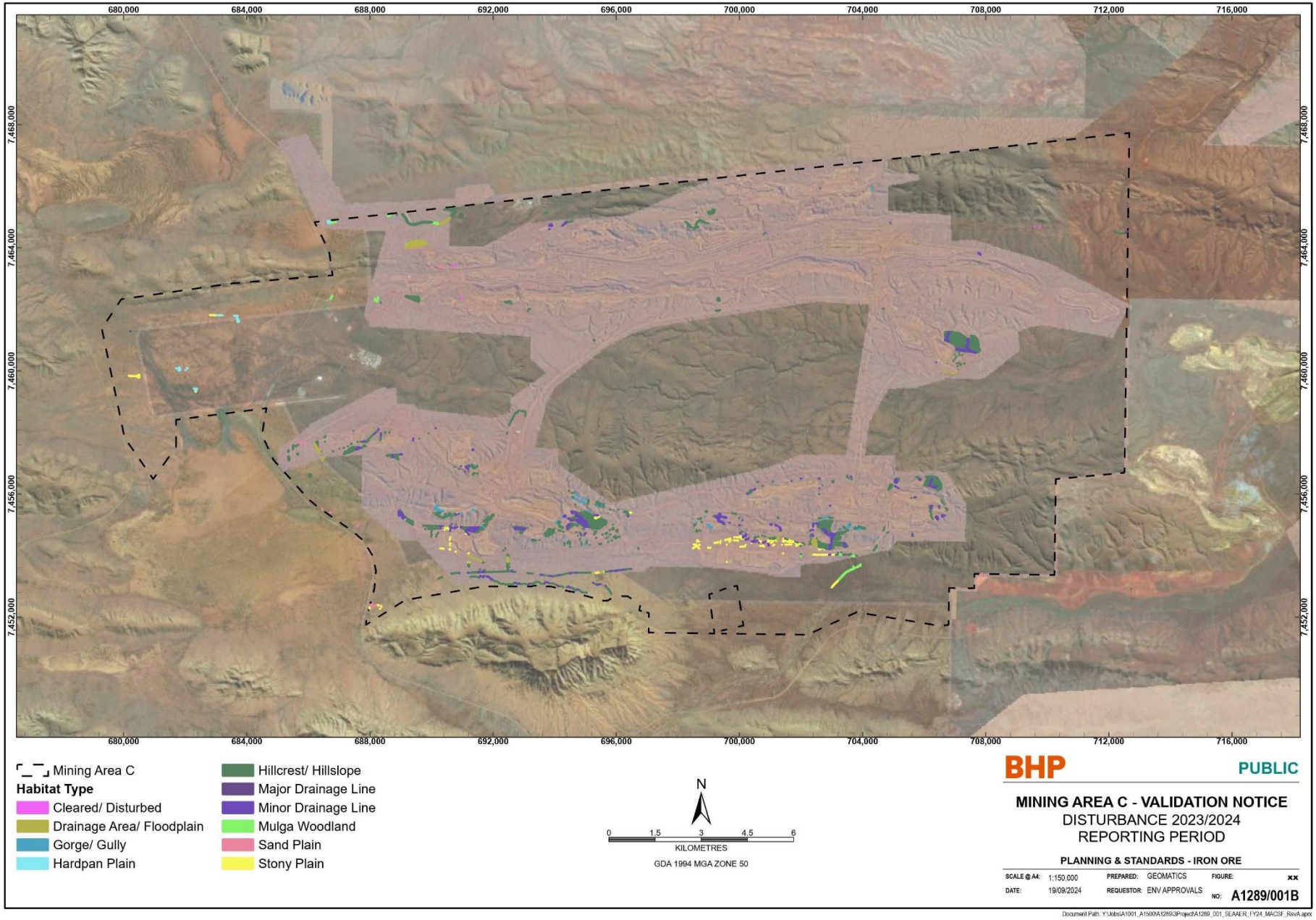

Figure 6-6 Mining Area C VN Habitat Disturbance FY2024

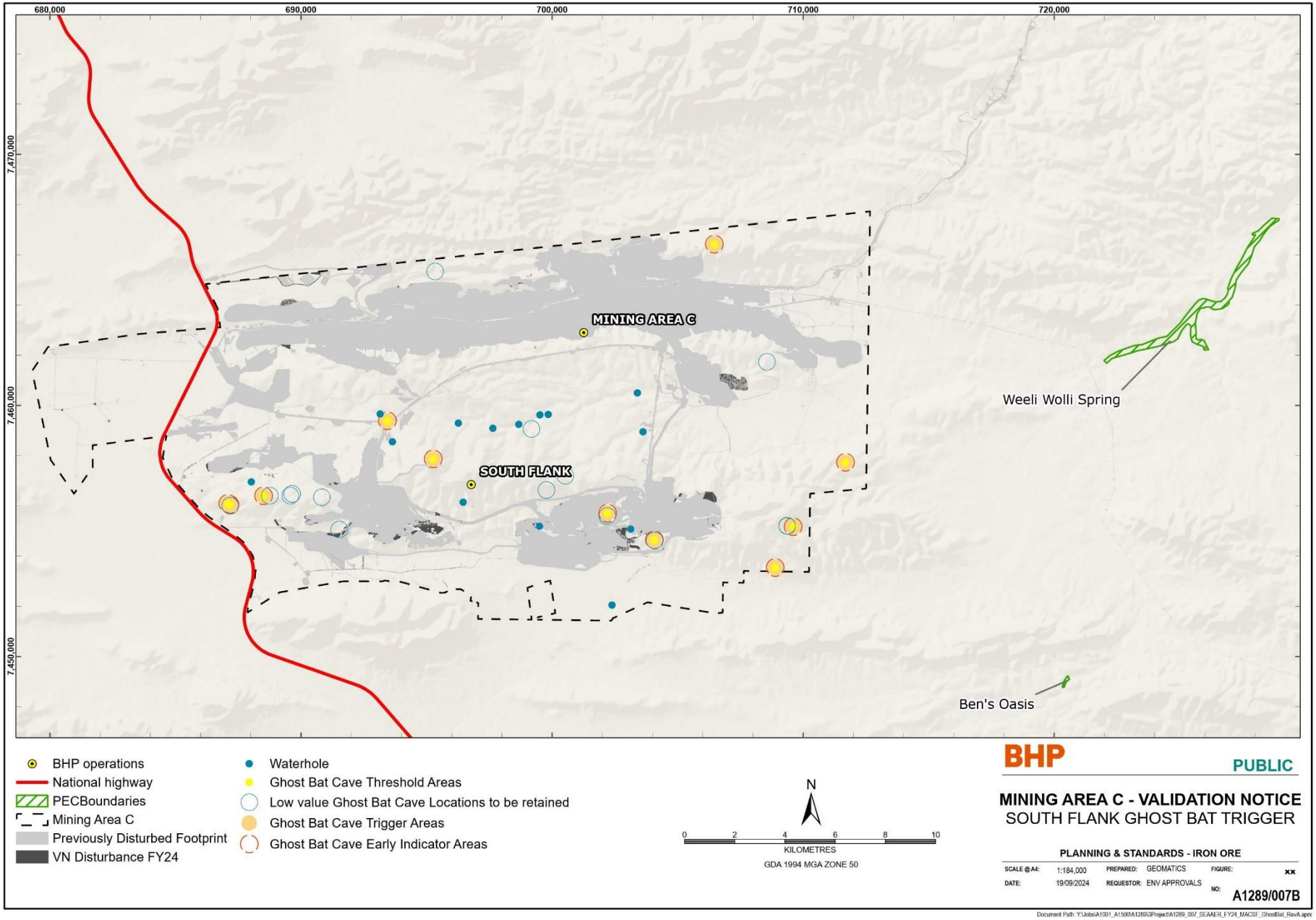

Figure 6-7 Mining Area C Ghost Bat Caves and Disturbance

6.2 Jimblebar Optimisation Project

Existing mining operations at Jimblebar are located approximately 40 km east of the town of Newman. Existing mining operations include above and below water table mining of open iron ore pits, overburden storage areas and the operation of associated mine, processing and rail infrastructure. Groundwater is abstracted for water supply and to dewater the orebodies. Surplus water management includes transfer to Ophthalmia Dam, controlled creek discharge to Jimblebar Creek and Caramulla Creek and MAR at Orebody 18 and Caramulla.

The Jimblebar Optimisation Project Validation Notice (May 2020) came into effect on the 8 June 2020. The Jimblebar Optimisation Project Revised Validation Notice (August 2023) (the Revised Validation Notice) came into effect on 25 September 2023. This section reports on the Jimblebar Optimisation Project Validation Notice (May 2020) from 1 July 2023 to 25 September 2023. From thereon, the Revised Validation Notice took effect and reporting information relevant to the period 25 September 2023 to 30 June 2024 is provided in Section 0.

6.2.1 Validation Notice Deviations

No non-compliances (deviations) were identified during the reporting period from 1 July 2023 to 25 September 2023.

6.2.2 Program Matter Monitoring and Outcomes

The monitoring required to be completed during the reporting period is outlined in Table 6-8. Monitoring results of the Ghost Bat monitoring program are discussed in Section 6.2.2.1.

Table 6-8 VN Program Matter Monitoring Requirements for FY2024 Reporting Period

Species	Monitoring	Parameters	Timing	Performance Targets	Applicable Program Matter Outcome
Ghost Bat	Monitoring Ghost Bat presence and usage of the activity area.	Presence/absence of Ghost Bat.	Six monthly monitoring.	Presence or evidence of presence of Ghost Bat at all seven Ghost Bat caves during one monitoring event.	No loss of Ghost Bat population/s as a result of Program activities.

Note the performance target has been updated in the Revised Validation Notice (August 2023), which came into effect 25 September 2023. Reporting against the updated performance target is outlined in Section 0.

6.2.2.1 Ghost Bat Monitoring

Based on the Ghost Bat monitoring conducted during the 1 July 2023 to 25 September 2023, BHP considers that the following Program Matter Outcome has been achieved for the portion of the FY2024 reporting period:

No loss of Ghost Bat population/s as a result of Program activities.

BHP considers the Program Matter Outcome was achieved as Ghost Bat presence was recorded at five of the 19 monitored caves, with a Ghost Bat individual also observed during the July 2023 field trip at CNIN-13. Ghost Bat monitoring results are discussed in the following sections.

Sampling

In FY2024, two field trips were undertaken to determine presence/absence of Ghost Bats in caves within or adjacent to the activity during the reporting period from 1 July 2023 to 25 September 2023, in line with the monitoring commitments in the Validation Notice (May 2020).

July 2023

Field trip one was conducted 29 June to 3 July 2023. Ghost Bat scats were collected at CNIN-01 (69 scats for genetic analysis and 150 scats for dietary studies) and CNIN-13 (12 scats). One Ghost Bat individual was observed in the rear chamber of CNIN-13.

September 2023

Field trip two was conducted from 8 to 12 September 2023. Ghost Bat scats were collected at CNIN-01 (150 scats), CNIN-03 (10 scats) and CNIN-13 (20 scats). Trapping was conducted at CNIN-03, CNIN-09 and CNIN-13, however, no Ghost Bats were caught.

Table 6-9 Jimblebar caves monitored during FY2024 reporting period (01/07/2023 to 25/09/2023)

Cave ID	Roost Type	July 2023	Sep 2023
CJIM-01	Category 4	✓	✓
CJIM-03	Category 2	✓	✓
CJIM-04	Category 4	✓	✓
CJIM-05	Category 4	✓	✓
CJIM-06	Category 4	✓	✓
CJIM-07	Category 4	✓	✓
CJIM-08	Category 4	✓	✓
CJIM-09	Category 3	✓	✓
CJIM-14	Category 3	✓	✓
CJIM-15	Category 4	✓	✓
CJIM-16	Category 3	✓	✓
CJIM-17	Category 4	✓	✓
CJIM-18	Category 4	✓	✓
CJIM-20	Category 4	✓	✓
CNIN-01	Category 3	✓	✓
CNIN-02	Category 3	✓	✓
CNIN-03	Category 2	✓	✓
CNIN-09	Category 3	✓	✓
CNIN-13	Category 3	✓	✓

6.2.3 Land Disturbance Reconciliation

Disturbance undertaken from 1 July 2023 to 25 September 2023 is reported in Table 6-10 below. The Revised Validation Notice which took effect on 25 September 2023 modified the activity area, increased the disturbance and consolidated all proposed disturbance. Land clearing undertaken from 25 September to 30 June 2024 is detailed in Section 0.

Table 6-10 Jimblebar Optimisation Project Disturbance by habitat type

Habitat	Activity disturbance July 2023 to 25 September (ha)	Total Disturbance from June 2020 to September 2023 (ha)	Total Predicted Disturbance (ha)
Ghost Bat			
Gorge and Gully	0	0	1
Major drainage line	0	3.82	33
Total	*0*	*3.82*	*34*
Gorge and Gully	0	0	1
Major drainage line	0	3.82	33
Total	*0*	*3.82*	*34*
Sandplain	4.57	160.17	261
Mulga Woodland	0.13	70.56	447
Total	*4.7*	*230.73*	*708*
Gorge and Gully	0	0	1
Major drainage line	0	3.82	33
Total	0	3.82	34
Gorge and Gully	0	0	1
Major drainage line	0	3.82	33
Total	*0*	*3.82*	*34*

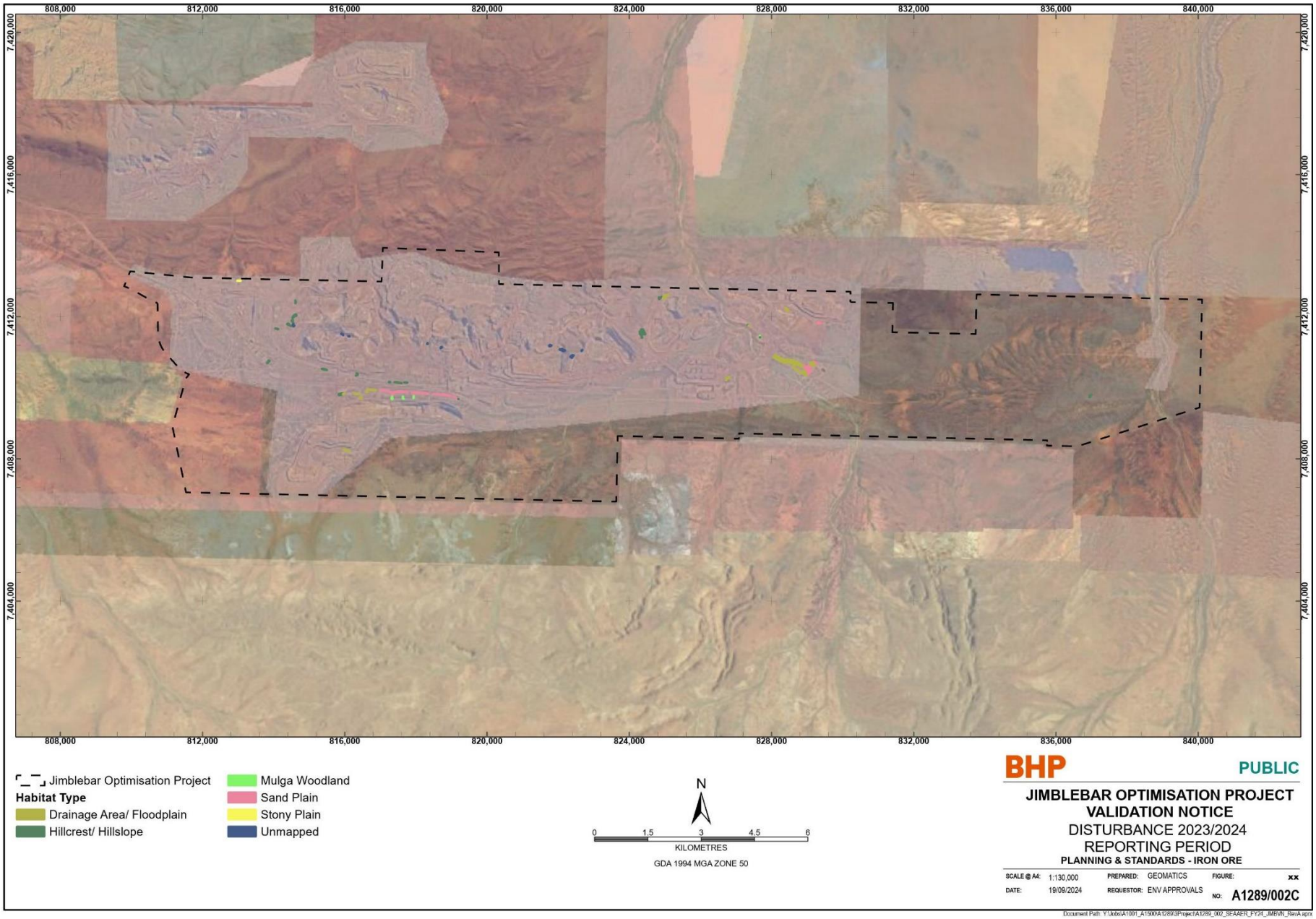

Figure 6-8 Jimblebar VN Habitat Disturbance FY2024

6.3 Revised Jimblebar Optimisation Project

BHP prepared the Revised Validation Notice to revise offset commitments and to identify additional disturbance required for new activities and infrastructure. New infrastructure and activities included in the Revised Validation Notice include a solar project, Jimblebar enabling works for future beneficiation, train load out replacement, Jimblebar communications and Jimblebar east enabling works.

The Revised Validation Notice did not reassess or change the activity described in the previous Validation Notice. The revised Jimblebar Optimisation Project Validation Notice was published on 24 August 2023 and was in effect from 25 September 2023. The following section reports on the reporting period from 25 September 2023 to 30 June 2024, following the Revised Validation Notice coming into effect. The Revised Validation Notice requires clearing of up to 1,042 ha. This is in addition to the 2,000 ha of clearing identified in the previous Validation Notice (Section 0).

Note that Jimblebar Significant Amendment Validation Notice was first published for public comment in February 2024 and will become effective in September 2024. This will be reported on in the FY2025 reporting period AER.

6.3.1 Validation Notice Deviations

No non-compliances (deviations) from the Revised Validation Notice (August 2023) were identified during the reporting period. The Revised Validation Notice documents an amended performance target which covers a two-year reporting period. This report will provide the compliance assessment against the first year of reporting (FY2024) and will provide a complete reporting period in the FY2025 SEA AER report.

6.3.2 Program Matter Monitoring and Outcomes

The monitoring required to be completed during the reporting period is outlined in Table 6-11. Monitoring results of the Ghost Bat monitoring program are discussed in Section 6.3.3.1.

Table 6-11 Program Matter Monitoring Requirements for FY2024 Reporting Period

Species	Monitoring	Parameters	Timing	Performance Targets	Applicable Program Matter Outcome
Ghost Bat	Monitoring Ghost Bat presence and usage of the activity area. Proposed monitoring is as follows: • Category 2 roosts (CJIM-03 and CNIN-01) at least 6 monthly • Category 3 roosts (CNIN-01, CNIN-13, CJIM-09) at least yearly • Category 4 roosts (CJIM-03, CJIM-05, CJIM-06, CJIM-08, CJIM15, CJIM17, CJIM-20, at least two yearly (all pending safe access, heritage and tenure restrictions).	Presence of Ghost Bat.	Six monthly to two yearly monitoring.	Presence or evidence of presence of Ghost Bat at one or more Ghost Bat roosts over two years of monitoring.	No loss (or maintain) Ghost Bat colony(s) as a result of Program activities.

* Note: During the Validation Notice review completed in August 2023, there was an administrative error and CNIN-01 should be CNIN-03 (category 2 roost).

6.3.3 Population Monitoring

Based on the Ghost Bat monitoring conducted in the FY2024 reporting period, BHP consider the Project Matter Outcomes have been achieved:

> *Minimise loss of critical and supporting habitats of the Ghost Bat as a result of Program Activities within the SAA*
> *No loss (or maintain) Ghost Bat colony(s) as a result of program activities*

Ghost Bat monitoring results are discussed in the following sections.

6.3.3.1 Ghost Bat Monitoring

Sampling

In FY2024, three further field trips were undertaken to determine presence/absence of Ghost Bats in caves within or adjacent to the activity in line with the monitoring conditions of the Revised Validation Notice. Cave visiting frequencies outlined within the Validation Notice (Table 6-12) were achieved within the FY2024 reporting period.

February 2024

During field trip one (21 to 26 February 2024), seven out of the twelve caves were visited. No scats were collected, or Ghost Bats observed during the field trip.

April 2024

During field trip two (22 to 26 April 2024), eight of the twelve caves were visited. Ghost Bat scats were collected at CNIN-01 and CNIN-03. Results from the scat hormone and genetic analysis had not been received at the time of AER reporting. Trapping was conducted at three caves (CJIM-03, CNIN-01 and CNIN-03), however no Ghost Bats were caught.

June 2024

During field trip three (11 to 14 June 2024), six out of the twelve caves were visited. No scats were collected, or Ghost Bats observed during the field trip.

Table 6-12 Jimblebar caves monitored during FY2024 reporting period

Cave ID	Roost Type	Visitation Frequency	Feb 2024	Apr 2024	Jun 2024
CJIM-01	Category 4	Two yearly			
CJIM-03	Category 2	Six monthly	✓	✓	✓
CJIM-05	Category 4	Two yearly	✓	✓	✓
CJIM-06	Category 4	Two yearly			
CJIM-08	Category 4	Two yearly			
CJIM-09	Category 3	Yearly	✓		✓
CJIM-15	Category 4	Two yearly	✓	✓	✓
CJIM-17	Category 4	Two yearly	✓	✓	✓
CJIM-20	Category 4	Two yearly	✓	✓	
CNIN-01	Category 3	Yearly		✓	
CNIN-03	Category 2	Six monthly	✓	✓	✓
CNIN-13	Category 3	Yearly		✓	

Ultrasonic recordings

Bat call detection was conducted via ultrasonic monitoring across several caves during the FY2024 reporting period. Analysis of the data found Ghost Bat calls at the following caves:

- CNIN-09 (September 2023, November 2023, December 2023 and January 2024)
- CJIM-05 (November 2023)
- CNIN-03 (November and December 2023).

Further ultrasonic data has been collected and is being analysed concurrently to this report.

6.3.4 Management Commitments

An update on the management commitments is outlined below.

Implement feral cat management

Opportunistic sightings of Feral cats are reported to the Site Environmental Specialist and/or documented in the BHP Event Management System. There have been no Feral cat sightings or incidents reported during the FY2024 reporting period.

Cameras for monitoring of feral cats have been deployed during the FY2024 reporting period to monitor Feral cat presence at the entrances of the following caves: CJIM-03, CJIM-09, CNIN-03 and CNIN-01. One Feral cat was observed at CNIN-03. Further captured data is pending review and will be reported in the next financial years report.

Implement fire management

Hot work management procedures are in place through the BHP permitting system to ensure that any hot works across site comply with the BHP procedures and standards.

Across Jimblebar, fire breaks are implemented around powerline corridors, water pipelines, conveyors, and infrastructure to ensure that fire risks are managed appropriately and to reduce the risk of fire to the Ghost Bat population. Fire break management is maintained through work orders which are scheduled between six to twelve months annually.

Designated smoking areas are available at crib huts and administrative buildings to ensure smoking is contained to specified areas and to reduce the risk of fire threats across site.

Restrict barbed wire usage

Barbed wire has been limited onsite to areas where required by legislation (i.e. around the ANFO facility). Conditions are also applied through the PEAHR system to ensure that barbed wire is avoided, and where it is required to be used, only single strand barbed wire is used, with bat deflectors installed to deter Ghost Bats.

Restrict human access to high value Ghost Bat caves

Monitoring of Ghost Bat caves was completed outside of the Ghost Bat breeding season (September to January), with a total of three field surveys completed in February, April and June 2024.

6.3.5 Land Disturbance Reconciliation

Given that all proposed clearing was consolidated in the Revised Validation Notice, disturbance undertaken during the reporting period under the Jimblebar Optimisation Validation Notice is detailed in Table 6-13.

The disturbance of habitats for all the Program Matters is shown in Table 6-13. During the FY2024 reporting period, no category 3 or 4 roosts within the activity area were cleared. Ground disturbing activities are assessed in the PEAHR system to ensure clearing does not exceed specified limits. Given the Validation Notice took effect in September 2023, clearing since this time is the total clearing to date.

Table 6-13 Jimblebar Optimisation Project Revised Validation Notice Disturbance by habitat type

Habitat	Activity disturbance September 2023 to June 2024 (ha)	Total Predicted Disturbance (ha)
Ghost Bat		
Critical roosting habitat		
Gorge and Gully	0	<1 ha
Critical foraging habitat		
Major Drainage Line	11.57	233
Minor drainage line	13.30	12
Mulga Woodland	2	1,465
Drainage Area/Flood Plain	5.42	335
Sand Plain	8.44	407
Stony Plain	0.29	160
Total	*41.02*	*2,612*

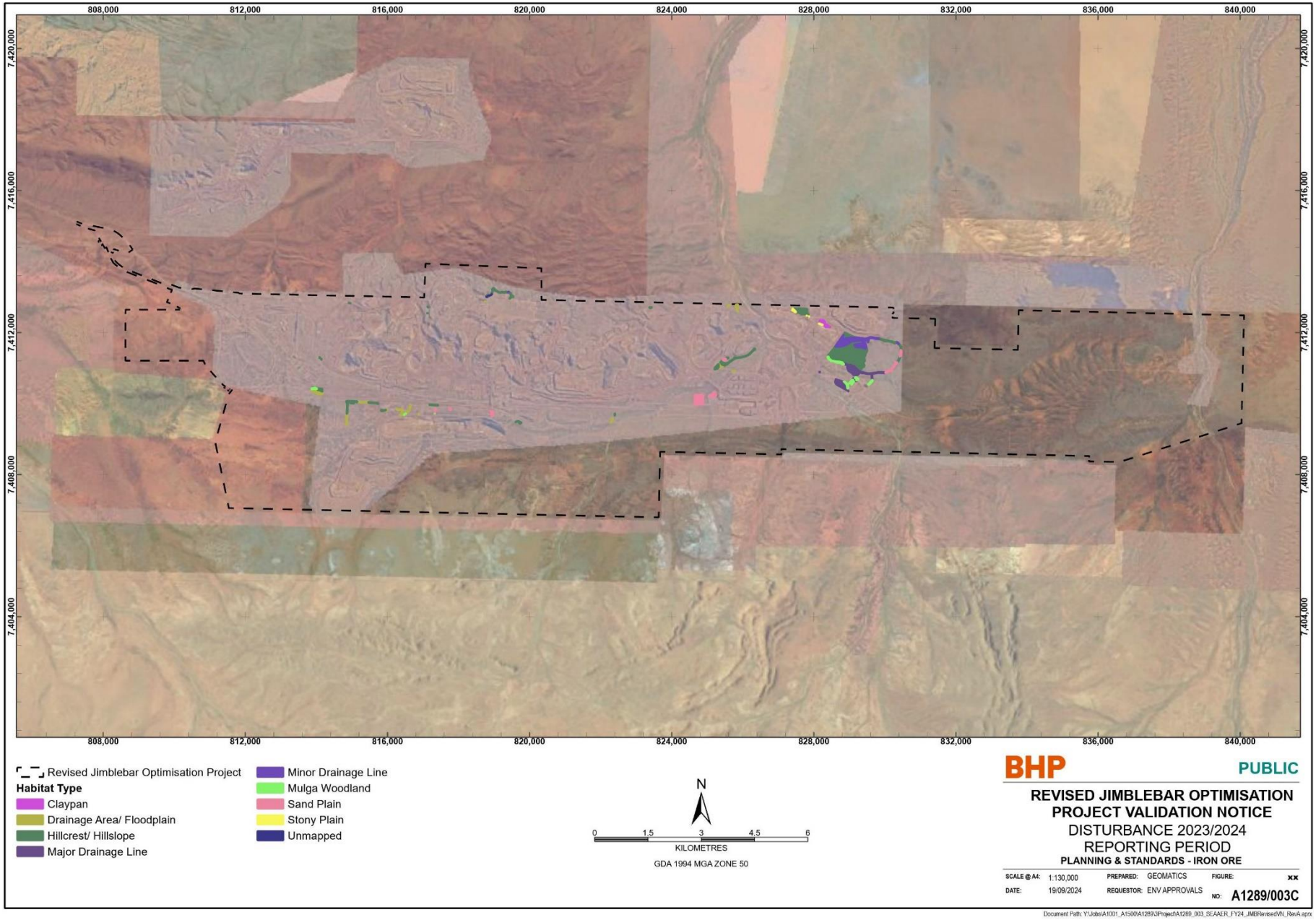

Figure 6-9 Revised Jimblebar VN Habitat Disturbance FY2024

6.4 Mooka Rail Siding

The Mooka Rail Works are located approximately 22 km south of the town of Port Hedland, immediately adjacent to BHP's Newman Main Rail Line, in the Pilbara region of Western Australia. The Newman Rail Line supports the WAIO Supply Chain by connecting BHP's Iron Ore mines at Newman, Jimblebar, Eastern Ridge, Yandi and Mining Area C with Port Hedland. Ore is transported by rail to Port Hedland, then shipped overseas from Port Hedland at the BHP's Nelson Point and Finucane Island facilities.

The Mooka Rail Works are required to upgrade existing rail infrastructure and ancillary facilities on a section of the Newman Rail Line, known as 'Mooka'.

Infrastructure includes:

- construction of five new rail sidings (low-speed track sections) totalling approximately 5 km in length
- re-alignment of an existing rail siding including tie-ins
- construction of level crossings, access roads, derailers, signalling infrastructure and on-tracking points to facilitate the operational use of the rail infrastructure
- construction and relocation of supporting infrastructure and underground services
- geotechnical works
- decommissioning and closure.

In April 2023, BHP published the draft Mooka Rail Works Validation Notice for public comment, which related to geotechnical works and a number of upgrades to infrastructure and ancillary facilities on a section of the Newman Railway known as 'Mooka'. The Validation Notice was subsequently published as final on 14 June 2023 and took effect from 4 July 2023.

The Validation Notice was required due to the Notifiable Action trigger being met for Northern Quoll. Numerous records of Northern Quoll exist adjacent to the Activity Area and some exist within the Activity Area.

The Mooka Rail Works Activity commenced as planned in August 2023. During the reporting period, the Notifiable Action has substantively commenced, with the majority of bulk earthworks and civil construction works being completed. The current project schedule is for all construction, commissioning, rehabilitation and demobilisation of equipment to be completed within the five-year commitment made in the Validation Notice.

6.4.1 Validation Notice Deviations

No exceedances or deviations from the Mooka Rail Works Validation Notice were identified during the reporting period.

6.4.2 Program Matter Monitoring and Outcomes

Monitoring required to be completed during the reporting period is detailed in Table 6-14. Monitoring results are discussed in the following sections.

Table 6-14 Program Matter Monitoring Requirements for FY2024 Reporting Period

Species	Monitoring	Parameters	Timing	Performance Targets	Applicable Program Matter Outcome
Northern Quoll	Biannual monitoring at Sites 1, Site 1c, Site 2 and Site 2C. Monitoring to be undertaken twice a year. Techniques will include motion camera footage and targeted searches.	Presence or evidence of individuals	Six monthly monitoring.	Presence or evidence of Northern Quoll at one or more sites over two years of monitoring.	Minimise loss of critical and supporting habitats of the Northern Quoll as a result of Program Activities within the SAA, AND No loss (or maintain) Northern Quoll colony(s) as a result of program activities.
	Land disturbance reconciliation	Clearing does not exceed 23 ha Sand Plain	Annual land disturbance reconciliation.	No unauthorised disturbance beyond the activity area.	No loss of Northern Quoll habitat that supports a high density population as a result of Program activities

6.4.3 Population Monitoring

Monitoring of Northern Quoll populations was required during the reporting period as per the Validation Notice.

Based on the results of monitoring conducted during the FY2024 reporting period, BHP considers that the following Program Matter Outcomes have been achieved for the FY2024 reporting period:

Minimise loss of critical and supporting habitats of the Northern Quoll as a result of Program Activities within the SAA

No loss (or maintain) Northern Quoll colony(s) as a result of program activities.

Monitoring results for the Northern Quoll are discussed in the following sections.

6.4.3.1 Northern Quoll Monitoring

Methodology

In FY2024, two monitoring surveys were undertaken at four sites (two impact and two control sites), in the post-dry season (October 2023) and post-wet season (May 2024). The data collected is an estimate of individuals at each site, which will ultimately test the abundance of the Northern Quoll between Quarry and Control sites (refer to Table 9). The Northern Quoll monitoring sites included:

- Quarry 1 (Q1)
- Quarry 1 Control (Q1C)
- Quarry 2 (Q2)
- Quarry 2 Control (Q2C).

Five long-term motion cameras were installed at each site for four weeks. This was repeated over two monitoring seasons. Post-dry season (October 2023) coincided with the male dispersal, post breeding season. Post-wet season (May 2024) coincided with the start of the breeding season.

An additional five cameras targeting feral predator species (Feral cat and Red Fox) were installed at each site for four weeks, being repeated seasonally. Cameras were focussed on tracks and areas that feral predators are more likely to utilise. Additionally, active searches were conducted for any secondary evidence of Northern Quoll and feral predators. This included searching for tracks, remains, or scats, with any evidence of presence recorded.

Motion camera images were assessed with all recorded vertebrate fauna identified to species level where possible. Northern Quoll were individually identified based on the site, time and date of images captured, and their unique spot markings. Feral predators were also identified.

An estimation of Northern Quoll and feral predator abundance was measured by identifying the number of individuals recorded at each site.

Results

Individual Northern Quoll were identified from a total of 385 motion camera visits over the two monitoring periods. Post-dry monitoring resulted in a total of 15 Northern Quoll individuals across three of the four sites. Site Q2 recorded the highest number of individuals (13) identified from 244 motion camera visits. No Northern Quoll were detected at site Q1, one individual was recorded at control site Q1C, and one individual was recorded at Q2C (Table 6-15). One scat was collected from Q2 during camera installation while multiple scats were recorded at site Q1C during the post-dry set up, including a scat pile (Table 6-16.

Table 6-15 Northern Quoll abundance over two years of monitoring

Site	2023		2024	
	Post dry	Post wet	Post dry	Post wet
Q1	0	0	0	0
Q1C	1	1	1	1
Q2	5	10	5	8
Q2C	1	1	0	1
Totals	**19**		**15**	

Identification of individual Northern Quolls revealed that individual NQ3 recorded at site Q1C, was recorded most often (a total of 79 times), on four of the five Northern Quoll cameras. Northern Quoll were recorded most often on Northern Quoll cameras set in a downward facing position and were recorded on five cameras feral predator activity.

The number of Northern Quoll individuals recorded has decreased from 2023 to 2024, however presence was recorded from the same number of sites (one Quarry site and two Control sites, Table 6-17). Site Q1 has been occupied by the lowest abundance of Northern Quoll (since baseline), whilst Q2 has been occupied by the highest abundance since monitoring has begun.

Table 6-16 Results of Camera Trapping – Northern Quoll Records

Site	MC Number	Northern Quoll Individual ID (Post-dry)	Northern Quoll Individual ID (Post-wet)
Quarry 1 (Q1)	N/A	No records	No records
Quarry 1 Control (Q1C)	Q1C-MC1	No records	NQ3
	Q1C-MC3	NQ3	NQ3
	Q1C-MC4	NQ3	NQ3
	Q1C-MC5	NQ3	NQ3
Quarry 2 (Q2)	Q2-MC1	NQ2	NQ12, NQ8, NQ5, NQ11
	Q2-MC2	NQ1, NQ5	NQ11, NQ5, NQ14
	Q2-MC3	NQ1, NQ2	NQ11, NQ5
	Q2-MC4	NQ6	NQ5
	Q2-MC5	NQ4, NQ5	NQ11, NQ5
	Q2-FP1	No records	NQ10
	Q2-FP2	NQ5	NQ13
	Q2-FP3	No records	NQ9
	Q2-FP5	No records	NQ8
Quarry 2 Control (Q2C)	Q2C-MC4	No records	NQ15

6.4.3.2 Feral Predator Monitoring

Monitoring resulted in a total of ten individual feral predators recorded. Two Feral cats were recorded at sites Q1 and Q1C, while one Feral cat was recorded at site Q2. A total of three Feral cats were recorded at site Q2C. A Fox was recorded at Q1C (Table 6-17).

Feral predators were recorded from a total of 70 motion camera visits. Individual Tabby 1 at Q1 was recorded most often (a total of 11 times) over two phases. Motion camera triggers were highest at Control site Q1C over two phases with a total of 24. This is due to the presence of a kitten that was recorded at the site over multiple days, which indicates the presence of a breeding female. A kitten carcass was also recorded at site Q2C.

Post-wet monitoring results indicated an increase in feral predator abundance across most sites except for site Q1C where feral predator abundance decreased. Based on camera trapping data, the control sites recorded the greatest number of individuals.

Control sites recorded the greatest number of feral predators during the post-dry survey in 2024, which is in contrast to the previous year where numbers were greatest during the post wet season (Table 6-18).

Table 6-17 Results of Camera Trapping – Feral Predator Records

Site	MC Number	Feral Predator	
		Feral cat	Red Fox
Quarry 1 (Q1)	Q1-FP3	Tabby 1	-
	Q1-MC3	Tabby 1	-
	Q1-FP1	Tabby 6	-
Quarry 1 Control (Q1C)	Q1C-FP1	Tabby 2	-
	Q1C-FP2	Tabby 2	-
	Q1C-FP5	-	Fox 1
	Q1C-MC2	Black Cat 5 & Tabby 2	-
	Q1C-MC3	Tabby 2	-
	Q1C-MC4	Tabby 2	-
	Q1C-MC5	Tabby 2	-
Quarry 2 (Q2)	Q2-MC5	-	-
	Q2-FP1	Tabby 3	-
Quarry 2 Control (Q2C)	Q2C-MC4	Tabby 4	-
	Q2C-FP1	Tabby 4	-
	Q2C-FP3	Tabby 5	-
	Q2C-FP4	Tabby 4, Tabby 7	-
	Q2C-FP5	Tabby 4	-

Table 6-18 Feral predator abundance over two years of monitoring

Site	2023*		2024	
	Post dry	Post wet	Post dry	Post wet
Q1		1	1	1
Q1C	1		3	
Q2			1	1
Q2C		1	2	1
Totals	**3**		**10**	

*feral predator abundance in 2023 is based on Northern Quoll cameras. Additional feral predator specific cameras were installed in 2024.

Secondary Evidence

One Feral cat scat was identified during monitoring at site Q1 during the post-dry camera installation. Additional evidence recorded during Phase 2 includes the skull of a Feral cat of unknown age at site Q1 and the carcass of a kitten at site Q2C. Location of the secondary evidence collected are shown in Table 6-19 and Figure 6-10.

Table 6-19 Feral Predator Secondary Evidence recorded at each site

Site	Feral cat
Quarry 1 (Q1)	1 x scat, 1 x skull
Quarry 1 Control (Q1C)	
Quarry 2 (Q2)	
Quarry 2 Control (Q2C)	1 x carcass

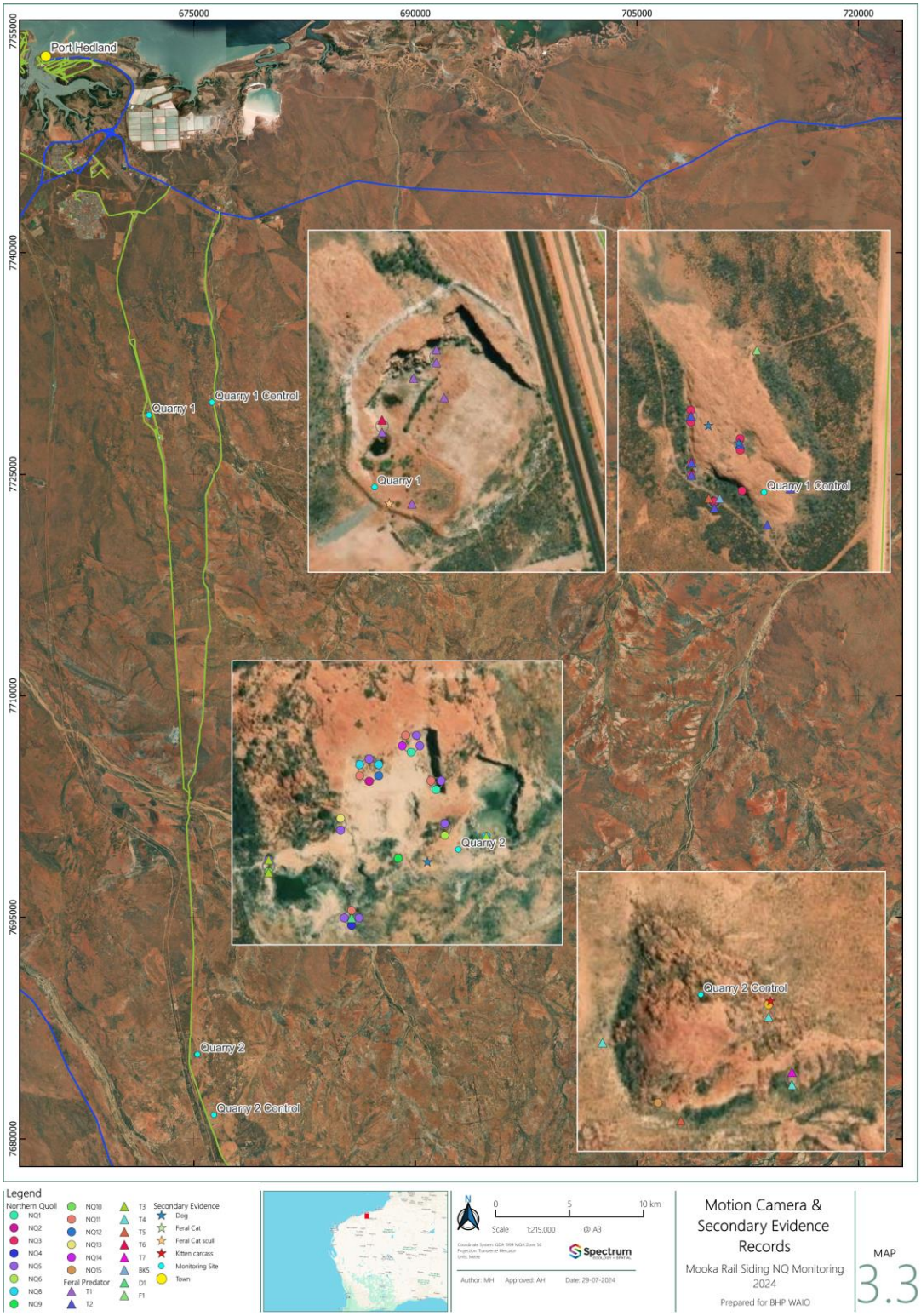

Figure 6-10 Mooka Northern Quoll and Feral Predator Records

6.4.4 Management Commitments

An update on the management commitments is outlined below.

Granite domes utilised by Northern Quoll

No updates during the reporting period.

Fire control/management

No updates during the reporting period.

Feral animal control

A Feral cat trapping programme was not required this financial year, given that the opportunistic sighting was made outside of the Mooka Validation Notice boundary. There are no other updates to report this financial year.

6.4.5 Offsets

BHP provided financial contributions to the PEOF for the loss of 23 ha of supporting habitat for the Northern Quoll, at the commencement of the Validation Notice in July 2023.

6.4.6 Land Disturbance Reconciliation

The clearing commitment which forms part of this Validation Notice is provided in Table 6-20, including disturbance undertaken during the reporting period. During FY2024, all ground disturbance was approved through BHP's internal PEAHR process. Given the Mooka Validation Notice took effect in July 2023, the amount of clearing from July 2023 to June 2024 is the total extent of disturbance under this Validation Notice.

Table 6-20 Mooka Rail Works Disturbance by habitat type

Habitat	Activity disturbance between July 2023 to June 2024 (ha)	Total Predicted Disturbance (ha)
Northern Quoll		
Sand Plain	5.76	23

Figure 6-11 Mooka Rail Siding VN Habitat Disturbance FY2024

6.5 Yeerabiddy Rail Siding

The Yeerabiddy Rail Works are located immediately adjacent to the Mining Area C (MAC) Rail Line at Yeerabiddy approximately 13 km north of the MAC mine site, in the Pilbara region of Western Australia. The MAC Rail Line supports the WAIO Supply Chain by connecting the Iron Ore mines at MAC and South Flank Mine to the BHP Rail network.

The Yeerabiddy Rail Works are required to meet the capacity of the MAC and South Flank Mines and will improve efficiency and rail supply chain capacity.

Infrastructure proposed and approved within the Validation Notice 'Activity Area' includes:

- two additional rail sidings approximately 1.5 km and up to 5 km in length
- level crossings, signals and associated infrastructure
- access roads to maintain current level of access
- other ancillary facilities to support the above works.

In August 2023, BHP submitted and published the Yeerabiddy Rail Works Validation Notice for public comment. The Yeerabiddy Validation Notice Rev 1 was finalised on 14 September 2023 and Rev 2 was finalised on 18 September with updates to the disturbance remaining in Table 2.1. The Validation Notice was effective from 12 October 2023.

Works on the Yeerabiddy Rail Works commenced as planned in December 2023 and involved set up of office areas and laydown areas at the southern end of the activity area. Between January 2024 and the end of June 2024, the Notifiable Action had substantively commenced, with the majority of bulk earthworks and civil construction works being completed. The current project schedule is for all construction, commissioning, rehabilitation and demobilisation of equipment to be completed within the five-year commitment made in the Validation Notice.

6.5.1 Validation Notice Deviations

No exceedances or deviations from the Yeerabiddy Rail Works Validation Notice were identified during the reporting period.

6.5.2 Program Matter Monitoring and Outcomes

The monitoring required to be completed during the reporting period is outlined in Table 6-21. Monitoring results are discussed in the following sections.

Table 6-21 Program Matter Monitoring Requirements for FY2024 Reporting Period

Species	Monitoring	Parameter	Due Date	Performance Targets	Applicable Program Matter Outcome
Ghost Bat	Proposed monitoring is as follows: • the Category 2 roost (CMIN-03) at least 6 monthly • reference sites including but not limited to CMUD-01, CMUD-10 and CACW-31 (pending safe access, heritage and tenure restrictions).	Ghost Bat presence or evidence	Biannual monitoring	Presence or evidence of presence of Ghost Bat at CMIN-03 over two years of monitoring	Minimise loss of critical and supporting habitats of the Ghost Bat as a result of the activity No loss (or maintain) Ghost Bat colony(s) as a result of program activities

6.5.3 Population Monitoring

6.5.3.1 Ghost Bat Monitoring

Based on the Ghost Bat monitoring conducted in the FY2024 reporting period, BHP considers the two Program Matter Outcomes have been achieved at the Yeerabiddy Rail Works for the reporting period:

> *Minimise loss of critical and supporting habitats of the Ghost Bat as a result of Program Activities within the SAA*
> *AND*
> *No loss (or maintain) Ghost Bat colony(s) as a result of program activities.*

Monitoring results are discussed in the following sections.

Sampling

As MAC and South Flank already have an established Ghost Bat Monitoring program, the Yeerabiddy monitoring locations were included in this program, with the first monitoring event being undertaken in January 2024.

In FY2024, three field trips were undertaken in January, March and May 2024 as part of the scat collection monitoring program to determine presence/absence of Ghost Bats from scat deposits (refer to Table 6-22). Targeted caves included:

- one cave within 500m of the Validation Notice boundary (CMIN-03)
- three reference caves (CMUD-01, CMUD-10 and CTAN - ACW-31).

Of the monitoring completed in these field trips, there have been no scats or evidence of Ghost Bats roosting in CMIN-03. The next monitoring round is scheduled for September 2024.

The absence of any evidence of Ghost Bat use is consistent with findings for many of the other approximately 34 roosts consistently monitored in the Central Pilbara by BHP. This is also consistent with conservation advice for the species where it is recognised that Ghost Bats move between a number of caves seasonally or as dictated by weather conditions and require a range of cave sites. Category 2 roosts have been defined (Bullen 2021) with having occupancy as low as 25% of the time. CMIN-03 was categorised by Biologic from a 2010 survey as a high value day roost, based on the presence of scats and cave structure only. The category was then converted to ratings adopted by DCCEEW in 2022 with the application of the precautionary principal. No time series data based on observations or ultrasonic recordings has been collected prior to the commencement of monitoring. This 24-month monitoring program will establish baseline occupancy for this roost.

Table 6-22 VN Program Matter Monitoring Requirements for FY2024 Reporting Period

Cave	Location	Jan-24		Mar–24		May-24	
		No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present	No. of Scats present	No. of Bats Present
Yeerabiddy Rail Works Site							
CMIN-03	Yeerabiddy	0	0	0	0	0	0
Reference Sites							
CMUD-01	Mudlark Well	NE	NE	NE	NE	0	0
CMUD-10	Mudlark Well	180	0	0	0	2	0
CTAN-31 (ACW-31)	Tandanya	NE	NE	9	0	20	0

6.5.4 Management Commitments

An update on the management commitments is outlined below:

Implement Feral Cat Management

Opportunistic sightings of Feral cats are reported to the Site Environmental Specialist and/or documented in the BHP Event Management System. There have been no Feral cat sightings within the Yeerabiddy Activity Area or within the vicinity of CMIN-03 during the FY2024 reporting period. Camera traps targeting cats, are placed at roosts more regularly occupied by the local population of Ghost Bats. Traps at roosts SF05, SF08, SF14, AC01, AC09 and AC17 have collectively recorded cats on 25 occasions in the last seven months. Records at a single roost per month are commonly low for these roosts suggesting that Feral cats are not targeting roosts but rather moving through the area with an opportunistic feeding strategy.

Table 6-23 Estimated Total Detections (accounting for repeat detections between A & B cameras)

Estimated Total Detections (accounting for repeat detections between A & B cameras)							
	Mining Area C			South Flank			
	AC01	AC09	AC17	SF05	SF08	SF14	Total detections per month
Felis catus							
January							0
February		2					2
March						1	1
April	1	4				3	8
May	1					1	2
June	2	1				5	8
July		3				1	4
Total detections per site	**4**	**10**	**0**	**0**	**0**	**11**	**25**

Implement Light Spill Management

No night shift works occurred during FY2024, therefore, no light sources were installed in areas that would cause light spill into the gorge where CMIN-03 is located.

Implement Fire Management

Hot work management procedures are in place through the BHP permitting system to ensure that any hot works across site comply with BHP procedures and standards.

Due to the expanse of Rail Operations, fire breaks are generally not installed outside of the rail access road that runs parallel to the railway line. BHP's Bushfire Management Procedure stipulates that fire breaks are to be maintained not less than 3 m from rail infrastructure where practicable and is a critical control for extreme weather. By design, the railway line and access roads act as a continuous firebreak.

The only activities requiring hot works management under BHP's Hot Work Permit process in FY2024 were:

- equipment maintenance undertaken within designated maintenance areas, which have been newly cleared for this project and do not contain vegetation
- welding of rail for siding construction which occurred within newly cleared areas which do not have vegetation within 10 m in any direction of the works.

A designated smoking area is available at the project office and within each onsite work location to ensure smoking is contained to specified areas and to reduce the potential risk of fire threats across site.

Restrict human access to high value Ghost Bat caves

The first round of biannual Ghost Bat monitoring occurred in January 2024 at cave CMIN-03. The cave is outside of the Yeerabiddy Project Activity Area and as such, the works remained at least 140 m from the cave as per the approved BHP PEAHR boundary.

6.5.5 Offsets

BHP provided financial contributions to the PEOF for the full offset commitment at the commencement of the Validation Notice in October 2023. Offsets applied to the loss of 60.02 ha of critical roosting and foraging habitat for the Ghost Bat, to achieve this Program Matter Objective.

6.5.6 Land Disturbance Reconciliation

The clearing commitments which form part of this Validation Notice are presented in Table 6-23, including disturbance undertaken by habitat type during the reporting period. During FY2024, all ground disturbance was approved through BHP's internal PEAHR process. Given the Yeerabiddy Validation Notice took effect in October 2023, the clearing from October 2023 to June 2024 is the total clearing to date.

Table 6-24 Yeerabiddy Rail Works Disturbance by habitat type

Habitat	Activity disturbance between October 2023 to June 2024 (ha)	Total Predicted Disturbance (ha)
Ghost Bat		
Critical roosting habitat		
Breakaway/Cliff	0	0.34
Critical foraging habitat		
Hill Crest/Hill Slope	1.77	8.46
Minor Drainage Line	0.07	3.01
Drainage Area/Flood Plain	8.93	21.69
Stony Plain	8.57	26.52
Total	***19.33***	***60.02***

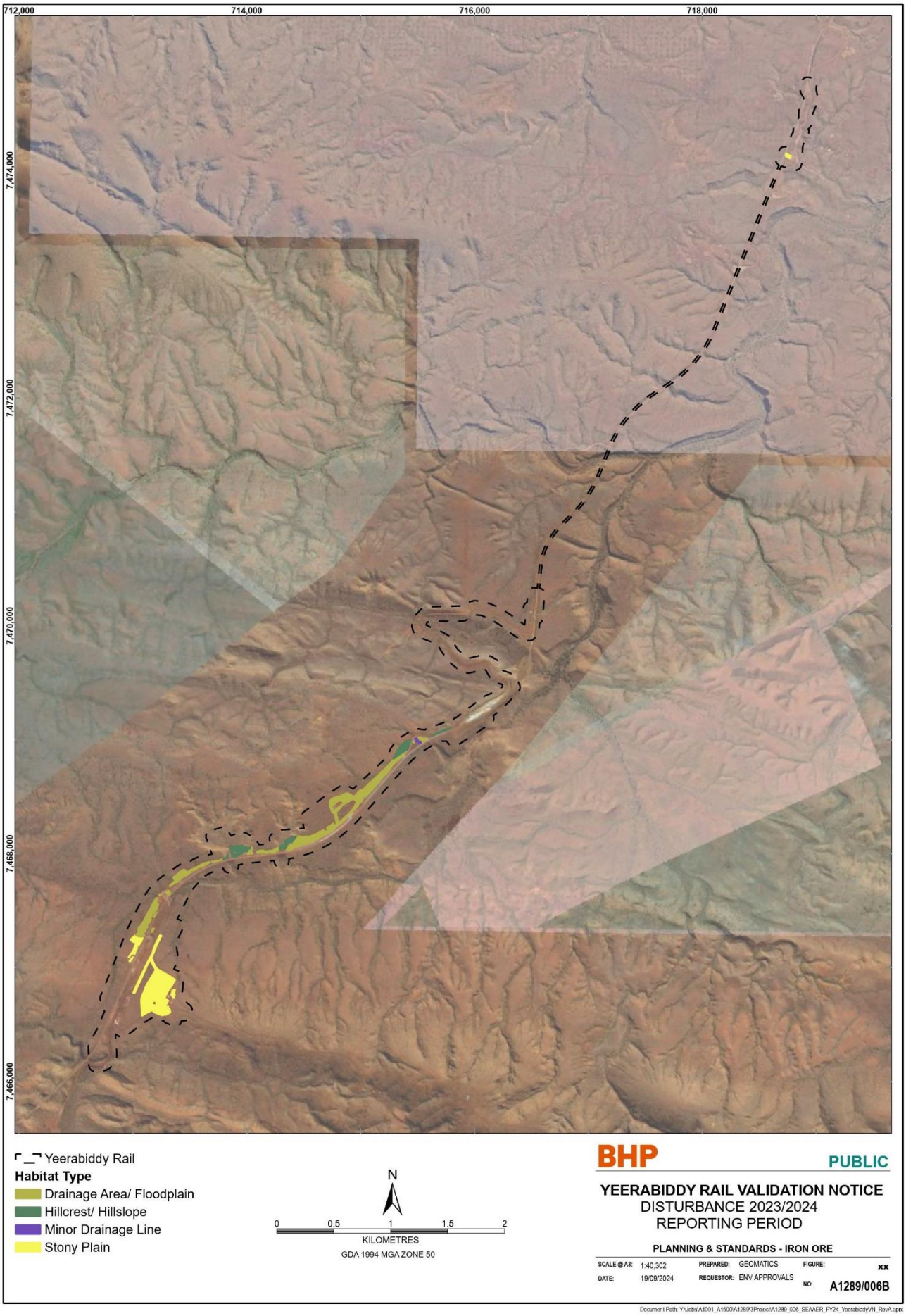

Figure 6-12 Yeerabiddy Rail Siding VN Habitat Disturbance FY2024

6.6 Western Ridge

Western Ridge is located approximately 2 km southwest of the town of Newman, in the Pilbara region of Western Australia. It is located adjacent to the Mt Whaleback mine and Orebody 29/30/35 mine.

Western Ridge was declared a Derived Proposal subject to Ministerial Statement 1105 in September 2023 and the Western Ridge Validation Notice took effect on 19 October 2023. The Western Ridge project includes clearing of up to 4,281 ha within an Activity Area of 7,234 ha for above and below water table mining of four iron ore deposits, overburden storage areas, primary crusher overland conveyor, haul and access roads, stockpiles, dewatering, creek diversions, discharge of surplus water and associated mine infrastructure and activities.

The Western Ridge project is in execution phase, with topsoil stripping underway, as at July 2024.

6.6.1 Validation Notice Deviations

No deviations were reported in the reporting period.

6.6.2 Program Matter Monitoring and Outcomes

The monitoring required to be completed during the reporting period is outlined in Table 6-25. Monitoring results are discussed in the following sections.

Table 6-25 Monitoring undertaken in the reporting period

Species	Monitoring	Parameter	Due Date	Performance Targets	Applicable Program Matter Outcome
Ghost Bat	Quarterly monitoring at retained caves CWER-01, CWER-03, CWER-04, cWER-10 and CWER-17, using techniques such as scat collection and analysis, motion camera footage and microclimate monitoring. Annual monitoring at CWER-07, CWER-09, CWER-14 and CWER-20 providing safe access is confirmed. Techniques may include but are not limited to scat collection and microclimate monitoring.	Presence or evidence of Ghost Bat presence	Quarterly monitoring at CWER-01, CWER-03, CWER-04, CWER-10 and CWER-17 Annual monitoring at CWER-07, CWER-09, CWER-14, CWER-20	Presence or evidence of presence of Ghost Bat at one or more Ghost Bat caves over one year of monitoring	Minimise loss of critical and supporting habitats of the Ghost Bat as a result of Program Activities within the SAA **AND** No loss (or maintain) Ghost Bat colony(s) as a result of program activities
Pilbara Olive Python	Annual monitoring in the wet season of retained Gorge/Gully habitat within the Activity Area and/or temporary surface water features located within the Activity Area and Nankunya (outside of activity area). Exact sites are to be confirmed. Methods may include but are not limited to targeted searches, genetic analyses of scats/sloughs/tissue and eDNA markers in water features.	Presence or evidence of Pilbara Olive Python	Annual monitoring in wet season	Presence or evidence of presence of Pilbara Olive Python over one year of monitoring within the Activity Area and in critical habitat within 500m of the Activity Area	Minimise loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA **AND** No loss (or maintain) Pilbara Olive Python population(s) as a result of Program activities

6.6.3 Population Monitoring

Monitoring of Ghost Bat to date (described below) demonstrates that the following Program Matter Outcomes for Ghost Bat have been achieved for the FY2024 reporting period:

> *Minimise loss of critical and supporting habitats of the Ghost Bat as a result of Program Activities within the SAA*
>
> *AND*

No loss (or maintain) Ghost Bat colony(s) as a result of program activities

Monitoring of Pilbara Olive Python similarly demonstrates that the following Program Matter Outcomes for Pilbara Olive Python have been achieved for the FY2024 reporting period:

Minimise loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA
AND
No loss (or maintain) of Pilbara Olive Python population(s) as a result of Program activities.

Monitoring results for Ghost Bat and Pilbara Olive Python are discussed in the following sections.

6.6.3.1 Ghost Bat Monitoring

Quarterly Ghost Bat monitoring has been carried out throughout the reporting period, as identified in Table 6-26 below.

Table 6-26 Ghost Bat monitoring events in the reporting period

Cave	Monitoring and Results				
	29 June to 3 July 2023	8 to 12 September 2023	21 to 26 February 2024	22 to 26 April	11 to 14 June 2024
CWER-01	Ultrasonic and video camera monitoring. Ghost Bat scats observed and collected.	Ultrasonic and video camera monitoring.	Ultrasonic and video camera monitoring. Two passive motion cameras placed at entrance for cat monitoring.	Ultrasonic and video camera monitoring. Cat monitoring via motion cameras. Trapping conducted (for tagging studies), however no ghost bats were caught.	Ultrasonic and video camera monitoring. Cat monitoring via motion cameras.
CWER-03	Ultrasonic and video camera monitoring. Ghost Bat scat observed and collected.	Ultrasonic and video camera monitoring.	Ultrasonic and video camera monitoring. Two passive motion cameras placed at entrance for cat monitoring.	Ultrasonic and video camera monitoring. Cat monitoring via motion cameras. Trapping conducted (for tagging studies), however no ghost bats were caught. Ghost bat scats observed and collected.	Ultrasonic and video camera monitoring. Cat monitoring via motion cameras.
CWER-10	No Ghost Bat presence detected.	No Ghost Bat presence detected.	No Ghost Bat presence detected.	No Ghost Bat presence detected.	No Ghost Bat presence detected.
CWER-16	Cave unsafe to enter, only ultrasonic monitoring.	Cave unsafe to enter, only ultrasonic monitoring.	Cave unsafe to enter, only ultrasonic monitoring.	Cave unsafe to enter, only ultrasonic monitoring.	Cave unsafe to enter, only ultrasonic monitoring.
CWER-17	Video camera monitoring. Ghost bat scats observed.	Video camera monitoring. Ghost bat scats observed and collected.	Ultrasonic and video camera monitoring. Two passive motion cameras placed at entrance for cat monitoring.	Ultrasonic and video camera monitoring.	Ultrasonic and video camera monitoring.

Note, microclimate monitoring has been ongoing at all of the abovementioned caves, with the exception of CWER-16 as it is unsafe to enter.

Data recorded from the ultrasonic recorders in the first two monitoring events in July 2023 and September 2023 detected the presence of Ghost Bats (including roosting individuals) at three caves including CWER-01, CWER-03 and CWER-16.

Monitoring data from monitoring events between October 2023 and June 2024 has not yet been collated and provided in a report.

Reporting of Ghost Bat monitoring data is collated into an annual report. Preparation of the annual report commences after the final monitoring event of the calendar year. The report for the 2023-2024 monitoring was in preparation at the time of AER reporting.

6.6.3.2 Pilbara Olive Python

- eDNA sampling was carried out in April 2024. Pilbara Olive Python was detected in four samples across the two locations within Nankunya.
- Wet season monitoring was undertaken in February 2024 with no new Pilbara Olive Python encountered during the monitoring. Radio tracking resulted in relocations of two individuals, including one recapture (active in rock pool during daytime); POP 216 and POP 211.
- Additional monitoring was undertaken in December 2023 and June 2024:
  - December 2023: three new individuals were located and radio transmitters were implanted (POP 219, 221 and 220). POP 220 already possessed a Pit-tag and represents a recapture. POP 211 was relocated.
  - June 2024: five POP were relocated; POP 201, 211, 216, 220 and 221.
- POP 212 is the only individual with a radio transmitter that was not relocated during the monitoring events in this AER reporting period. This individual was last recorded in May 2023 (battery life expected failure after December 2024).

6.6.4 Management Commitments

An update on the management commitments is outlined below.

Implement feral cat management:

Feral cat management processes have been identified within the conditions allocated to the internal land disturbance management system. All interactions with feral animals are reported to allow for management practices to be specific to the areas of interactions.

Implement fire management

BHP has implemented procedures to ensure high risk tasks, such as hot works, are not carried out at high risk times and that all fire notifications from the relevant authorities are implemented. Emergency services are available to support in the event of any fire incident.

Restrict barbed wire usage:

Restricted use of barbed wire has been managed through the internal land use permitting system. Infrastructure that has been procured for the management of dust emissions have been designed and constructed to ensure no barbed wire is utilised on the fencing around the monitoring unit.

Restrict human access to high value Ghost Bat caves:

High value bat caves have been identified within the company's spatial systems which are utilised for the internal PEAHR permits. Buffers application to high value bat caves are recorded in these systems indicated and have been excluded from all permits, in accordance with the avoidance commitments made in the Validation Notice.

6.6.5 Land Disturbance Reconciliation

The clearing commitments which form part of this Validation Notice are presented in Land disturbance activities for construction commenced in May 2024. Land disturbance is managed through an internal PEAHR process which allows for management of clearing within approved limits and avoidance of habitats, where applicable. Given that the validation Notice became effective in October 2023, the clearing reported from July 2023 to June 2024 is the total clearing to date.

Table 6-27 Western Ridge Disturbance by habitat type

Habitat	Activity disturbance between October 2023 to June 2024 (ha)	Total Predicted Disturbance (ha)
Northern Quoll		
Critical denning and foraging habitat		
Gorge/Gully	0.22	108.00
Breakaway/Cliff	0.06	39.00
Total	***0.28***	***147.00***
Supporting foraging habitat		
Hill Crest/Hill Slope	17.86	1,162.70

Habitat	Activity disturbance between October 2023 to June 2024 (ha)	Total Predicted Disturbance (ha)
Stony Plain	51.96	1,469.30
Total	***69.82***	***2,632.00***
Ghost Bat		
Critical roosting habitat		
Gorge/Gully	0.22	108.00
Breakaway/Cliff	0.06	39.00
Total	***0.28***	***147.00***
Critical foraging habitat		
Drainage Area/Floodplain	27.08	379.40
Mulga Woodland	31.37	647.80
Stony Plain	51.96	1,469.30
Minor Drainage Line	0.25	56.00
Total	***83.30***	***2,552.50***
Supporting habitat		
Category 4 roosts	Nil	Five
Pilbara Olive Python		
Critical habitat		
Gorge/Gully	0.22	108.00
Breakaway/Cliff	0.06	39.00
Total	***0.28***	***147.00***
Supporting habitat		
Minor Drainage Line	0.25	56.00
Pilbara Leaf-nosed Bat		
Supporting foraging habitat		
Gorge/Gully	0.22	108.00
Breakaway/Cliff	0.06	39.00
Hillcrest/Hillslope	17.86	1,162.70
Minor Drainage Line	0.25	56.00
Drainage Area/Floodplain	27.08	379.40
Total	***45.47***	***1,745.10***

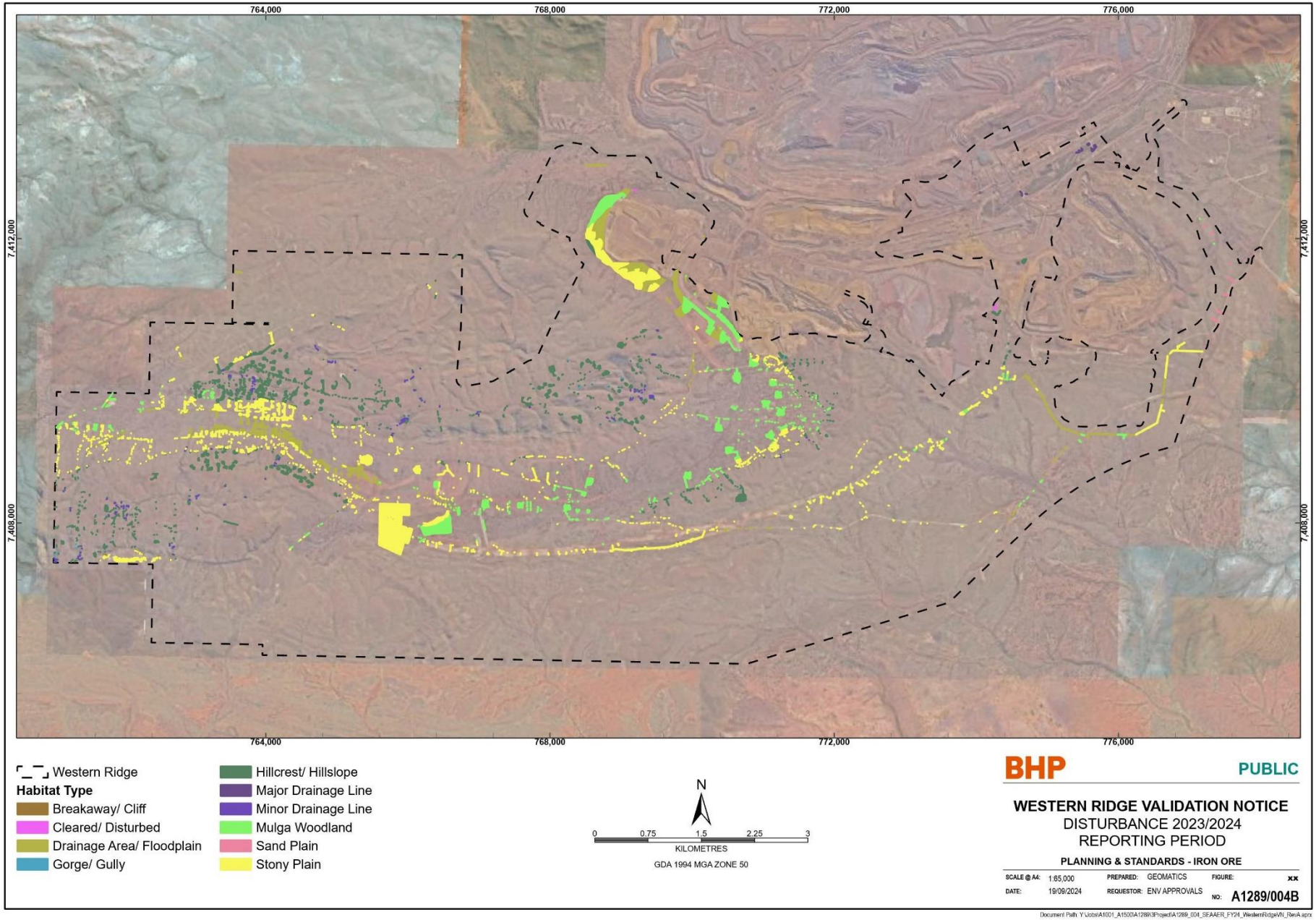

Figure 6-13 Western Ridge VN Habitat Disturbance FY2024