BHP Mitsubishi Alliance

Appendix E

MNES Management Plan

BHP Mitsubishi Alliance

PEAK DOWNS MINE POWER LINE REALIGNMENT PROJECT

MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE MANAGEMENT PLAN

EPBC Ref 2024/09983
Peak Downs Mine Realignment Project

BM Alliance Coal Operations Pty Ltd
ABN 67 096 412 752
Moranbah, Queensland

Version: 2 (4 March 2026)

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. 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) _____

Organisation (please print) _____

Date _____/_____/_____

Document Version Control

Version Control

Version	Details	Date
1.0	Final for submission	31/07/2025
2.0	Update in response to DCCEEW Adequacy Review	04/03/2026

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1 Introduction

BM Alliance Coal Operations Pty Ltd (BMA) owns and operates the Peak Downs Mine (PDM), an open cut coal mining operation near Moranbah, Queensland. The power lines associated with the existing mine pits (7N/5N/2N) require relocation to support continued mining activities at PDM.

The Proposed action is the Peak Downs Mine Power Line Realignment Project. The Proposed action involves the realignment of the existing 66 kilovolt (kV) 7N/5N/2N power lines to the east of the current alignment, and is comprised of the following three components:

- 7N power line realignment - entirely outside of a mining lease
- 5N power line realignment - partly within Mining Lease (ML) 70411, partly outside a mining lease
- 2N power line realignment - entirely within ML 70411

The Action area is the power line realignment corridor, which encompasses 83.55 hectares (ha) in area. Part of the Action area occurs within the BMA-held resource tenement ML 1775, the remainder is outside of the ML (**Figure 1**). The Action area is located adjacent to the eastern side of PDM. It lies within land described as Lot 8 on SP277384 and Lot 4 on SP174994, located within the Isaac Regional Local Government Area and the Brigalow Belt North Bioregion. The Disturbance footprint is the area within the Action area that will be impacted by vegetation clearing (79.06 ha), and the Study area is the area assessed by supporting ecological studies, which captures the Action area and nearby surrounding land.

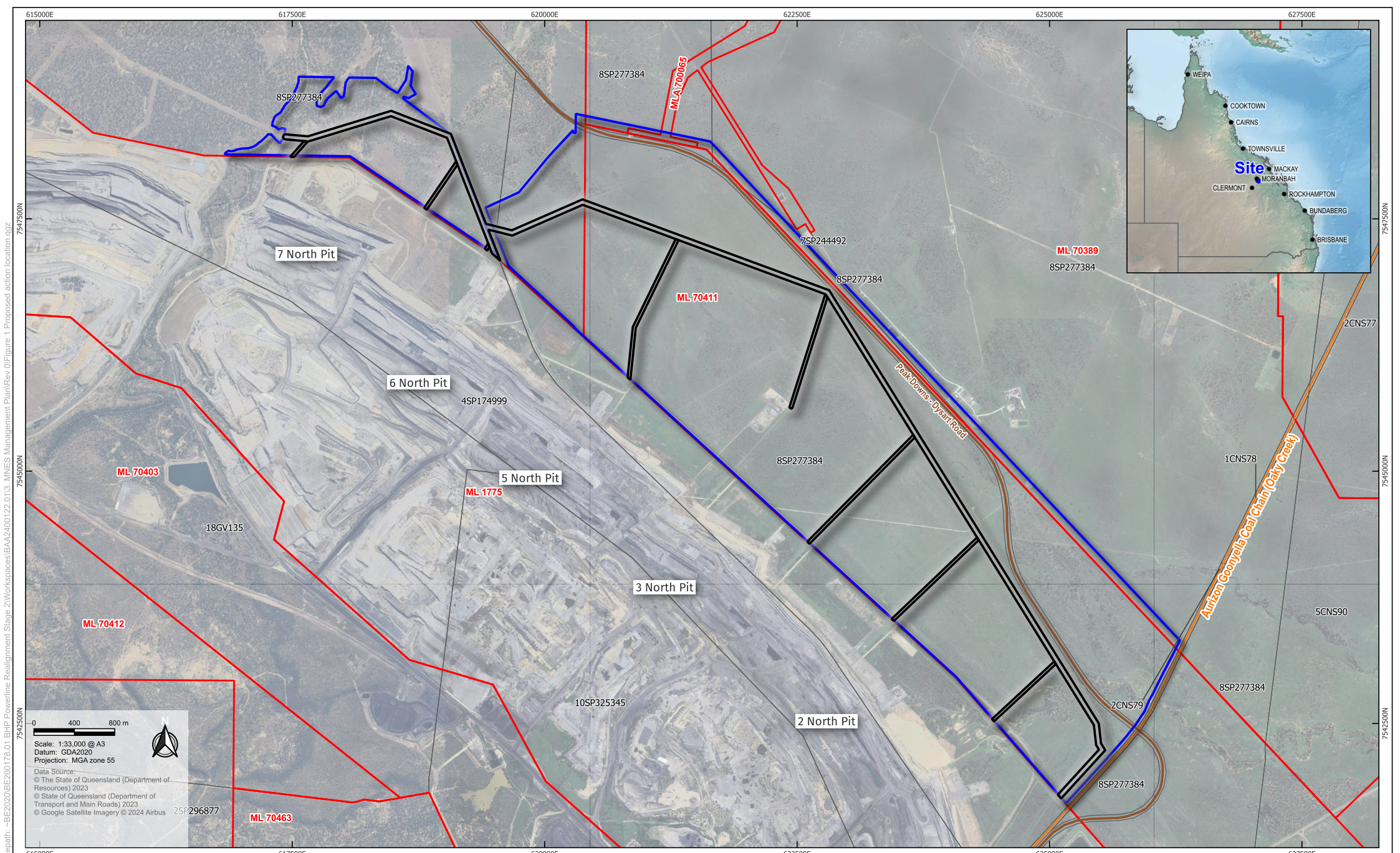
The Proposed action required approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC 2024/09983) for impacts to Matters of National Environmental Significance (MNES). The relevant controlling provisions for the Proposed action include listed threatened species and communities (sections 18 and 18A).

While approval under the EPBC Act is for impacts to Koala (*Phascolarctos cinereus*) and Greater Glider (southern and central) (*Petauroides volans*), this Matters of National Environmental Significance (MNES) Management Plan (MMP) relates to all MNES with the potential to be impacted by the Proposed action.

This MMP has been prepared in accordance with the *Environmental management plan guidelines* (DCCEEW 2024) to demonstrate the protocol to be implemented on-ground to avoid and minimise potential impacts to the following MNES:

- Koala (*Phascolarctos cinereus*)
- Greater Glider (*Petauroides volans*)
- Squatter Pigeon (*Geophaps scripta scripta*)
- Ornamental Snake (*Denisonia maculata*)
- King Blue-grass (*Dichanthium Queenslandicum*)
- Brigalow (*Acacia harpophylla* dominant and co-dominant) (Brigalow TEC)
- Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin (Natural Grasslands TEC)

This MMP is to be approved by the Minister prior to commissioning and will be implemented for the duration of the approval.



Legend

- Study area
- Action area
- Mining leases
- Cadastre (DCDB)
- State controlled roads
- Railways

epic Environmental — A Montrose Environmental Company

BMA — BHP Mitsubishi Alliance

BM Alliance Coal Operations Pty Ltd
Peak Downs Power Line Realignment
MNES Management Plan

Figure 1
Proposed action location

2 Conditions of Approval

This MMP has been structured to meet the relevant conditions of approval and demonstrate management measures to be implemented for target MNES (**Table 1**).

Table 1: Conditions of Approval Reference Table

Ref	Condition	Condition Requirement	MMP Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
				Placeholder conditions table, to be populated once conditions of approval received.

3 Project Description

The following sections provide an overview of the Proposed action to provide context for the MMP. This includes activities occurring during construction and operation, project schedule, and an overview of the existing environment.

3.1 Project Activities

3.1.1 Construction

The Proposed action includes the following construction activities:

- Clearing of woody vegetation for a corridor up to 50 metres (m) wide located along the proposed power line's main axis, extending 12.66 km in length in an approximate north-west to south-east direction. Existing ground cover present in the disturbance footprint will be retained (i.e. there will be no topsoil disturbance and the root mass will remain intact), with the exception of the access track described below. Outside of the access track, grass slashing may occur in the corridor where required for safe access during construction.
- Clearing of woody vegetation along a series of eight stub lines with corridors up to 30 m wide, located perpendicular to the southern side of the power line's main axis. The stub lines vary in length from 160 m to 1,500 m, with an overall length of 7.78 km (i.e. the total Disturbance footprint length is approximately 20 km). As per the main corridor, ground cover within the stub lines will be retained through slashing only (where necessary), with the exception of the access track described below.
- Clearing and grubbing of an access track up to 10 m wide along the main corridor and stub line corridors to provide access for vehicles, plant and project materials. This will remove the ground cover present potentially including the root mass. On completion of construction groundcover species will be allowed to regenerate naturally. A permanent formed access track will not be retained for the operation of the power line infrastructure, with only slashing required to maintain the track and ensure safe access.
- Excavating and pouring foundations for the power line towers will be located within the 10 m wide access track area. Power line towers are generally located 165 m apart for the majority of the alignment.
- Existing tracks will be used to cross waterways where practical, and new tracks will be constructed as bed level crossings to avoid barriers to fish passage and impacts to hydrology of the waterway
- Assembly and erecting the power line steel work including installation of stay anchors.
- Stringing electrical cables, conductors and earth wires along the power line towers.
- Tensioning of electrical cables to achieve minimum ground clearance.
- Connection of conductor bridges and droppers.
- Testing, commissioning and connection.

3.1.2 Operations

The operational phase of the proposed action is anticipated to require little maintenance. Slashing of ground cover within the main corridor and stub line corridors will be carried out when required and the entire area will be subject to continued cattle grazing for the life of the operation as occurs currently.

3.2 Project Schedule

The timing and duration of each project phase is provided in **Table 2.**

Table 2: Timing and Duration of the Proposed Action

Project Phase	Timing (Commencement)	Duration
Construction	01/02/2026	12 months
Operations	02/02/2027	Life of mining activities

3.3 Environmental Context

The Proposed action is situated within the Brigalow Belt North Bioregion, specifically within the Northern Bowen Basin subregion. Much of the landscape associated with the Action area has been heavily impacted by tree clearing for cattle grazing purposes. Vegetation communities within the Action area include remnant vegetation, woody regrowth, and non-remnant/cleared lands. To the south and south-west, the landscape is dominated by extensive mining operations associated with the PDM and more broadly existing BMA mining operations. The land to the north and east is primarily utilised for cattle grazing. The surrounding area is also a predominantly disturbed landscape impacted by cattle grazing and existing mining-related activities.

The Action area and surrounds were subject to a number of ecological surveys, the findings of which are outlined in the *7N5N2N Power line alignment MNES ecological report* prepared by Ausecology in 2024. The relevant matters to which this MMP applies are the MNES to which the Proposed action has the potential to impact. These key matters and their listing under the EPBC Act are:

- Brigalow (*Acacia harpophylla* dominant and co-dominant) (Brigalow TEC)
- Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin (Natural Grasslands TEC)
- King Blue-grass *(Dichanthium Queenslandicum)* – Endangered
- Squatter Pigeon (southern) (*Geophaps scripta scripta*) – Vulnerable
- Koala (*Phascolarctos cinereus*) – Endangered
- Greater Glider (southern and central) (*Petauroides volans*) – Endangered
- Ornamental Snake (*Denisonia maculata*) – Vulnerable

While the Proposed action does not have a significant residual impact to all of these matters, they may be impacted either directly or indirectly from project activities, and therefore have been considered with regards to the mitigation measures described in **Section 10**.

Ground-truthed habitat mapping associated with these matters is provided in **Appendix A**.

4 Roles and Responsibilities

The role and responsibilities delegated to the Proponent to support the implementation of this MMP during the proposed activities (as described in **Section 3.1**) are presented in **Table 3.**

Table 3: Roles and Responsibilities

Role	Responsibility
Project Manager	The Project Manager is responsible for: • Ensuring this MMP is made available, communicated, and understood by all personnel
Supervisor	The primary responsibility of the Supervisor is to supervise construction works with regards to this MMP. The Supervisor is primarily responsible for: • Reporting to the Site Environmental Representative on all matters related to environmental performance • Understanding this MMP and ensuring it is implemented by all personnel (including contractors) • Ensuring that documented emergency contacts and procedures are maintained and available to all parties on site • Ensuring sufficient resources are available for all personnel to fulfil the Proponents environmental obligations • Ensuring all incidents are adequately reported, investigated, and managed • Ensuring that personnel (including contractors) engaged by the Proponent are adequately trained and qualified to fulfil their roles • Supervise waste collection, removal, and appropriate disposal
Site Environmental Representative	The Site Environmental Representative is responsible for: • Providing direction and advice with regards to environmental obligations to the Site Supervisor • Inspection of the site and monitor the implementation of this MMP for compliance with the EPBC Act approval • Investigate any environmental incident or non-compliance and, where necessary, developing and implementing corrective actions • Liaising with regulatory authorities in relation to the EPBC Act approval • Consolidating data and undertaking all statutory environmental reporting • Approval of any minor changes to the MMP to account for new information (e.g., monitoring results), including those that are editorial in nature and do not increase the magnitude of impacts on the environment when considered individually or cumulatively.
Fauna spotter-catcher	A suitably qualified and experienced person (i.e. licensed fauna spotter) • Conduct pre-clearance vegetation surveys • Be present during vegetation clearing within MNES habitat for fauna spotting purposes • Report any occurrence of protected species during vegetation clearing to Site Environmental Representative • Relocation of animals as required and in accordance with any approved species management programs • Provide input into the fauna register
All employees and contractors	• Follow the protocols outlined in this MMP.

5 Reporting

Following approval of this MMP, results of all monitoring programs will be compiled and will inform Annual Compliance Reporting. External environmental reporting requirements are outlined in **Table 4**.

Table 4: External Environmental Reporting Requirements

Report	Report Content	Trigger	Regulator	Responsibility
Annual Compliance Report	Compliance with approval conditions	EPBC Act approval conditions	DCCEEW	Site Environmental Representative

6 Environmental Training

All personnel involved in the construction and operation of the Proposed action will receive appropriate training to ensure they understand their responsibilities when implementing this MMP. This includes mine personnel, contractors, sub-contractors and visitors. The environmental training to be undertaken for the Proposed action will be in line with the training procedures already implemented at PDM, including completion of standard operating procedures and work area familiarisation. All training records will be maintained in PDMs database and include the name of the person undertaking the training, date of training, and a completion certificate (if provided).

A summary of the environmental training is described in **Table 5**.

Table 5: Environmental Training Requirements

Training type	Modules	Timing of Training
Site induction	• Overview of environmental values • Overview of approval conditions • Identification of MNES values • Identification of approved disturbance areas • Understanding this MMP • Understanding role in implementing this MMP • Environmental incident and emergency response procedures • Consequences of not meeting environmental responsibility	Prior to commencing works on site / accessing site

7 Emergency Contact and Procedures

Key emergency contacts responsible for managing environmental emergencies associated with the Proposed action include:

- Project Manager;
- Supervisor;
- Site Environmental Representative; and
- Fauna Spotter Catcher.

Emergency contact details for the project are kept up to date and available on-site. The PDM also has Site Emergency Response Plan which will be covered during Site Induction.

8 Potential Environmental Impacts

8.1 Potential Impacts

This section of the MMP describes the potential impacts that may occur to MNES as a result of the Proposed action. Potential impacts may come from direct impacts (such as vegetation clearing) or indirect impacts (such as the introduction of weeds and pests). Impacts primarily have the potential to occur during the construction phase as a result of vegetation clearing. There will be little activity or disturbance required to maintain the power line during operations.

Below is a summary of the potential direct and indirect impacts that could occur to MNES as a result of the Proposed action.

8.2 Direct Impacts

8.2.1 Vegetation Clearing

The clearing of woody vegetation is a direct impact of the Proposed action on the ecological values within the Disturbance footprint. Land clearance is listed as a key threatening process under the EPBC Act. The removal of habitat may reduce the size of local populations of flora and fauna dependent on that habitat. These impacts are immediate and may be significant in the short-term for species that may use the impacted area.

The Disturbance footprint encompasses a total of 79.06 ha of which 48.56 ha is identified as modified non-remnant lands with little value to MNES. The Proposed action will impact 8.10 ha of woody vegetation in remnant vegetation communities and a further 21.83 ha of immature and low-growing woody regrowth. Much of this has been impacted by previous clearing to some degree and some communities provide a very sparse open woodland canopy cover.

Table 6 shows the extent of vegetation clearing within the Disturbance footprint for all of the MNES to which this MMP relates, which is demonstrated in the mapping in **Appendix A**.

Table 6: Vegetation Clearing Extents Relating to MNES

MNES values	Proposed action impact extent (ha)[1]
Natural Grassland TEC	0.57
Brigalow TEC	0.04
Dichanthium queenslandicum	0.57
Squatter Pigeon	22.77[2]
Koala	17.57[2]
Greater Glider	7.22[2]
Ornamental Snake	0.19[2]

[1] It is noted that the impact extents overlap for many of these MNES, and the areas are not intended for a cumulative total calculation

[2] Impact extent is calculated based on impacts to all habitat types (preferred, suitable, and marginal)

8.2.2 Fragmentation, Connectivity and Edge Effects

Much of the landscape associated with the Disturbance footprint has been heavily impacted by tree clearing for cattle grazing purposes. A number of extant communities are either grasslands (RE 11.4.4 and 11.8.11) or comprise a very open canopy (RE 11.8.5). Infrastructure for the Proposed action has been situated in areas already cleared of vegetation wherever possible. There will be minor clearing of remnant woody vegetation required. This impact will be linear and up to 50 m in width. Most of the MNES species with potential to be present are mobile species that will not be impacted by the Proposed action. There will be little impact to landscape connectivity and habitat fragmentation as a result of the Proposed action for these species. However, there is potential for Greater Glider to be impacted where the species habitat is intersected by the north-western section of the Disturbance footprint.

The habitats that remain extant in the Study area are already subject to the potential for edge effects caused by increased exposure to wind and sun (caused by previous tree clearing and thinning practices) as well as substantial weed invasion observed in the ground cover. As noted above, some of the vegetation communities present are already very open in structure. These are unlikely to be subject to edge effects as a result of the Proposed action. The Proposed action is proposing to clear a relatively minor extent of wooded habitat in an already disturbed landscape and is considered to have a negligible impact on increasing the impact of edge effects within the local area.

8.2.3 Fauna Mortality

Clearing of vegetation for the Proposed action presents a risk of direct mortality or injury to fauna. Fauna of low mobility are at risk of injury or death from tree felling and heavy machinery/vehicular movements during the construction of the Proposed action.

The operational phase is unlikely to add to this impact due to the benign nature of the Proposed action's operation. There will be occasional vehicle movements associated with maintenance access where required. As such, potential injury or mortality from vehicle movements is considered to be a very low risk during operations.

Tree clearing will only occur within designated areas and only during designated time periods. The extent of habitat providing potential fauna hollows is relatively limited.

8.2.4 Weeds and Pest Animals

Introduced weeds have the potential to impact on terrestrial ecological values as native flora can become displaced through competition with weed species, and adversely affected by browsing and soil trampling caused by feral herbivores. Native fauna populations, particularly small to medium sized species, may be impacted by predation from introduced carnivores, such as feral cats. Wild dog and feral cats were recorded onsite and Red Fox is also likely present. These are indirect impacts which are already present and likely have been exacerbated by existing cattle grazing activities within and near the Action area.

The Disturbance footprint (and broader Study area) is often dominated by Buffel Grass in the ground layer throughout and Parthenium was observed to be common. Both are invasive species and Parthenium is listed as a Weed of National Significance under the EPBC Act.

The following activities associated with the Proposed action have the potential to promote the proliferation of weeds and pests within the Disturbance footprint (and Study area), or introduce new weeds and pests from surrounding areas:

- The use of construction machinery, plant and materials sourced from outside the region and increased vehicular traffic in general may introduce and spread weed seeds if biosecurity hygiene measures are not in place
- Land clearance favours the establishment of weeds due to increased light and soil disturbance
- Inappropriate disposal and storage of putrescible wastes may attract feral animals

Clearing of ground cover within the entire Disturbance footprint will be minimal and restricted to the 10 m wide access track. This will minimise the potential for weeds to establish (where they do not already occur). The main threat is the introduction of new weeds to the area via contaminated vehicles or soils.

8.3 Indirect Impacts

8.3.1 Airborne Dust and Noise

Earthworks and vehicular traffic can generate dust, particularly during dry weather. Dust can have both a physical and chemical impact on plants, either through the smothering of leaves, whereupon the rate of deposition is important, or through chemical changes to the soil or directly to the plant surface.

The clearing of ground cover during construction will be minimal and restricted to the 10 m wide access track. This will minimise the extent of exposed soils potentially subject to dust entrainment during dry and windy weather. The proposed access track will be allowed to regenerate naturally on completion of construction. Therefore, the impact of dust settlement from the Proposed action is considered temporary (construction phase) and negligible at worst.

Understanding of the impacts of noise on fauna is limited. There are no current government policies or guidelines that recommend noise thresholds or limits for development activities to mitigate potential harm to fauna. Noise may affect wildlife through a variety of impacts such as:

- Interfering with communication calls
- Interfering with foraging/defence through cloaking the sound of predators and prey
- Causing general stress or avoidance reactions
- Changes in reproductive or nesting behaviours.

Excessive noise may lead some species to avoid noisy areas, which could result in the localised fragmentation of habitat at the species or individual territory level. Overall, noise impacts from the Proposed action to the surrounding habitat will be almost entirely restricted to that emitted during construction activities. Given the Proposed action is located close to PDM operations, which already generates noise impacts, the potential additional impacts from the Proposed action are considered temporary (construction phase) and negligible at worst.

8.3.2 Fire

The Disturbance footprint is located within largely cleared grazing lands with tracts of sclerophyll woodlands mainly in the west. The woodland areas have potential to be impacted by accidental fires caused by Proposed action activities. Fire hazard mapping for Queensland indicates the mapped woodlands within the Study area as having a ‘medium potential bushfire intensity’. Fire is specifically noted as a threatening process on the Brigalow TEC which occurs within the Disturbance footprint (and broader Study area).

8.3.3 Water Quality

The Proposed action only requires minor excavation works (for power pole footings) and will have no impact on groundwaters. Clearing requiring disturbance of topsoil has also been minimised to the 10 m wide access track. The Proposed action will require clearing along four minor drainage lines including three stream order 1 and one stream order 2 features. Powerline poles will be located outside of drainage lines. Only two of these currently retain woody vegetation cover. All of the creeks are considered highly ephemeral in nature and all drain north from PDM itself (i.e. there is very little catchment draining through the Disturbance footprint and any flows would be minor in extent and short-lived).

The Proposed action has potential to impact surface water and associated aquatic ecology values through a variety of processes:

- During construction disturbance, uncontrolled sedimentation of watercourses (particularly during and following heavy rainfall events) can impact aquatic values by smothering stream beds with fine material, and decreasing bed roughness and reducing habitat diversity
- Similarly, uncontrolled sedimentation movements associated with construction disturbance may lead to localised increased turbidity and suspended solids which may negatively impact fish and macroinvertebrates (through reduced respiratory and feeding efficiency), and adversely affect submerged aquatic plants as light penetration (required for photosynthesis) is reduced

- Poorly designed and constructed waterway crossings may create long-term waterway barriers that prevent or impede movements of aquatic fauna
- Waterway crossings may cause long-term bank instability if remediation works are not adequately designed and implemented. This may lead to bank erosion (causing impacts to instream sedimentation and turbidity) and adverse impacts to riparian vegetation

8.4 Impact Summary

A summary of the potential impacts on MNES as a result of the Proposed action that are the subject of this MMP is provided in **Table 7**.

Table 7: Summary of Potential Impacts to MNES

Impacts	Potential impacts to MNES	Impacted MNES	Applicable phase
Vegetation clearing	Removal of vegetation communities, and vegetation that provides habitat for threatened species.	All	Construction
Fragmentation, connectivity and edge effects	Reduction in ability for threatened MNES species to disperse to adjacent habitat and move safely through the area.	All	All phases
Fauna mortality	Injury or death from tree felling and heavy machinery or vehicular movements.	Koala, Greater Glider, Squatter Pigeon	Construction
Weed and pest animals	Dispersal of weeds by vehicles, machinery, and people leading to habitat degradation. Loss of food resources and habitat degradation from feral animals.	All	All phases
Airborne dust and noise	Dust generation resulting in reduced habitat quality. Disturbance to fauna from noise.	All	Construction
Fire	Fires from machinery, activities occurring on site and/or personnel. Hot bushfires can cause temporary and permanent losses of habitats and result in injury/mortality of threatened fauna species.	All	All phases
Water quality	Sedimentation or erosion resulting in adverse impacts to riparian vegetation and reducing habitat quality.	All	Construction

9 Risk Assessment

9.1 Methodology

A risk assessment has been undertaken for each potential impact identified in **Section 8.1.** The risk assessment was completed in accordance with the methods outlined in DCCEEW's Environmental Management Plan Guidelines (version 1.2, 2024).

The initial (inherent) risk rating was determined with no mitigation measures in place. Following mitigation measures being applied, the residual risk rating was then determined.

The method for determining the 'likelihood' is presented in **Table 8**, the method for determining 'consequence' is presented in **Table 9** and the 'risk rating' is presented in **Table 10.**

Table 8: Likelihood

Qualitative measure of likelihood	How likely is it that this event/issue will occur after control strategies have been put in place
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Table 9: Consequences

Qualitative measure of consequences	What will be the consequence/result if this issue does occur
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

Table 10: Risk Rating

	Consequence				
	Minor (1)	**Moderate (2)**	**High (3)**	**Major (4)**	**Critical (5)**
Highly Likely (E)	Medium	High	High	Severe	Severe
Likely (D)	Low	Medium	High	High	Severe
Possible (C)	Low	Medium	Medium	High	Severe
Unlikely (B)	Low	Low	Medium	High	High
Rare (A)	Low	Low	Low	Medium	High

For the purposes of this risk assessment, the risk levels are defined as follows:

- **Severe**: Unacceptable risk that must not proceed until suitable and comprehensive control measures have been adopted to reduce the level of risk.
- **High**: Moderate to critical consequences. Works should not proceed without considerations of additional actions to minimising the risk.
- **Medium**: Acceptable with formal review. Medium level risks require active monitoring due to the level of risk being acceptable.
- **Low**: Acceptable with active management not considered required.

9.2 Risk Assessment Summary

The full risk assessment is provided in Appendix B. A summary of the residual risk rating associated with each of the impacts with potential to occur to MNES (per **Table 7**) is provided in **Table 11.**

Table 11: Summary of Residual Risk Assessment

Impacts	Residual Risk Rating[1]
Vegetation clearing	Medium
Fragmentation, connectivity and edge effects	Low
Fauna mortality	Low
Weed and pest animals	Low
Airborne dust	Low
Noise	Low
Bushfire	High
Water quality	Low

[1] Residual risk is the risk remaining after implementation of proposed mitigation and management measures (**Section 10.5**)

10 Environmental Management Measures

This section of the MMP describes the proposed measures that will be implemented to avoid, mitigate and manage direct and indirect impacts (**Section 8**) on MNES.

10.1 S.M.A.R.T Principle

This MMP was prepared in accordance with the 'S.M.A.R.T' principle:

- S – Specific (what and how)
- M – Measurable (baseline information, number/ value, auditable)
- A – Achievable (timeframe, money, personnel)
- R – Relevant (conservation advices, recovery plans, threat abatement plans)
- T – Time-bound (specific timeframe to complete)

By utilising the 'S.M.A.R.T' principle parameters, the Proponent is ensuring all objectives are attainable within designated timeframes and are eliminating risks associated with potential guesswork. Using this method has also ensures control strategies are easier to measure and track, creating a more accountable and robust system of on-site management.

10.2 Management Hierarchy

Planning and management of impacts associated with the Proposed action was undertaken with consideration to a set of hierarchical management principles (management hierarchy), as outlined in State and Commonwealth offset policies. The management hierarchy is designed to firstly avoid impacts, then mitigate and manage impacts on environmental values, as follows:

- **Avoidance**: Avoiding direct and indirect adverse impacts where possible through design
- **Mitigate**: Mitigating direct and indirect adverse impacts where impacts cannot be avoided through actions to reduce likelihood or severity of impacts occurring such as modifying design (e.g. employing specialist clearing and construction methods, reducing vehicle speed limits)
- **Manage**: Implement management actions to prevent or reduce impacts occurring such as weed and feral animal control, fire management. These actions are often over a longer timeframe.

10.3 Management Objectives

The main objectives of this MMP are to:

- No unauthorised clearing of vegetation including identified TECs and MNES species
- No fauna mortality during vegetation clearing or vehicle movements
- No incursion of a novel weed species or proliferation of existing weed species
- No uncontrolled bushfires resulting from Proposed action
- No unauthorised impacts to terrestrial or aquatic habitat

These management objectives are to be achieved through the implementation of environmental management activities, controls and performance targets, which are described in **Section 10.5.**

10.4 Alignment Optimisation and Avoidance Measures

The avoidance and minimisation of impacts to MNES have been a major consideration during the planning of the Proposed action. During the design phase, the Disturbance footprint went through a design refinement process which included the relocation and refinement of the power line footprint to avoid and/or minimise impacts to ground-truthed MNES. The original disturbance footprint included a corridor up to 60 m wide for both the main lines and the stub lines. The width of the main line has been reduced by 10 m (now 50 m wide) while the width of the stub lines has been reduced by 30 m (now 30 m wide). The main line width is required to remain at 50 m and could not be reduced any further due to safety and design requirements which are managed under BMA's internal procedure policies for a 66 kV power line.

During the design refinement process, changes occurred to avoid fragmenting patches of MNES through shifting the alignment to the edges of these patches as much as possible. This includes shifting the alignment to almost completely avoid impacts to the Natural Grassland TEC, and avoid clearing of mature trees as much as practical to minimise potential impacts to Greater Glider and Koala habitat.

To minimise the proposed vegetation clearing impacts, activities involving grubbing and topsoil removal will be restricted to the construction of the 10m wide access track situated within the power line corridor (i.e., located within the above-nominated widths for main lines and stub lines). Topsoil and natural grassland will remain intact within the remaining width of the corridor, with only trees and shrubs required to be removed to reduce the fire hazard and maintain safe operational clearance for the power lines. Regarding the Natural Grassland TEC, this results in a significantly reduced permanent impact, where the original extent to be impacted was 2.55 ha, which through the avoidance and mitigation process has been reduced to 0.57 ha.

Importantly, the 10 m wide construction access track will not be formalised as a gravel access track which would typically result in preventing the vegetation regrowth. Instead, it will be allowed to regenerate naturally following completion of construction of the power lines, and will be subject to weed management to support the regeneration of the natural grassland. During the operational life of the power line, the entire area will be managed through slashing and grazing to keep fuel loads controlled in the corridor and to allow continued maintenance access.

Overall, the refinement of the Disturbance footprint has minimised the direct impact areas ground-truthed to have MNES values.

10.5 Mitigation and Management Measures

The risk assessment identified vegetation clearing and habitat removal as the major impact of the Proposed action. A range of mitigation strategies have been developed to manage the level of risk of identified impacts and will be implemented for the Proposed action. All reference to TECs and MNES species habitat refer to the mapped areas provided in **Appendix A**.

Proposed avoidance, mitigation and management measures for each potential impact associated with the Proposed action are described in **Table 12**.

The Proposed action will work under a project-specific MMP (this document), as well as BMA operational management plans and procedures, including bushfire management, weed and feral animal management, and erosion and sediment control as appropriate.

Table 12: Proposed mitigation measures for general impacts resulting from Proposed action

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
Vegetation clearing impacting MNES habitat	**Minimise:** Employees and contractors will be made aware of environmental obligations and compliance requirements, including MNES, prior to commencing disturbance activities.	Daily pre-start meeting to occur throughout construction period.	Construction Supervisor (or delegated pre-start meeting leader)	Weekly check of pre-start records by Environment Team.	**KPI:** All pre-start meetings address environmental requirements, including MNES compliance. **Corrective Actions:** Environment Team review and provide input to pre-start meeting agenda to correct. If determined by Environment Team that additional focus is required, training and awareness package will be implemented to all employees and contractors prior to individuals' involvement in any disturbance activities associated with MNES habitat.
	Avoid: Vegetation/habitat clearing extents will be clearly demarcated and no clearing to occur outside the delineated boundaries.	Demarcation to be installed immediately prior to disturbance activities and to remain in place for the duration of the construction period.	Construction Supervisor	Weekly visual inspection of demarcation for intactness during construction period. Daily monitoring of clearing works completed during the construction period to confirm disturbance is in accordance with demarcation requirements.	**KPI:** No clearing of identified TECs and MNES species habitat outside authorised boundaries. **Corrective Action:** In the event demarcation effectiveness is compromised, the Construction Supervisor will repair immediately. Clearing in immediately adjacent areas will be paused while repair occurs. **Corrective Action:** In the event of unauthorised clearing, action will be taken immediately to avoid further unauthorised clearing. An incident investigation by the Environment Team will commence within 48hrs of being made aware of the event, and will: 1. identify and describe any potential harm to MNES and 2. evaluate actions that led to the incident occurring. Through the investigation process, corrective actions will be identified within one month of the event that commensurate with the cause identified and scale of harm. Specific corrective actions will be dependent on the nature of an incident and specialists subject matter expert input may be required (for example qualified Ecologists). Examples include: • Consider if impact to MNES values requires provision of an offset. • Remediation works. • Revise demarcation procedures or techniques (e.g., implementation of alternative demarcation tools).
	Avoid and Minimise: Disturbance to groundcover and topsoil will be restricted to a clearly demarcated 10 m wide access track. All other disturbance within the Action Area will be limited to woody vegetation removal and slashing (and not disturbance to groundcover and topsoil).				

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
					The outcomes of the investigation will document the impact to MNES and identify the required corrective actions, responsibility and timeframes for completion. Reporting to the relevant Regulators may be required.
Fauna mortality	**Avoid:** Licensed Fauna Spotter Catcher/s (FSC) will conduct pre-clearance surveys where vegetation clearing is to occur (including in MNES habitat areas) to detect habitat features and individuals that may require relocation. Note: FSC will be licenced under the *Nature Conservation Act 1992* (Qld) and have the appropriate fauna handling and relocation permits and equipment to manage the FSC process. The length of surveys and exact timing will be determined on-ground by the FSC.	Within 24hrs prior to clearing activities, an FSC will complete the pre-clearance survey on-ground across the area where vegetation clearing is to occur.	FSC engaged by the Construction Supervisor	Confirmation of pre-clearance survey in pre-start meeting prior to clearing.	**KPI:** No clearing works undertaken without a pre-clearance assessment completed by an FSC. **Corrective Action:** No clearing activities to be undertaken (stop work) where no pre-clearance survey found to have taken place. Construction Supervisor to arrange for survey to be completed prior to commencement of vegetation clearing activities.
	Avoid and Minimise: Licensed FSC/s will actively monitor the clearing front during vegetation clearing activities. During clearing, the FSC is responsible for physical relocation of fauna or encouragement of individuals to self-relocate. Habitat features (hollow logs/limbs, coarse woody debris) within identified MNES habitat can also be relocated to suitable habitat outside of the Action Area. In the event an individual threatened species is encountered within an area proposed for	During all vegetation clearing activities for the duration of the Construction period.	FSC	Confirmation at daily pre-start meeting that an FSC is present for any planned vegetation clearing activities. During the progression of clearing works, monitoring of the clearing front will be included in daily environmental inspections. Daily report from FSC provided to	**KPI:** No fauna mortality during the construction period (vegetation clearing activities or Construction period vehicle movements). **Corrective Action:** Environment Team and FSC to review processes and confirm all reasonable measures were undertaken. If deemed additional processes are required, these are to be implemented before clearing activities recommence. Reporting to the relevant Regulators may be required.

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
	clearing (e.g. Koala, Greater Glider), the FSC is to direct all on-site personnel (i.e. provide instructions) to manage the individual and minimise harm.			Construction Supervisor.	
	Minimise: In the event injured fauna are encountered during clearing activities, the FSC will be responsible for the management of the individual/s. Management will be in accordance with the *Code of Practice: Care of Sick, Injured or Orphaned Protected Animals in Queensland* (approved under the *Nature Conservation Act 1992* (Qld)).	Procedures to be defined and in place prior to commencement of clearing activities and available for implementation for the duration of the Construction period.	FSC	Daily report from FSC provided to Construction Supervisor.	**KPI:** Daily reports capture details of any injured MNES and include record of actions taken to manage the individual/s. **Corrective Action:** In the event the FSC is not fulfilling the requirement, a new FSC will be engaged to be present during the remainder of the Construction period.
	Minimise: Speed reduction measures (e.g., 30 km/hr) will be established to limit the potential for vehicle collision with wildlife on corridor access track. Construction personnel will be made aware of speed limits during site inductions. Personnel will be required to report any vehicle-wildlife collisions to Construction Supervisor.	Speed limits to be defined (and sign-posted) prior to the commencement of Construction and maintained for the life of the Project.	Construction Supervisor (during construction period). Operations manager (at completion of the Construction period).	Weekly checks of signage by Construction Supervisor during the Construction period. Construction Supervisor to collate all reports of collision and Environment Team to maintain in a register.	**KPI:** No reports of vehicle-wildlife collision during the Construction period. **Corrective Action:** Construction Supervisor and Environment Team to review location and type of collision to identify any high-risk areas for further speed reduction and make changes to locations of implementation within one month of KPI not being met. Other corrective measures will be specific to the location and type of event such as increased signage or increased awareness education for Construction personnel.
Weeds and pests	**Minimise:** The existing BMA Weed and Feral Animal Management procedure will be implemented to manage invasive species. Measures will be in line with current best management practices associated with PDM.	Implementation of the procedures to commence immediately prior to disturbance activities and to remain in place for the duration of the Construction period.	Construction Supervisor	As per BMA Weed and Feral Animal Management procedure. Weekly inspections to monitor weeds will occur during the Construction period.	**KPI:** No incursion of a novel weed species. No proliferation of existing weed species. **Corrective Actions:** Appropriate corrective actions will be identified within one month of being aware of the KPI not being met, and will be commensurate with the type of incursion and specific requirements of the relevant weed species. This will be as per BMA Weed and Feral Animal Management procedure. This will include additional targeted weed treatment using the following methods (method will be selected based on type of weed species being targeted):

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
					• Manual /hand removal (small scale infestations). • Mechanical (to control competitive weeds between trees using chainsaws, brush cutters, slashers, mowers, ploughing etc.). • Chemical (application using appropriate herbicide via foliar spraying, basal barking, stem injection or cut and paint, drill and fill, cut stump, wick applicator). • Biological (per Biosecurity Queensland's website guided by the conclusions from their most recent research projects).
	Avoid: Vehicle wash-downs will be required for all vehicles new to the site (including earthmoving and other construction machinery) entering the Disturbance footprint, in accordance with BMA Weed and Feral Animal Management procedure.	Implementation of the procedures to commence immediately prior to disturbance activities and to remain in place for the duration of the Construction period.	Construction Supervisor	Evidence of wash-downs of any vehicles new to the site provided to Construction Supervisor upon entry to Construction area.	**KPI:** All new vehicles complete wash-downs in accordance with the procedure prior to entry to the Construction area. **Corrective Actions:** Vehicles without evidence to be refused entry until appropriate evidence can be provided to the Construction Supervisor.
	Manage: In the area of Grassland TEC where disturbance for 10 m wide access track is required, the corridor will be allowed to naturally regenerate and will be subject to ongoing weed management and maintenance activities.	To commence immediately following completion of Construction at the Grassland TEC location.	Environment Team	Inspection of Grassland TEC areas within the Disturbance footprint weekly to detect weed invasion until native groundcover is established.	**KPI:** Area of disturbed Grassland TEC naturally regenerates to condition directly adjacent. **Corrective Actions:** Where inspections detect weed invasion targeted weed management will be undertaken within one month. The management approach will be dependent on the type of weed (and recommended species-specific management approaches) and scale of invasion.
Bushfire	**Avoid:** The existing BMA Site Bushfire Management Plan will be implemented for the Proposed action.	Implementation of the plan immediately prior to disturbance activities and to remain in place for the duration of the Construction period.	Construction Supervisor	As per BMA Site Bushfire Management Plan.	**KPI:** No uncontrolled fire caused by the Action that compromises the MNES values within the Action area. **Corrective Actions:** In the event a fire is caused by the activities of the Action and compromises the MNES values of the Action area, an incident investigation will commence by the Environment Team within 48hrs of being made aware of the event to: 1. identify and describe any potential harm to MNES and 2. evaluate actions that led to the incident occurring. Through the investigation process, corrective actions will be identified within one month of the event that commensurate with the cause
	Minimise: Monitor weather conditions to identify potential for increased bushfire hazard. Delay of work	Implementation of the plan to commence immediately prior to disturbance	Construction Supervisor	Daily check by site Construction Supervisor prior to commencing activities.	

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
	considered where high-risk fire conditions identified.	activities and to remain in place for the duration of the Construction period.			identified and scale of harm. Specific corrective actions will be dependent on the nature of an incident and specialist subject matter expert input may be required (for example qualified ecologists). Examples include: • Consider if impact to MNES values requires provision of an offset • Remediation works • Revision of bushfire management approaches The outcomes of the investigation will document the impact to MNES and identify the required corrective actions, responsibility and timeframes for completion. Reporting to the relevant Regulators may be required.
	Minimise: Work sites will include designated smoking areas.	Designations to be defined to personnel immediately prior to disturbance activities and to remain in place for the duration of the Construction period.	Construction Supervisor	Daily visual housekeeping inspections by Construction Supervisor. Site personnel encouraged to report unsafe practices.	
Surface water	**Avoid:** Erosion and sediment controls for the Disturbance footprint will be implemented in line with PDM's Erosion and Sediment Control Plan (ESCP). **Minimise:** Wherever possible, works within a watercourse will be conducted in the following order of preference: 1. Conducting works when no water is present 2. Conducting works in times of no flow	Implementation of the plan to commence immediately prior to disturbance activities and to remain in place for the duration of the Construction period.	Construction Supervisor	As per PDM ESCP.	**KPI:** Erosion or sediment controls are in place and maintained for the duration of the Construction period and manage impacts to MNES values. **Corrective Action:** Ineffective controls identified to be immediately repaired or replaced with appropriate measures. Environment Team to commence investigation within 48hrs of being made aware of the event to: 1. identify and describe any potential harm to MNES and 2. evaluate actions that led to the incident occurring. Through the investigation process, corrective actions will be identified within one month that commensurate with the cause identified and scale of harm (if harm confirmed). Specific corrective actions will be dependent on the nature of an incident and specialist subject matter expert input may be required (for example qualified ecologists, contaminated land specialists). Examples include: • Consider if impact to MNES values requires provision of an offset • Remediation works • Revision of containment or other procedures
	Avoid: Applicable materials/chemicals for the Proposed action will be stored within storage/bunded sites in the PDM mine infrastructure area.	Infrastructure to be established prior to commencing the Action and remain	Construction Supervisor	Weekly environmental inspection by Construction Supervisor.	**KPI:** No chemical spills outside designated areas. **Corrective Action:**

Impact	Key mitigation measures/controls	Timing for Implementation	Responsibility	Monitoring for Effectiveness	KPI and Corrective actions
	Avoid: Washdowns and refuelling will be carried out within designated areas, away from watercourses.	in place for the duration of the Construction period.			Spills to be immediately contained and managed in accordance with Spills Response Procedure. Environment Team to commence investigation within 48hrs of being made aware of the event to: 1. identify and describe any potential harm to MNES and 2. evaluate actions that led to the incident occurring. Through the investigation process, corrective actions will be identified within one month that commensurate with the cause identified and scale of harm (if harm confirmed). Specific corrective actions will be dependent on the nature of an incident and specialists subject matter expert input may be required (for example qualified ecologists, contaminated land specialists). Examples include: • Consider if impact to MNES values requires provision of an offset • Remediation works • Revision of containment or other procedures

11 Audit and Review

11.1 Environmental Auditing

The implementation and effectiveness of this MMP will be audited annually as part of the Proposed action. Further, internal audits will be undertaken as part of site-based compliance audits, field leadership activities, and environmental management systems effectiveness audits. Where relevant, updates to the MMP will be made to implement findings of internal audits or updating of corrective actions.

11.2 Environmental Management Plan Review

This MMP is considered to be a live document and will be reviewed and updated as required in accordance with an adaptive management framework. Review of this management plan should be undertaken:

- Following significant environmental incidents
- When there is a need to improve performance in an area of environmental impact
- If a new environmental impact is introduced from the Proposed action
- Every six (6) months if construction of the project exceeds one year

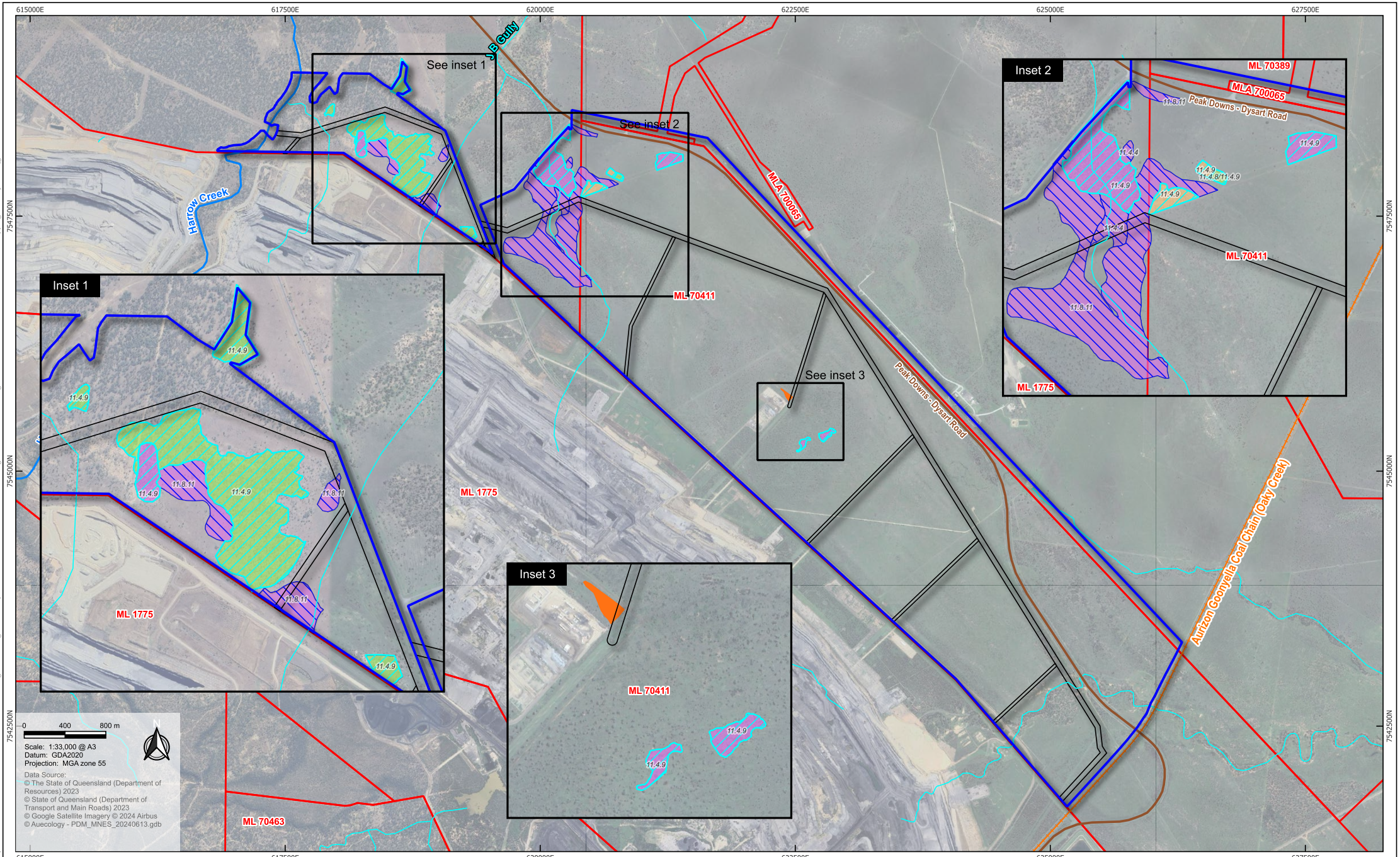
12 Terms and Definitions

Table 13: Terms and Definitions

Term	Definition
Action area	The power line realignment corridor, which encompasses 83.55 ha in area
BMA	BM Alliance Coal Operations Pty Ltd
DCCEEW	Department of Climate Change, Energy, the Environment and Water
Disturbance footprint	The area within the Action area that will be impacted by vegetation clearing, which is 79.06 ha.
EOP	*EPBC Act Environmental Offsets Policy October 2012*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPBC Act Referral	EPBC2024/09983
ha	hectares
km	kilometre
kV	kilovolt
m	metres
ML	Mining Lease
MMP	Matters of National Environmental Significance Management Plan
PDM	Peak Downs Mine
Proposed action	Peak Downs Mine Power Line Realignment Project
Proponent	BM Alliance Coal Operations Pty Ltd
RE	Regional Ecosystem
Study area	Study area is 1,822 ha in size and was the area assessed by supporting ecological studies, which captures the Action area and nearby surrounding land
TEC	Threatened ecological communities

13 Appendix A

Ground-truthed habitat mapping



Filepath: ~BE2020\BE200178.01 BHP Powerline Realignment Stage 2\Workspaces\BAA2400122.0113_MNES Management Plan\Rev 0\Figure A1 Ground-truthed TEC and wetland mapping – Study area.qgz

Legend

- Study area
- Action area
- Mining leases
- Wetland
- Railways
- State controlled roads

Vegetation management watercourses and drainage features v7.0

- Major
- Minor

Ground-truthed regional ecosystems

- Remnant
- High-value regrowth
- Regrowth

Ground-truthed threatened ecological communities

- Brigalow TEC
- Natural Grasslands TEC

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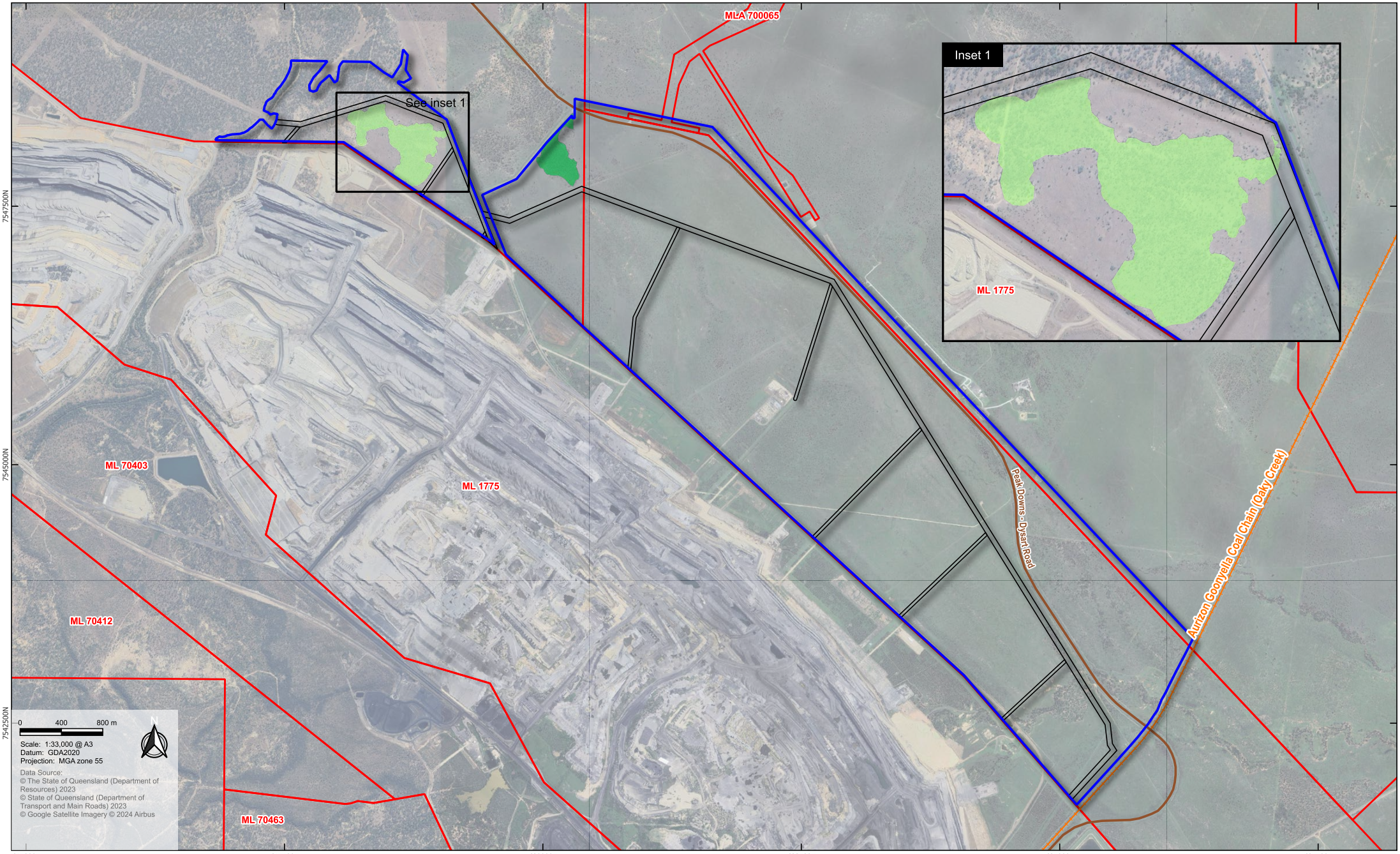
BM Alliance Coal Operations Pty Ltd
Peak Downs Power Line Realignment
MNES Management Plan

Figure A1
Ground-truthed TEC and wetland mapping – Study area



Legend

- Study area
- Action area
- Mining leases
- State controlled roads
- Railways

Ornamental Snake habitat

- Preferred
- Marginal

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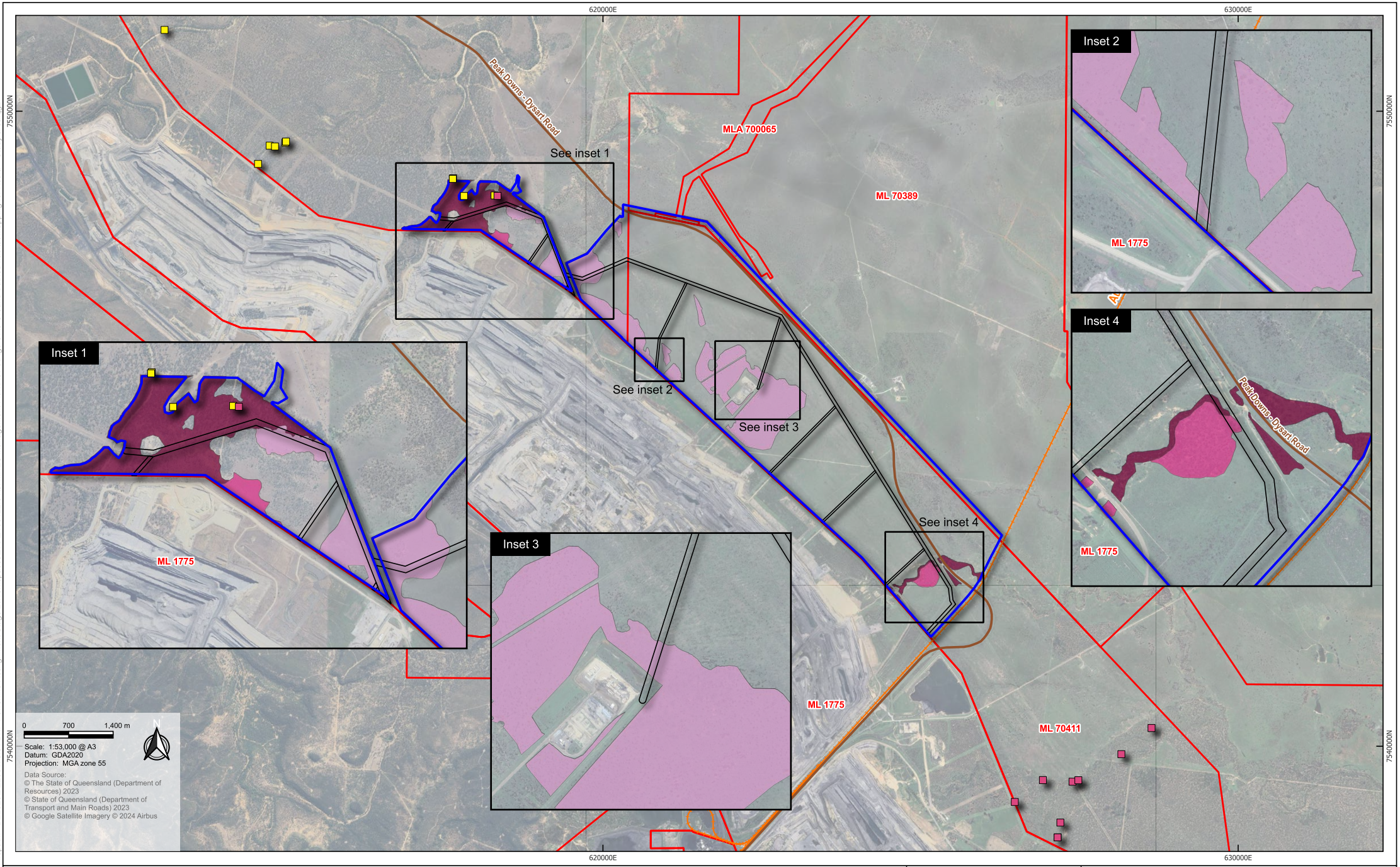
MNES Management Plan

Figure A2
Ground-truthed habitat mapping for Ornamental Snake – Study area



Legend

- Study area
- Action area
- Mining leases
- State controlled roads
- Railways

Survey records

- Koala (Ausecology 2021-2022)
- Koala – scat or scratches (Ausecology 2019)

Koala habitat

- Preferred
- Suitable
- Marginal

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BMA — BHP Mitsubishi Alliance

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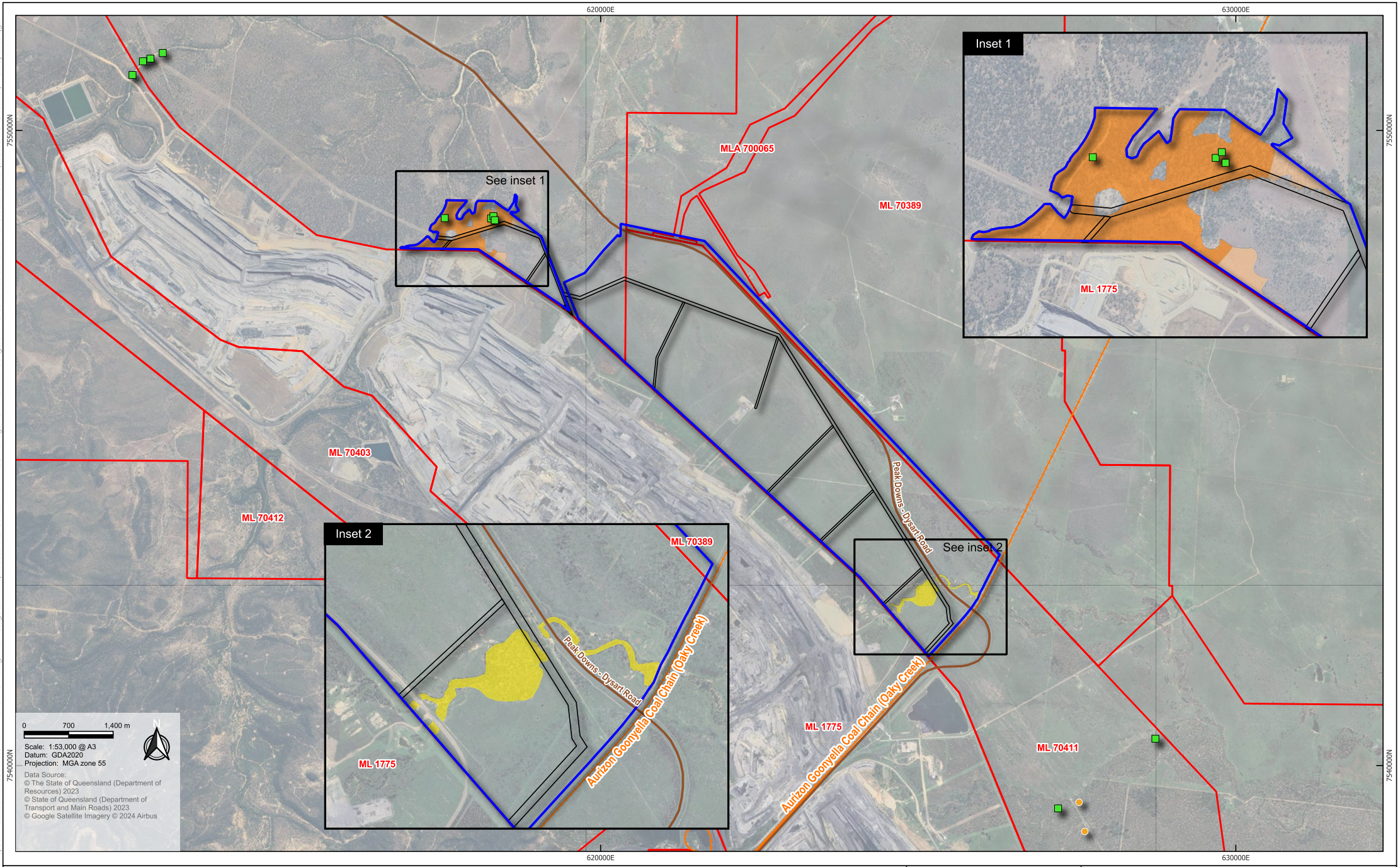
MNES Management Plan

Figure A3
Ground-truthed habitat for Koala – Study area



Filepath: -BE2020\BE200178.01 BHP Powerline Realignment Stage 2\Workspaces\BAA2400122.0113. MNES Management Plan\Rev 0\Figure A4 Ground-truthed habitat for Greater Glider (southern and central) – Study area.qgz

Legend

- Study area
- Action area
- Mining leases
- State controlled roads
- Railways

Survey records

- Greater Glider (AECOM 2020)
- Greater Glider (Ausecology 2021-2022)

Greater Glider habitat

- Preferred
- Suitable
- Marginal

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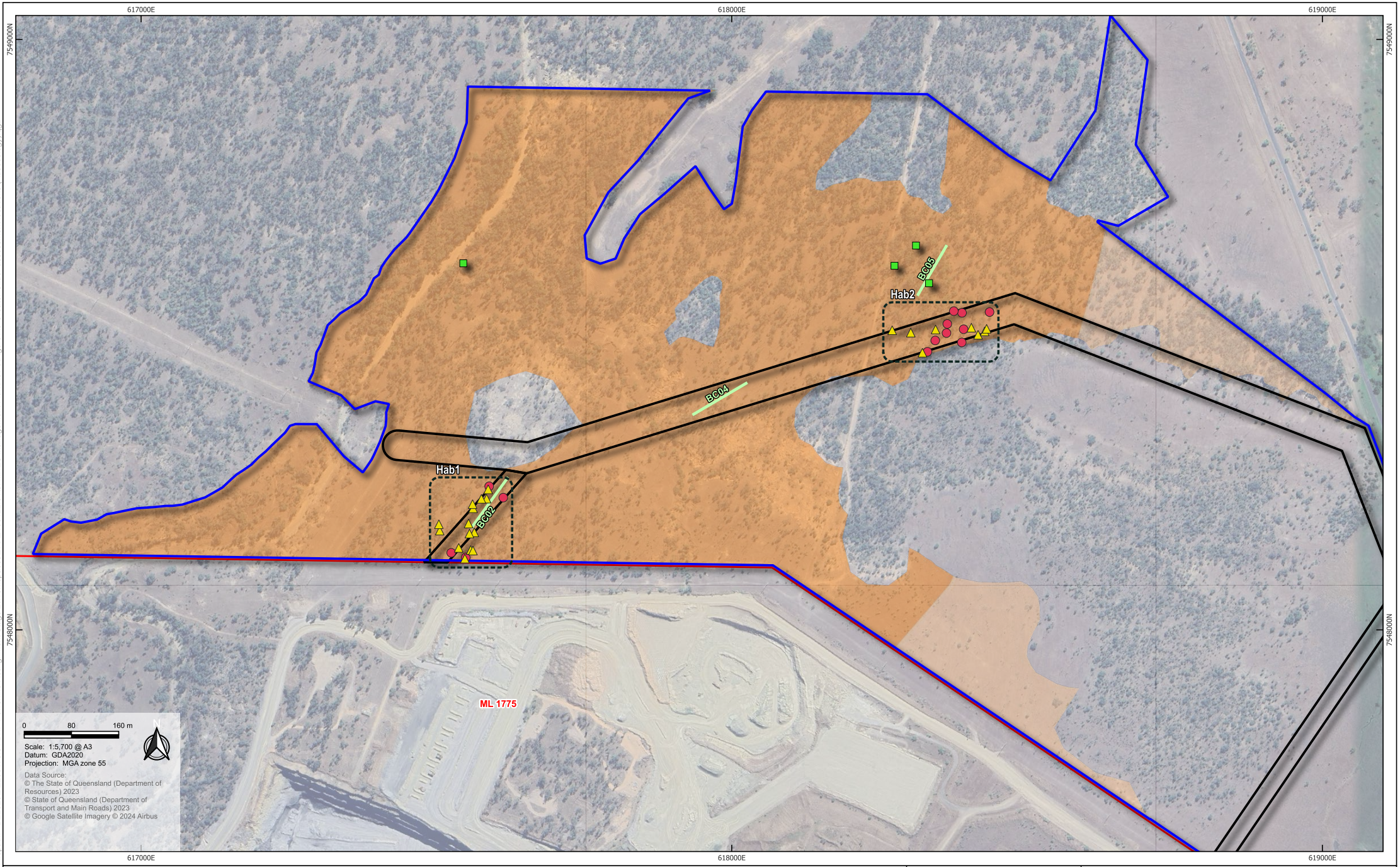
MNES Management Plan

Figure A4
Ground-truthed habitat for Greater Glider (southern and central) – Study area



Filepath: ~BE2020\BE200178.01 BHP Powerline Realignment Stage 2\Workspaces\BAA2400122.0113. MNES Management Plan\Rev 0\Figure A5 Greater Glider assessment locations (Ausecology).qgz

Legend

- Study area
- Action area
- Mining leases
- Biocondition assessment sites

Greater Glider habitat

- Preferred
- Suitable

Survey records

- Greater Glider (Ausecology 2019)
- Habitat assessment sites
- Current den trees
- Future den trees

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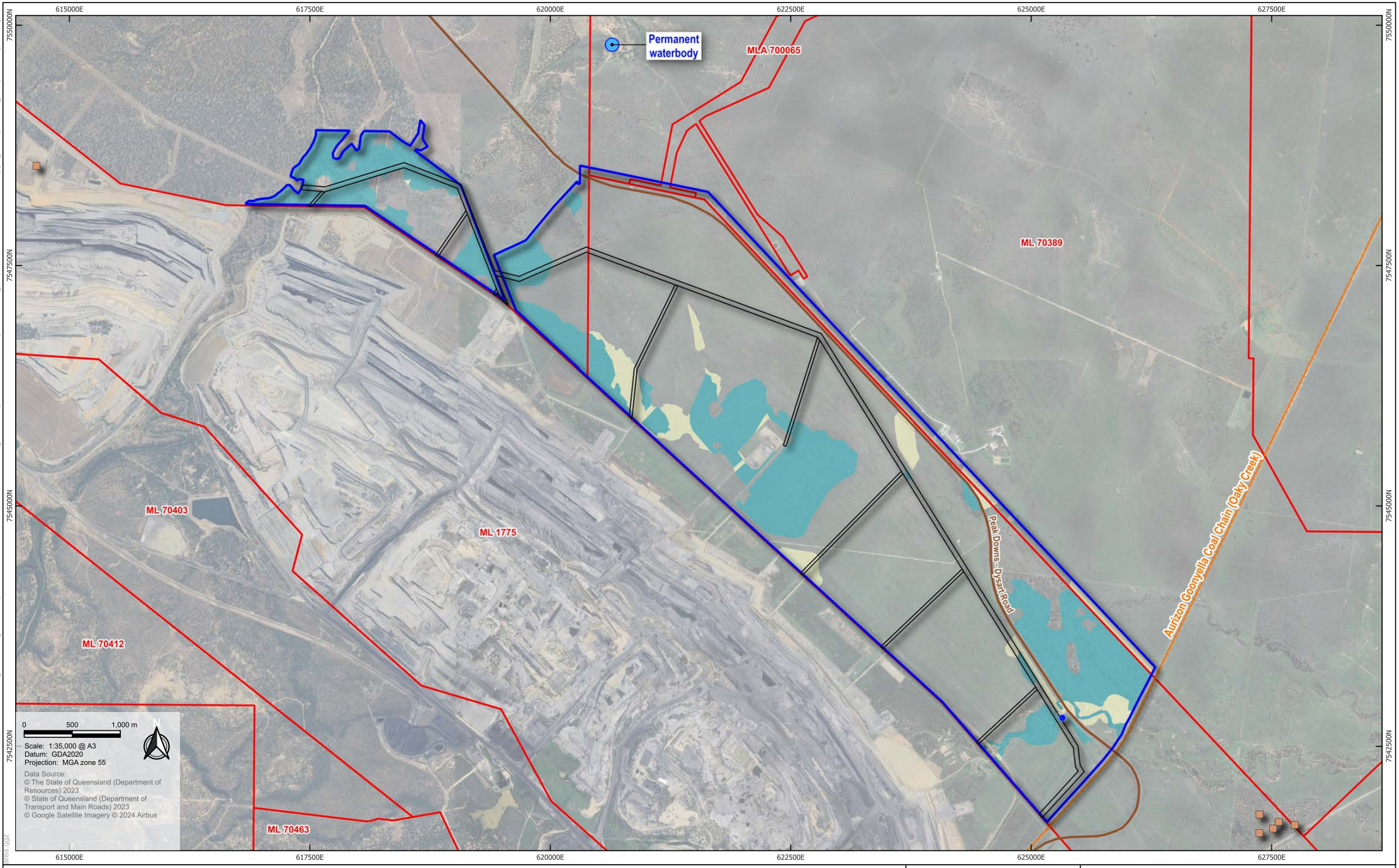
Peak Downs Power Line Realignment
MNES Management Plan

Figure A5
Greater Glider habitat assessment locations and data (Ausecology)



Legend

- Study area
- Action area
- Mining leases
- State controlled roads
- Railways
- Permanent waterbody

Squatter Pigeon habitat

- Suitable
- Marginal

Survey records

- Squatter Pigeon (Aurecon 2013)
- Squatter Pigeon (Ausecology 2022)

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Peak Downs Power Line Realignment
MNES Management Plan

Figure A6
Ground-truthed habitat mapping for Squatter Pigeon (southern) – Study area

14 Appendix B

Risk Assessment

Impact Type	Relevant MNES	Risk	Considerations	Inherent Risk Rating			Avoidance / Mitigating / Management Controls	Residual Risk Rating		
				Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Vegetation clearing	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Removal of vegetation that provides foraging and/or breeding habitat for a threatened species and ecological communities.	• Occurs in a disturbed landscape impacted by cattle grazing activities, and adjacent to existing mining activities • Regrowth vegetation in the Disturbance footprint provides limited value for MNES • Substantial undisturbed remnant vegetation is present in the surrounding area which provides habitat for MNES	E	2	High	• Refinement of the alignment was undertaken during the design phase to avoid identified higher value habitats and TECs as far as practicable • The original disturbance impact included a corridor up to 60 m wide for both the main lines and the stub lines (now 50 m wide) • Infrastructure located away from sensitive ecological values as much as feasible • Access track disturbance reduced to 10 m wide • Activities involving grubbing and topsoil removal will be restricted to the construction access track • Topsoil and natural grassland will remain intact (excluding the 10 m wide access track) within the 50 m wide corridor, with only trees and shrubs required to be removed to reduce the fire hazard and maintain safe operational clearance for the power lines. • The original extent of Natural Grassland TEC to be impacted was 2.55 ha. Through avoidance and refinement, this has been reduced to 0.57 ha. • The 10 m wide construction access track will not be formalised as a gravel access track which would typically result in preventing the vegetation regrowth. • Educating employees and contractors on fauna and flora management • Vegetation clearing extents will be clearly demarcated	E	1	Medium
Fragmentation, connectivity and edge effects	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Reduction in ability for threatened MNES species to disperse to adjacent habitat and move safely through the area.	• Most of the MNES species with potential to be present are mobile species that will not be impacted by the Proposed action • Vegetation communities present are already very open in structure • Much of the landscape has already been heavily impacted by tree clearing	C	2	Medium	• Refinement of the alignment was undertaken during the design phase to avoid fragmenting patches of potential habitat as far as practicable • The original disturbance impact included a corridor up to 60 m wide for both the main lines and the stub lines (now 50 m wide) • Infrastructure situated in already cleared areas wherever possible • Vegetation clearing extents will be clearly demarcated	C	1	Low

Impact Type	Relevant MNES	Risk	Considerations	Inherent Risk Rating			Avoidance / Mitigating / Management Controls	Residual Risk Rating		
				Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Fauna mortality	Koala, Greater Glider, Squatter Pigeon	Injury or death during clearing.	• Fauna of low mobility are at risk of injury or death from tree felling and heavy machinery/vehicular movements during construction	C	2	Medium	• Tree clearing will only occur within designated areas and only during designated time periods • The alignment has been designed to avoid the clearing of mature trees as much as practical to minimise potential impact to Greater Glider and Koala, should the species occur • Fauna spotter-catchers (licensed) will be present prior and during vegetation clearing • Fauna spotter-catchers (licensed) will conduct pre-clearance survey prior to vegetation clearing activities and will be present during vegetation clearing. • Educating employees and contractors on fauna management • Vegetation clearing extents will be clearly demarcated • Onsite speed limits will be established to limit the potential for vehicle strike	C	1	Low
Weeds and pest animals	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Dispersal of weeds by vehicles, machinery, and people leading to habitat degradation. Loss of food resources and habitat degradation can occur from feral animals.	• Wild dog and feral cats were recorded onsite and Red Fox is also likely present • Issues with weeds and pest animals are already present and likely to have been exacerbated by existing cattle grazing • The Disturbance footprint and surrounds is dominated by Buffel Grass and Parthenium (Weed of National Significance) • The weeds and pests currently occurring are not expected to significantly proliferate in response to the Proposed action	C	2	Medium	• Vegetation clearing reduced to 50 m in width • Activities involving grubbing and topsoil removal will be restricted to the construction access track • The 10 m wide construction access track will not be formalised as a gravel access track which would typically result in preventing the vegetation regrowth. • Implement biosecurity hygiene and Weed and Feral Animal Management procedures, which are already utilised as part of PDM operations • Vehicle wash-downs required for new vehicles and plant entering the site during construction and operation • Appropriate disposal and storage of putrescible wastes • Disturbed areas that are no longer required will be allowed to naturally regenerate • Weed management to be implemented in Grassland TEC areas that are regenerating until groundcover is established	C	1	Low
Airborne dust and noise	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Dust may reduce habitat quality. Loss of useable habitat in, and adjacent to, the Disturbance footprint due to noise disturbance.	• The Disturbance footprint is close to PDM operations, which already generates dust and noise impacts	C	1	Low	• Clearing of groundcover reduced to 10 m wide access track • Construction activities will be carried out during daylight hours • Activities involving grubbing and topsoil removal will be restricted to the construction access track • Monitoring of weather conditions to inform planned activities to avoid dry and windy weather • Dust suppression during construction activities • Onsite speed limits will be established to minimise dust nuisance • Disturbed areas that are no longer required will be allowed to naturally regenerate with groundcover	B	1	Low

Impact Type	Relevant MNES	Risk	Considerations	Inherent Risk Rating			Avoidance / Mitigating / Management Controls	Residual Risk Rating		
				Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Bushfire	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Fires from machinery, activities occurring on site and/or personnel. Hot bushfires can cause temporary and permanent losses of habitats and result in injury/mortality of threatened fauna species.	• Mapped as 'Medium potential bushfire intensity'	C	3	High	• Topsoil and natural grassland will remain intact (excluding the 10 m wide access track) within the 50 m wide corridor, with only trees and shrubs required to be removed to reduce the fire hazard and maintain safe operational clearance for the power lines • Implement fire management and controls, which are already utilised as part of PDM operations under the BMA Site Bushfire Management Plan • During operations, the entire area will be managed through slashing and grazing to keep fuel loads controlled • Monitor weather conditions to inform planned activities to avoid high fire-risk weather • Designated smoking areas • Fire-fighting equipment available on site with appropriate staff training	B	2	Low
Water quality	Natural Grassland TEC, Brigalow TEC, *Dichanthium queenslandicum*, Squatter Pigeon, Koala, Greater Glider, Ornamental Snake	Reduced habitat diversity, turbidity impacting light penetration on submerged aquatic plants, impede movement of aquatic fauna, bank instability.	• Disturbance footprint intersects four minor drainage lines including three stream order 1 and one stream order 2 creek lines • All of the creeks are considered highly ephemeral in nature and all drain north from PDM	C	1	Low	• Clearing of groundcover reduced to 10 m wide access track • Power line poles located outside of drainage lines • Implement erosion and sediment controls, which are already utilised as part of PDM operations • Conduct works in times of low or now flow within watercourses • Disturbed areas that are no longer required will be allowed to naturally regenerate • Bed level crossings will be installed to minimise impacts to waterways • Washdowns and refuelling will be carried out within designated areas, away from watercourses • Applicable materials/chemicals for the Proposed action will be stored within storage/bunded sites in the PDM mine infrastructure area	B	1	Low