PEAK DOWNS MINE CONTINUATION PROJECT

INITIAL ADVICE STATEMENT

23 March 2022

Final

BHP Mitsubishi Alliance

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PLATES

LIST OF APPENDICES

EXECUTIVE SUMMARY

BM Alliance Coal Operations Pty Ltd (BMA), owned 50:50 by BHP Group Limited and Mitsubishi Development Pty Ltd, is Australia's largest supplier of seaborne metallurgical coal and operates seven mines in the Bowen Basin.

With approximately 12,000 full-time equivalent (FTE) employees and contractors, BMA is the largest employer in the Central Queensland region and plays a key role in the economic development of Central Queensland. BMA's operations provide significant benefits to local communities, the broader Central Queensland region and to the Queensland State economy as a whole.

The Peak Downs Mine is an existing, open cut metallurgical coal mine located within the Isaac Regional Local Government Area, approximately 30 kilometres south-east of Moranbah, within the Bowen Basin mining region.

The Peak Downs Mine operates in accordance with Environmental Authority (EA) EPML00318213.

The Peak Downs Mine Continuation Project (the Project) includes activities/actions on the Mining Lease (ML) 70411, ML 1775 and ML 1885, and off-lease infrastructure activities.

The Project is seeking approval for:

- Federal:
  - federal approvals under the *Environment Protection and Biodiversity Conservation Act 1999* for ML 70411 (SA 1 and 2), nil SA and the nil surface areas of ML 1775 and ML 1885; and
  - off-lease infrastructure approvals, including a road and infrastructure corridor.
- State:
  - surface area rights to be granted in relation to certain areas within ML 70411, ML 1775 and ML 1885, under the *Mineral Resources Act 1989*;
  - amendments to the existing Environmental Authority under the *Environmental Protection Act 1994* (EP Act) for activities on the nil surface areas; and
  - off-lease infrastructure approvals, including a road and infrastructure corridor.

As the Project is a continuation of Peak Downs Mine operations, elements of the Project will involve amending activities within areas for which BMA holds existing state approvals. This includes the development of creek diversions and potential mine affected water release points. Following detailed project design this information will be included in the Environmental Impact Statement (EIS) Project Description and the potential impacts will be assessed accordingly.

The Project proposes the ongoing development of the existing Peak Downs Mine with extraction of additional coal reserves within ML 70411, ML 1885 and part of ML 1775. The extraction of additional coal reserves within the Project area would be supported by the development of new supporting infrastructure, and the use and augmentation of the significant existing on-site infrastructure (rail spur and loop, coal handling and preparation plant [CHPP] and other associated infrastructure), as well as the relocation of regional infrastructure such as roads, electricity transmission lines and water pipelines.

The Project would ensure that the Peak Downs Mine will continue to produce up to 18 million tonnes per annum (Mtpa) of product (metallurgical) coal for up to approximately 93 years. The Project is expected to facilitate the continuation of significant employment and economic benefits from the Peak Downs Mine to the local area, region and State.

The Project would include, although not be limited to, the following primary components and activities:

- open cut mining (dragline and truck and shovel methods) of run-of-mine (ROM) coal from the Moranbah Coal Measures in ML 70411, ML 1885 and part of ML 1775;
- continued handling and processing of up to 20 Mtpa of ROM coal at the Peak Downs Mine CHPP;
- extension of the mine life by up to approximately 93 years;
- a peak operational workforce of approximately 2,400 FTE personnel (including labour hire and contractors);
- continued use of the existing mine infrastructure area, including on-site CHPP, and general coal handling and rail loading facilities and other existing and approved supporting mine infrastructure;
- continued transport of up to 11 Mtpa of ROM coal to Caval Ridge Mine via an overland conveyor to be processed at the Caval Ridge Mine CHPP;

- continued rail transport of approximately 18 Mtpa of product coal to the Hay Point Coal Terminal, near Mackay, for export;
- continued use of existing accommodation in the region, including houses in local towns and the Workforce Accommodation Villages at Moranbah and Dysart, to house the workforce;
- realignment of Peak Downs Mine Road and associated rail level crossing;
- various infrastructure relocations to facilitate the mining extensions, including a section of the Moranbah 132 kilovolt (kV) No.2 Transmission Line, Ergon Single Line Earth Return, a 132 kV substation feeder, and the Eungella Water Pipeline Southern Extension;
- progressive development of watercourse diversions (diversion of Ripstone Creek and relocation of the low-flow Ripstone Creek and Boomerang Creek diversions) and levees;
- continued use of the Peak Downs Mine water management system and progressive development of new water management (e.g. pumps, pipelines and sediment dams) and water storage infrastructure to support the mine;
- controlled release of mine affected water in accordance with the conditions of EA EPML00318213 and/or beneficial industrial re-use;
- upgrades to workshops, electricity distribution and other ancillary infrastructure;
- construction and operation of new ancillary infrastructure in support of mining;
- construction and operation of additional mine access roads to access the Project mining areas;
- continued use of the existing tailings emplacement area and emplacement of coarse rejects and waste rock within mined out voids and out-of-pit emplacements;
- drilling and blasting of competent overburden;
- progressive construction and use of soil stockpiles;
- continued use of an existing on-site landfill to dispose of certain waste streams generated on-site and disposal of other types of waste in accordance with the conditions of EA EPML00318213;
- ongoing exploration activities; and
- other associated infrastructure, plant, equipment and activities.

Prior to the Project commencing and as part of the Project, BMA will continue to mine within existing authorised areas of ML 70411 and ML 1775 in accordance with existing or future State and Commonwealth approvals, and undertake exploration within ML 70411, ML 1885 and ML 1775 in accordance with existing or future State and Commonwealth approvals.

Changes to land uses would be managed by progressively rehabilitating the land consistent with the current EA EPML00318213 for the Peak Downs Mine, noting that the Peak Downs Mine is transitioning to the Progressive Rehabilitation and Closure Plan (PRC Plan) regime under the EP Act.

The Project's final landform would be designed in consideration of the proposed mine sequence, extraction rate and mine layout; minimising potential environmental, social and economic impacts; and BMA's corporate objectives.

As the Peak Downs Mine is an existing mine that is transitioning to the PRC Plan regime, the landforms for the mine as a whole (i.e. including the Project) will include a mix of some approved residual voids which will be Non-Use Management Areas, and areas with Post-Mining Land Uses. The Project's final landform may include additional residual voids, which would be designed and developed in consideration of relevant guidelines and legislative requirements.

BMA considers the Project meets the requirements for declaration as a 'coordinated project' for which an Environmental Impact Statement is required under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

This Initial Advice Statement has been prepared by BMA in accordance with section 27AB(a) of the SDPWO Act to support an application to the Coordinator-General to declare the Project a Coordinated Project for which an EIS is required.

This Initial Advice Statement provides an overview of the Project to inform the preparation of the Terms of Reference for an Environmental Impact Statement for the Project.

1 INTRODUCTION

1.1 BACKGROUND

Peak Downs Mine

The Peak Downs Mine is an existing, open cut metallurgical coal mine located within the Isaac Regional Local Government Area (LGA), approximately 30 kilometres (km) south-east of Moranbah, within the Bowen Basin mining region (Figures 1, 2a and 2b).

BM Alliance Coal Operations Pty Ltd (BMA), is the owner and operator of the Peak Downs Mine (Plate 1) which has been in operation since 1972.

The Peak Downs Mine extracts coal from the Moranbah Coal Measures using draglines and truck and shovel fleets for overburden removal. The Peak Downs Mine produces hard coking coal for use in steelmaking.

The extraction of coking coal from the Peak Downs Mine provides benefits at national, State and local levels.

Local benefits are realised through:

- local employment with economic flow-on benefits in the Isaac Regional LGA;
- engagement of local businesses to provide goods and services; and
- community investment programs.

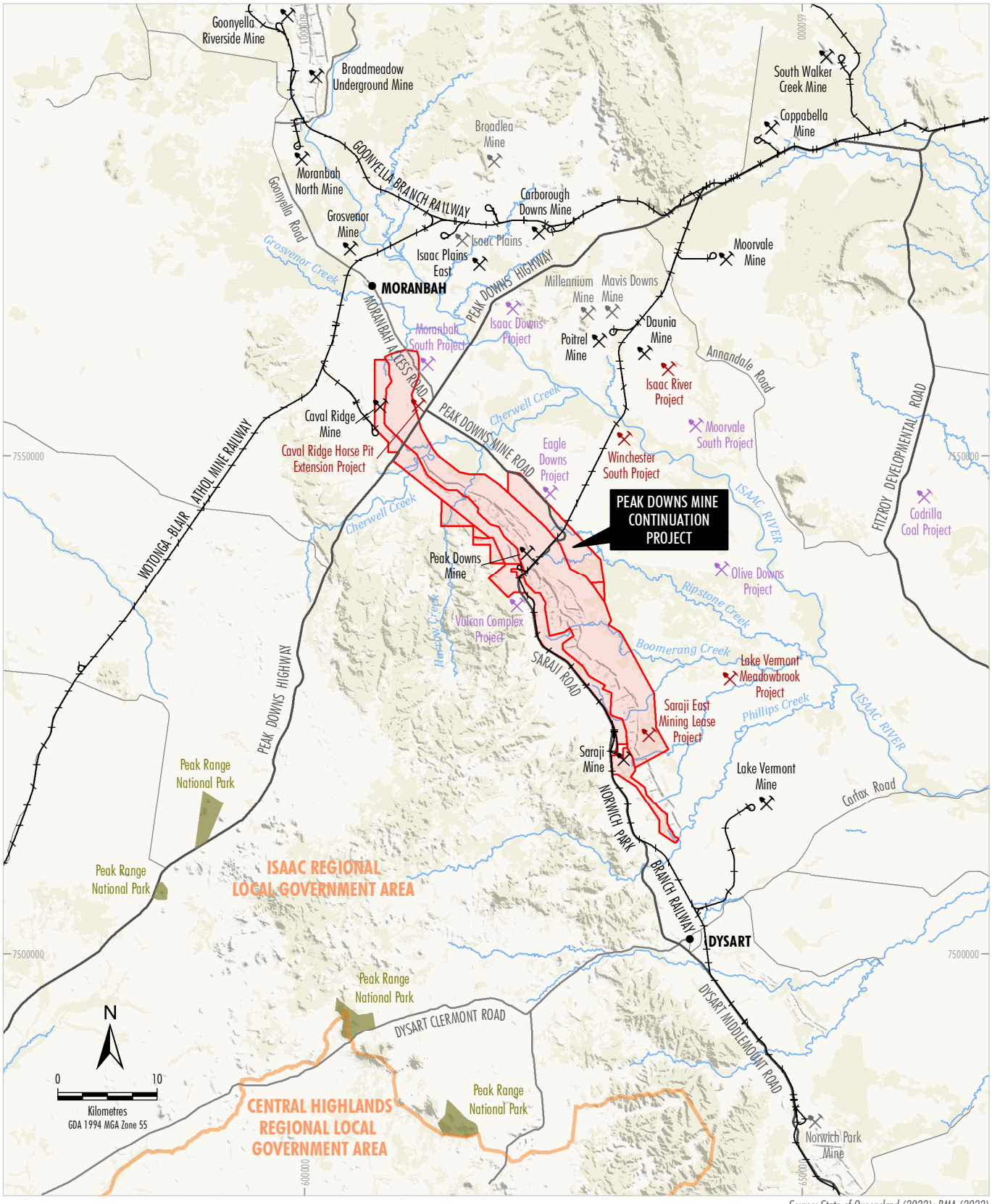
Overview of the Project

BMA proposes to develop the Peak Downs Mine Continuation Project (the Project), which will involve continued development of open cut coal mining operations at the existing Peak Downs Mine, entirely contained within the existing Mining Lease (ML) 70411, ML 1885 and ML 1775, and extraction of additional coal reserves within ML 70411, ML 1885 and part of ML 1775.

As the Project is a continuation of Peak Downs Mine operations, elements of the Project will involve amending activities within areas for which BMA holds existing state approvals. This includes the development of creek diversions and potential mine affected water release points. Following detailed project design this information will be included in the Environmental Impact Statement (EIS) Project Description and the potential impacts will be assessed accordingly.

The extraction of additional coal reserves within the Project area would be supported by the development of new supporting infrastructure, and the use and augmentation of the significant existing on-site infrastructure (rail spur and loop, coal handling and preparation plant [CHPP] and other associated infrastructure), as well as the relocation of regional infrastructure such as roads, electricity transmission lines and water pipelines (Figure 3).

Plate 1 – Peak Downs Mine



Source: State of Queensland (2022); BMA (2022)

LEGEND

- Mining Lease
- Local Government Area
- National Park
- Railway
- Major Road
- Major Watercourse

Other Coal Projects

- Operating
- Approved
- Proposed
- Care and Maintenance

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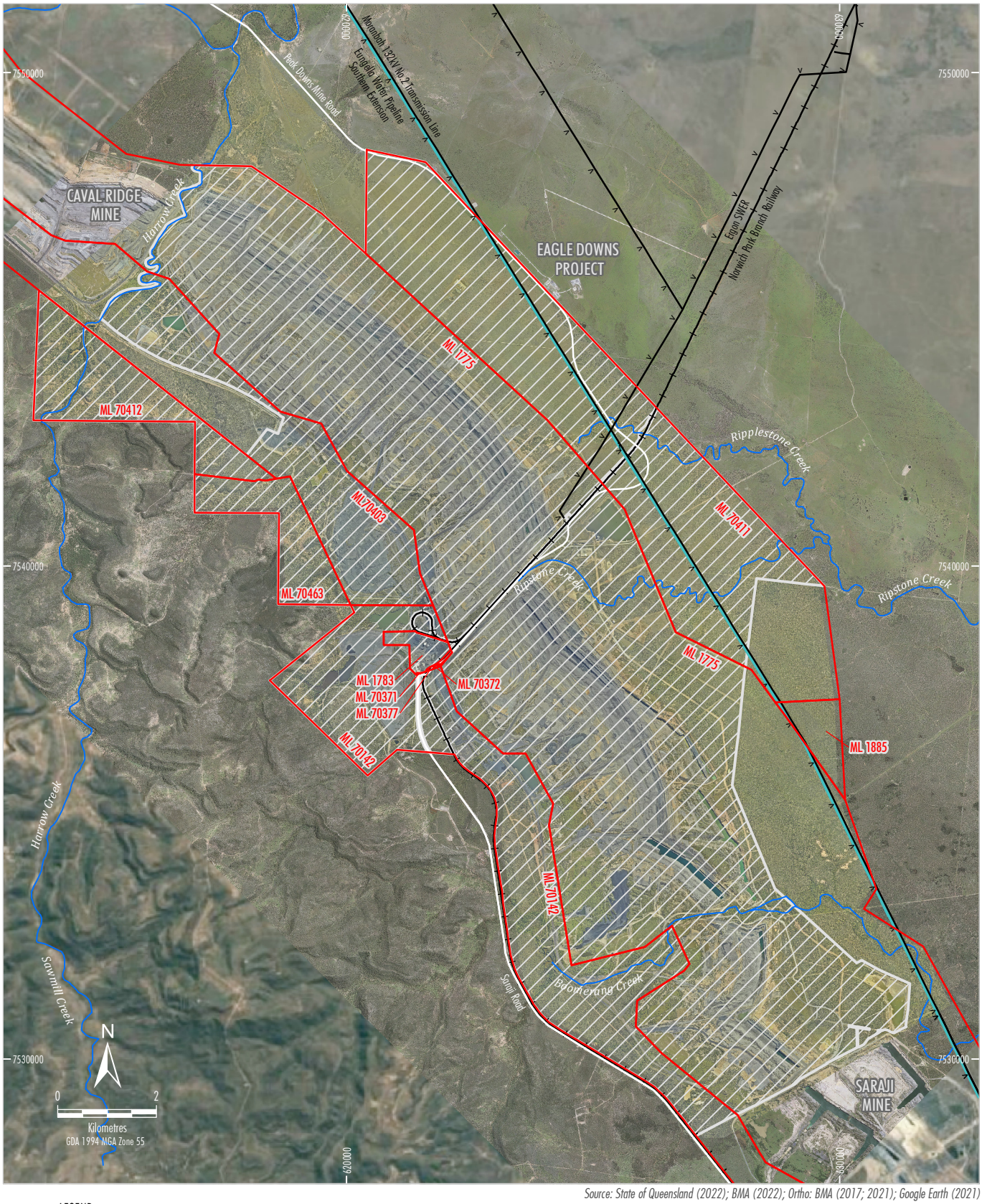
PEAK DOWNS MINE CONTINUATION PROJECT

Regional Location

Figure 1



Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension
- Area of Existing Surface Rights and EA EPML00318213

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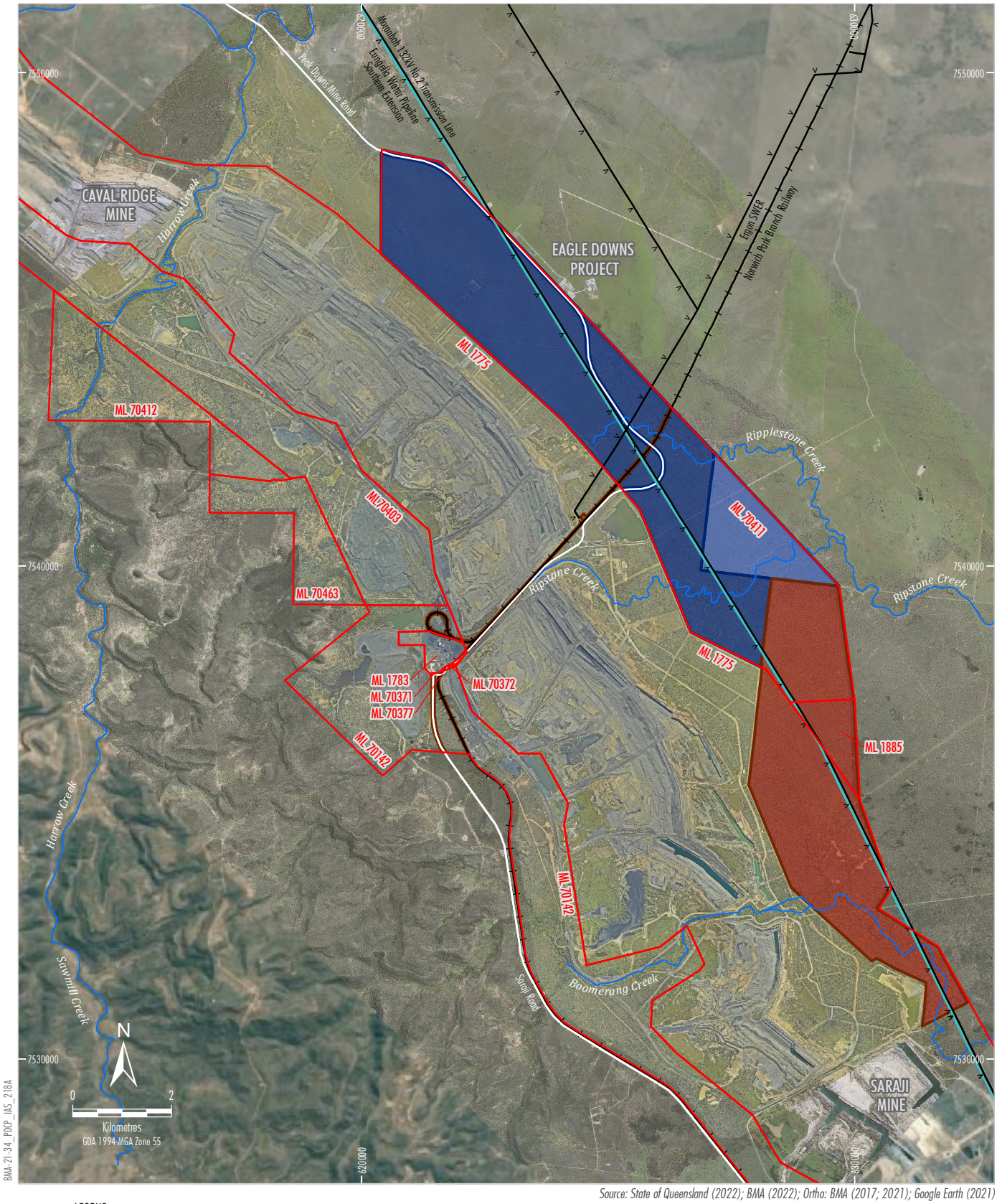
PEAK DOWNS MINE CONTINUATION PROJECT

Peak Downs Mine

Figure 2a



Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension
- Surface Area 1 of ML 70411
- Surface Area 2 of ML 70411
- Nil Surface Rights

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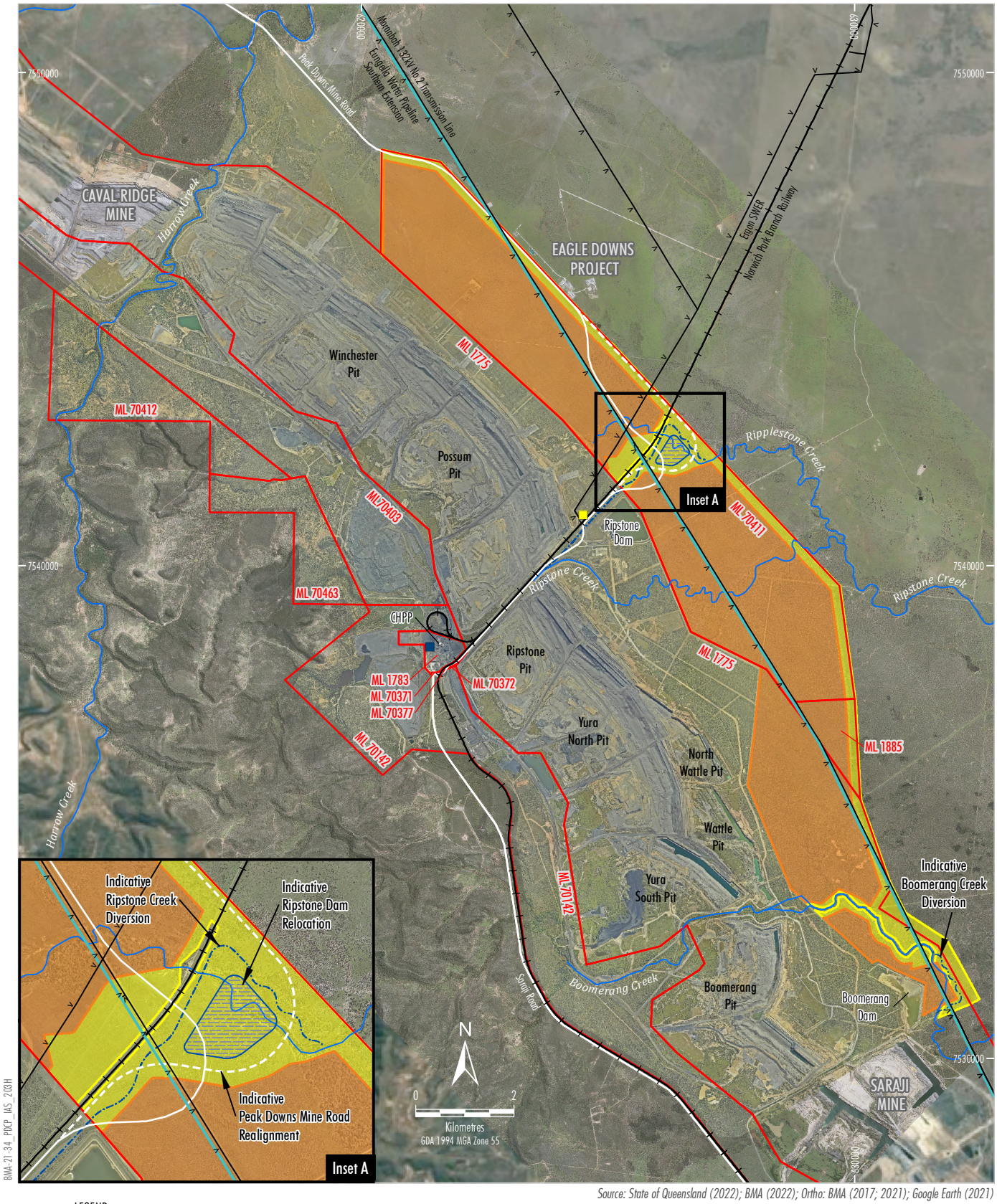
PEAK DOWNS MINE CONTINUATION PROJECT

Surface Area 1 and 2 of ML 70411 and Area of Nil Surface Rights at the Peak Downs Mine

Figure 2b



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Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension
- Peak Downs Mine Main Substation
- QR/Aurizon Substation

Project Components [1]

- Proposed Project Area
- Proposed Infrastructure Area
- Indicative Ripstone Dam Relocation
- Indicative Peak Downs Mine Road Realignment
- Indicative Creek Diversion

Note: [1] Excludes some incidental Project components such as water management, access tracks, topsoil stockpiles, power supply, temporary offices, and other ancillary works and construction disturbance.

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PEAK DOWNS MINE CONTINUATION PROJECT

Project Conceptual Arrangement

Figure 3

The Project would ensure that the Peak Downs Mine will continue to produce up to 18 million tonnes per annum (Mtpa) of product (metallurgical) coal for up to approximately 93 years. The Project is expected to facilitate the continuation of significant employment and economic benefits from the Peak Downs Mine to the local area, region and State.

Section 3 provides a more detailed description of the Project and its components.

Given the above, BMA considers the Project meets the requirements for declaration as a 'coordinated project' for which an EIS is required under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act), as it (per section 27[2][b]):

- would involve complex approval requirements, involving local, State and Commonwealth governments;
- would require assessment of significant environmental effects;
- would have strategic significance to the local area, region and State, including continuation of the existing economic and social benefits from the Peak Downs Mine, capital investment and employment opportunities; and
- would have significant infrastructure requirements associated with the realignment of Peak Downs Mine Road and regional power and water supply infrastructure, and the development of other associated infrastructure required to support the extension.

1.2 PURPOSE AND SCOPE OF THE IAS

This Initial Advice Statement (IAS) has been prepared by BMA in accordance with section 27AB(a) of the SDPWO Act to support an application to the Coordinator-General to declare the Project a Coordinated Project for which an EIS is required.

In preparing this IAS, BMA has had regard to the *Application Requirements for a 'Coordinated Project' Declaration* (Department of State Development, 2015) and has prepared this IAS to:

- assist the Coordinator-General in deciding whether to declare the Project a Coordinated Project;
- enable stakeholders to determine the nature and relevance of the proposal to them; and
- subsequently assist the Coordinator-General to prepare draft Terms of Reference for the EIS for the Project.

This IAS includes the indicative open cut extent for the Project located within ML 70411, ML 1885 and part of ML 1775.

The relocation of various regional infrastructure (e.g. realignment of Peak Downs Mine Road and associated level crossing, relocation of regional electricity transmission lines and the Eungella Water Pipeline Southern Extension), and the continued use of the Peak Downs Mine on-site infrastructure (rail loop and spur and CHPP), will be required to facilitate mining activities within the Project area.

2 THE PROPONENT

The proponent for the Project is BMA, as manager and agent on behalf of the Central Queensland Coal Associates Joint Venture (CQCA). CQCA is an unincorporated joint venture between BHP Group Limited (BHP) (50 per cent) and Mitsubishi Development Pty Ltd (Mitsubishi Development) (50 per cent).

The contact details for the proponent are:

BM Alliance Coal Operations Pty Ltd
Level 14, 480 Queen Street
BRISBANE QLD 4000
Phone: 07 3329 2679

BMA is operated by BHP and is Australia's largest supplier of seaborne metallurgical coal. BMA operates seven Bowen Basin mines: Blackwater, Broadmeadow, Goonyella Riverside, Peak Downs, Saraji, Caval Ridge and Daunia, as well as owning and operating the Hay Point Coal Terminal near Mackay. BMA also manages Norwich Park (otherwise known as Saraji South, but herein referred to as Norwich Park) Mine.

With approximately 12,000 full-time equivalent (FTE) employees and contractors, BMA is the largest employer in the Central Queensland region and plays a key role in the economic development of Central Queensland. BMA's operations provide significant benefits to local communities, the broader Central Queensland region and to the Queensland State economy as a whole.

Environment

BMA is committed to the communities and the environments in which it operates. BMA regularly reviews environmental performance and publicly reports on progress.

BMA has a record of responsible environmental management and a strong commitment to continual improvement of environmental performance.

Sustainability

Sustainability is integral to how BMA contributes to social value creation. It is core to our strategy and sits at the heart of everything we do.

BMA puts health and safety first and aims to be environmentally responsible, respect human rights and support the communities in which it operates.

At a local level, sustainability is about managing our risks, reducing our adverse environmental, social, economic and cultural impacts, and supporting and sustaining the communities and environments in which we operate.

Capability

BMA has undertaken numerous technical and complex environmental impact assessments for its existing operations and has the necessary experience and financial capacity to deliver a comprehensive EIS.

The EIS for the Project would be delivered with the assistance of a highly capable project team which also has extensive experience in Queensland based mining approvals. This will ensure the required reporting is delivered in a timely and professional manner, inclusive of all of the necessary details and supporting information.

3 NATURE OF THE PROPOSAL

3.1 OVERVIEW OF THE PEAK DOWNS MINE

Mining leases were granted for the Peak Downs Mine under the *Central Queensland Coal Associates Agreement Act 1968* (CQCA Act) including ML 1775 (resource) and ML 1783 (industrial area) in 1983 and 1976, respectively, with mining operations commencing in April 1972. As mining progresses down-dip to the east, and to enable relocation and expansion of associated infrastructure, additional mining leases have been obtained under the *Mineral Resources Act 1989* (MR Act) (Table 1).

The Peak Downs Mine operates in accordance with Environmental Authority (EA) EPML00318213. The EA authorises Environmentally Relevant Activities (ERAs) within the Mine's tenements (Table 1).

All mining leases include authorisation for ERA 13 (mining black coal). However, this authorisation does not extend to areas within ML 1885 and parts of ML 70411 and ML 1775 where those mining leases do not presently include surface rights and are marked as 'Nil Surface Rights' on Figure 2b. Figure 2a shows the areas of existing surface rights under the mining leases and for which the EA EPML00318213 includes authorisation for ERA 13 (mining black coal).

It is noted that some additional approvals may be required to develop the existing Peak Downs Mine within the full area depicted as 'Area of Existing Surface Rights and EA EPML00318213' on Figure 2a (e.g. additional approvals under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]).

The Peak Downs Mine extracts coal from the Dysart and Harrow Creek coal seams of the Moranbah Coal Measures from eight open cut pits (Figure 3) to produce premium hard coking coal. The Peak Downs Mine has an operational capacity of up to 20 Mtpa of run-of-mine (ROM) coal.

Key infrastructure associated with the Peak Downs Mine includes the mine infrastructure area (MIA), including the Peak Downs Mine CHPP, rail spur and loop, train load-out facility, ROM coal pad and coal stockpiles, and other associated infrastructure to support mining operations.

Other infrastructure has been developed by BMA and other parties within the broader Bowen Basin region to support mining operations, including:

- Bingegang Water Pipeline, a 200 km water pipeline, traversing over and under the ground from the Bingegang Weir on the Mackenzie River to supply water to the Peak Downs, Saraji and Norwich Park Mines and other properties (for stock watering);
- Dysart and Moranbah workforce accommodation villages (WAVs); and
- Moranbah Airport.

3.2 SCOPE OF THE PROJECT

As the Peak Downs Mine requires approval for mining extensions outside of existing ML 1775 surface rights areas, BMA is proposing to expand the existing and authorised extent of open cut mining within ML 70411, ML 1885 and part of ML 1775 via the Project proposal (Plate 2).

The Project includes activities/actions on ML 70411, ML 1775 and ML 1885, and off-lease infrastructure activities.

The Project is seeking approval for:

- Federal:
  - federal approvals under the EPBC Act for ML 70411 (SA 1 and 2), nil SA and the nil surface areas of ML 1775 and ML 1885 (Figure 2b); and
  - off-lease infrastructure approvals, including a road and infrastructure corridor (Figure 3).
- State:
  - surface area rights to be granted in relation to certain areas within ML 70411, ML 1775 and ML 1885, under the MR Act;
  - amendments to the existing Environmental Authority under the *Environmental Protection Act 1994* (EP Act) for activities on the nil surface areas (Figure 2b); and
  - off-lease infrastructure approvals, including a road and infrastructure corridor (Figure 3).

Table 1
Existing Mining Tenements Associated with the Peak Downs Mine

Tenement	Expiry Date	Associated ERAs
ML 1775[1]	31/12/2031	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 tonnes [t] of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 equivalent persons [EP]).
ML 1783	31/12/2031	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 1885	31/12/2031	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70142	31/12/2031	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70371	30/4/2033	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70372	30/4/2034	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70377	30/9/2034	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70403[2]	30/12/2031	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70411	30/06/2038	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70412	28/2/2043	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 31 (mineral processing >100,000 t in a year), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).
ML 70463	30/4/2035	ERA 13 (mining black coal), ERA 8 (chemical storage of >50 t of dangerous goods class 1 or class 2), ERA 20 (metal recovery <100 t), ERA 56 (receiving and storing regulated waste), ERA 60 (operating a facility for disposing 50,000 to 100,000 t of waste in a year), ERA 63 (operating sewage treatment works with a total daily peak design capacity of >100 but ≤1,500 EP).

Note: Surface rights are provided for all Peak Downs Mine mining tenements except for ML 1885 and part of ML 70411 and ML 1775.

[1] Partly attributed to Peak Downs Mine, shared with Caval Ridge Mine and Saraji Mine.

[2] Partly attributed to Peak Downs Mine, shared with Caval Ridge Mine.

Plate 2 – Trucks Used for Overburden Removal at the Peak Downs Mine

As the Project is a continuation of Peak Downs Mine operations, elements of the Project will involve amending activities within areas for which BMA holds existing state approvals. This includes the development of creek diversions and potential mine affected water release points. Following detailed project design this information will be included in the EIS Project Description and the potential impacts will be assessed accordingly.

The Project would ensure the efficient continuation of coal mining operations at Peak Downs Mine by integrating operational activities in existing approved areas and proposed mining areas where surface rights are not currently available under ML 70411, ML 1885 and ML 1775 (Figure 2b). The existing Peak Downs Mine EA EPML00318213 would require an amendment under the EP Act to facilitate the development of the Project.

The Project would be supported by the development of new supporting infrastructure and the relocation/realignment of existing regional infrastructure.

The Project would provide continued employment of the existing Peak Downs Mine workforce, with short-term increases for Project construction and additional development requirements of up to approximately 160 personnel.

Inclusive of existing authorised and proposed extension areas where no surface rights are currently available, the Project would support the extraction of up to approximately 1,256 million tonnes (Mt) of ROM coal over a mine life of up to approximately 93 years. This ROM coal would be processed at the existing Peak Downs Mine CHPP and Caval Ridge CHPP to produce coking coal (metallurgical) products for use in steelmaking (approximately 2% being a thermal coal by-product).

The Project would include, although not be limited to, the following primary components and activities:

- open cut mining of ROM coal from the Moranbah Coal Measures in ML 70411, ML 1885 and part of ML 1775;
- continued handling and processing of up to 20 Mtpa of ROM coal at the Peak Downs Mine CHPP;
- extension of the mine life by up to approximately 93 years;
- a peak operational workforce of approximately 2,400 FTE personnel (including labour hire and contractors);
- continued use of the existing MIA, including on-site CHPP, and general coal handling and rail loading facilities and other existing and approved supporting mine infrastructure;
- continued transport of up to 11 Mtpa of ROM coal to Caval Ridge Mine via an overland conveyor to be processed at the Caval Ridge Mine CHPP;
- continued rail transport of approximately 18 Mtpa of product coal to the Hay Point Coal Terminal, near Mackay, for export;
- continued use of existing accommodation in the region, including houses in local towns and the WAVs at Moranbah and Dysart, to house the workforce;
- realignment of Peak Downs Mine Road and associated rail level crossing;
- various infrastructure relocations to facilitate the mining extensions, including a section of the Moranbah 132 kilovolt (kV) No.2 Transmission Line, Ergon Single Line Earth Return (SWER), a 132 kV substation feeder, and the Eungella Water Pipeline Southern Extension;
- watercourse diversions (diversion of Ripstone Creek and relocation of the low-flow Ripstone Creek and Boomerang Creek diversions) and levees;
- continued use of the Peak Downs Mine water management system and progressive development of new water management (e.g. pumps, pipelines and sediment dams) and water storage infrastructure to support the mine;
- controlled release of mine affected water in accordance with the conditions of EA EPML00318213 and/or beneficial industrial re-use;

- upgrades to workshops, electricity distribution and other ancillary infrastructure;
- additional mine access roads to access the Project mining areas;
- continued use of the existing fine rejects (tailings) emplacement area and emplacement of coarse rejects and waste rock (i.e. overburden and interburden) within mined out voids and out-of-pit emplacements;
- continued use of an existing on-site landfill to dispose of certain waste streams generated on-site and disposal of other types of waste in accordance with the conditions of EA EPML00318213;
- ongoing exploration activities; and
- other associated infrastructure, plant, equipment and activities.

Prior to the Project commencing and as part of the Project, BMA will continue to mine within existing authorised areas of ML 70411 and ML 1775 in accordance with existing or future State and Commonwealth approvals, and undertake exploration activities within ML 70411, ML 1885 and ML 1775 in accordance with existing or future State and Commonwealth approvals.

The indicative conceptual arrangement of the Project is shown on Figure 3. The indicative conceptual arrangement has been prepared to support the application for declaration as a Coordinated Project by the Coordinator-General under the SDPWO Act and is conceptual and subject to revision as part of further design and assessment.

Construction of the Project (specifically the infrastructure components) is likely to be carried out in stages and require construction workforces. When operating at peak production, the Project is anticipated to require an operational workforce of up to approximately 2,400 FTE personnel (comprising direct workforce personnel and additional contractors and labour hire required to support operations).

Figure 4 identifies the current Proposed Study Area for environmental assessments for the Project. The Proposed Study Area overlaps with areas of current and future mining activities which do not form part of the Project and the environmental assessments will be augmented to take into account those activities.

Some environmental assessments will also consider areas outside of the Proposed Study Area for the Project (e.g. surface water and groundwater assessments, biodiversity and amenity studies).

3.3 LAND USE

The Project is located within the Bowen Basin mining region. Coal and petroleum (i.e. coal seam gas [CSG]) mining exploration activities have been conducted within the Project area and surrounds for decades. Immediately adjacent to the Project are the existing BMA-owned Caval Ridge Mine and Saraji Mine to the north and south, respectively, and Aquila-owned Eagle Downs Mine to the east.

Land within the Project area is owned by BMA and private landholders (Figures 5 and 6), and has been extensively modified by cattle grazing and cropping agricultural land uses.

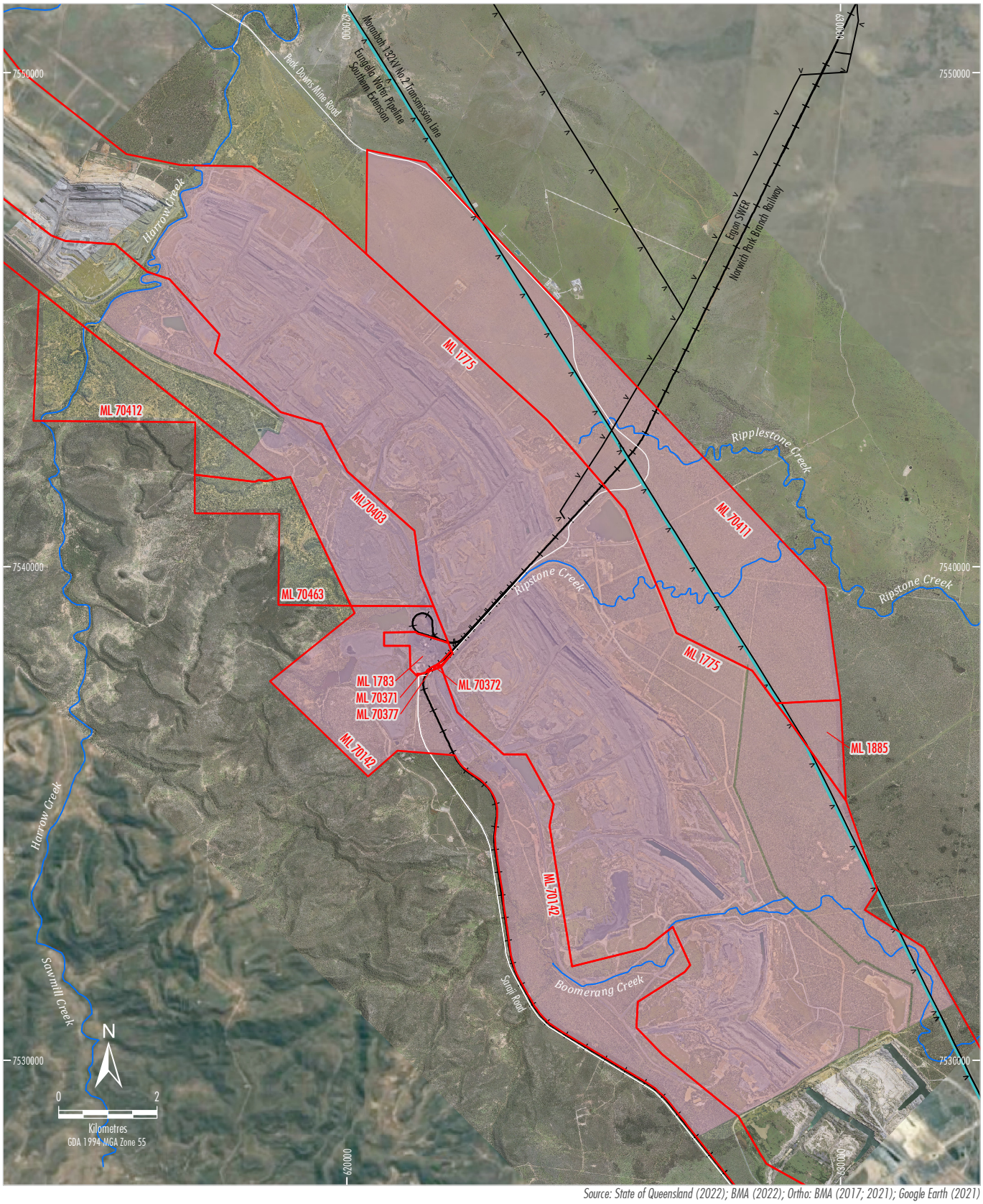
The Project area is located within "identified coal reserves" and the Regional Landscape and Rural Production Area zone, as mapped by the *Mackay, Isaac and Whitsunday Regional Plan* (Queensland Government, 2012). Consistent with the Regional Plan, the Project area is within the *Isaac Regional Planning Scheme 2021* Rural zone mapping.

A small area of land within the north-eastern part of ML 70411 is regionally mapped as a potential Strategic Cropping Area (SCA), an area of regional interest under the *Regional Planning Interests Act 2014* (RPI Act) (Figure 7). Field verification of the land shown as 'potential SCA' will be conducted during preparation of the EIS to determine whether the land meets the criteria for SCA. If required, the relevant provisions of the RPI Act associated with carrying out a resource activity within an area of regional interest will apply.

The closest Priority Agricultural Area (PAA) is located 130 km south-east of the Project and the Project is located outside of the Golden Mile and Central Highlands important agricultural areas.

3.4 PROJECT NEED, JUSTIFICATION AND ALTERNATIVES CONSIDERED

BMA operates seven mines in the Bowen Basin, with each asset being at a different stage in its mine and development life. Assets in the Bowen Basin have been progressively developed by BMA to meet long-term global demand for high quality metallurgical coals since the 1960s. BMA's strategy is to continue to develop its assets over the coming decades to allow market demand to be met through the most efficient development of resources.



BMA-21-34_PDCP_IAS_216B

Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension
- Proposed Study Area

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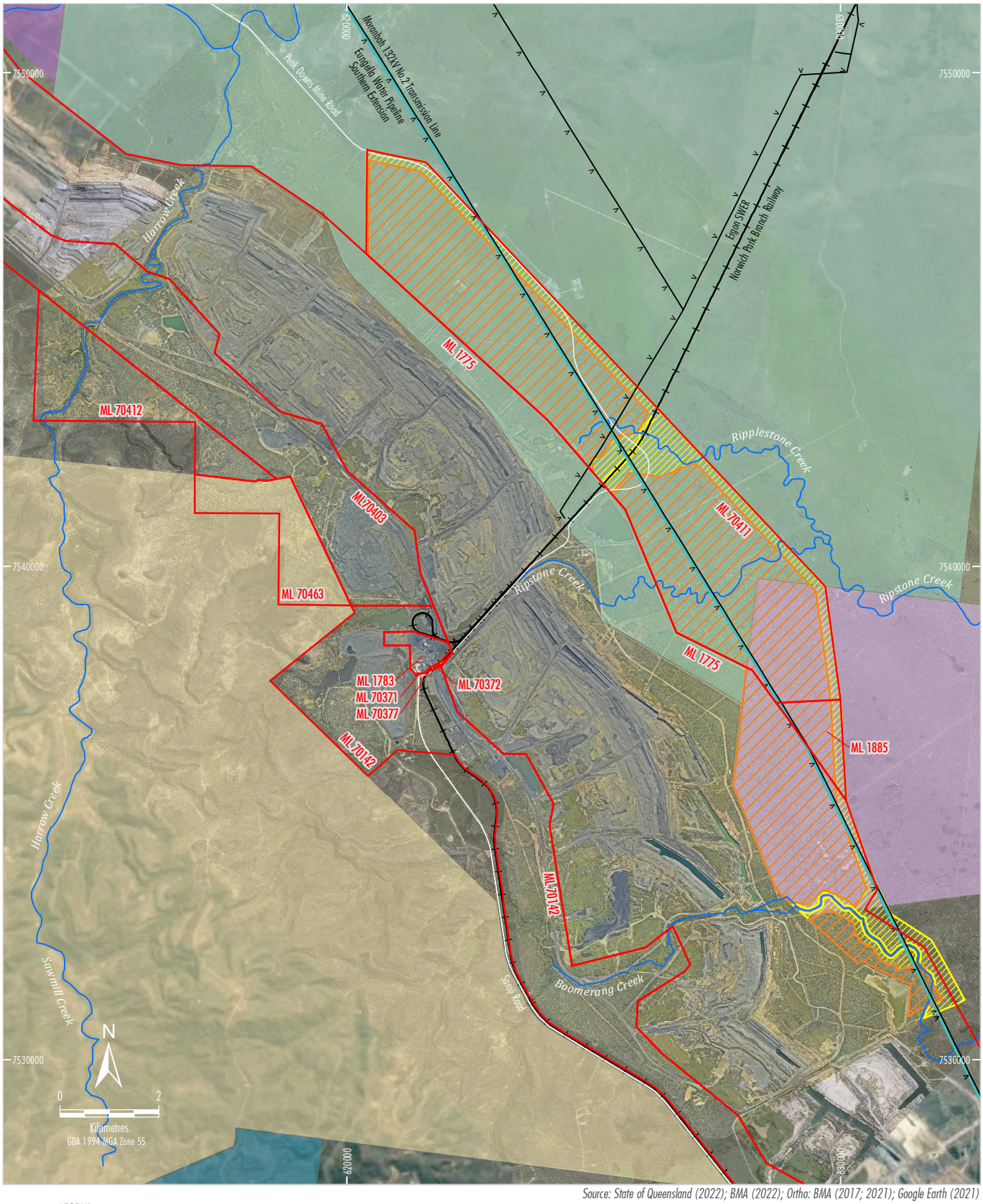
PEAK DOWNS MINE CONTINUATION PROJECT

Proposed Study Area

Figure 4



Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension

Property Name

- Buffel Park
- Logan Creek
- Luxor
- Vermont Park
- Winchester Downs

Project Components [1]

- Proposed Project Area
- Proposed Infrastructure Area

Note: [1] Excludes some incidental Project components such as water management, access tracks, topsoil stockpiles, power supply, temporary offices, and other ancillary works and construction disturbance.

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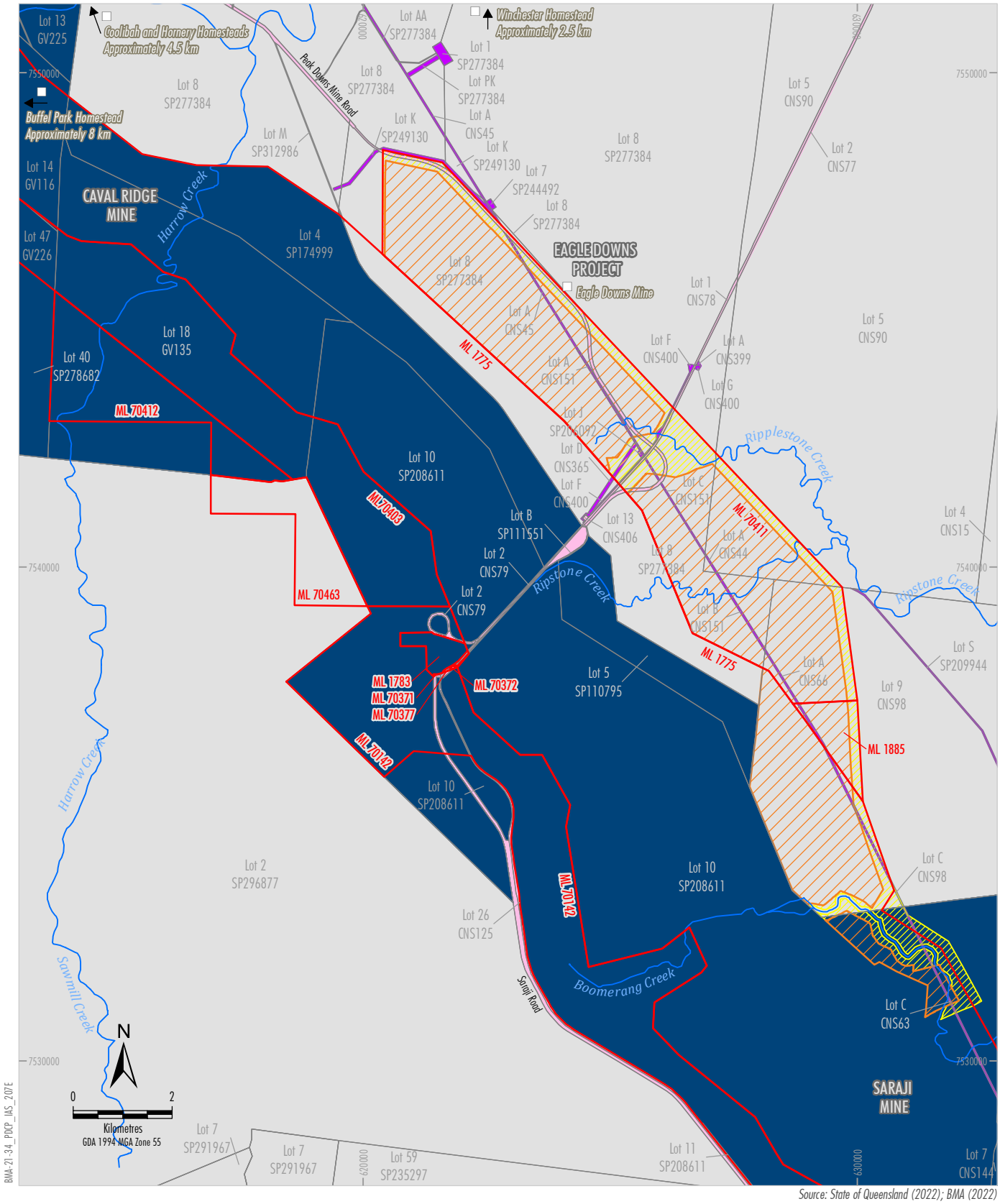
PEAK DOWNS MINE CONTINUATION PROJECT

Rural Properties

Figure 5



Source: State of Queensland (2022); BMA (2022)

LEGEND

- Mining Lease
- Watercourse
- Sensitive Receptor
- Lot Boundary

Land Ownership

- BHP and BHP and Others
- State of Queensland
- Utilities *
- Private

Project Components [1]

- Proposed Project Area
- Proposed Infrastructure Area

Note: [1] Excludes some incidental Project components such as water management, access tracks, topsoil stockpiles, power supply, temporary offices, and other ancillary works and construction disturbance.

** Utilities include:*
- Queensland Rail Limited
- Queensland Electricity Commission Limited
- Eungella Water Pipeline Pty Ltd
- Queensland Electricity Transmission Corporation Limited
- Central Queensland Pipeline Pty Ltd

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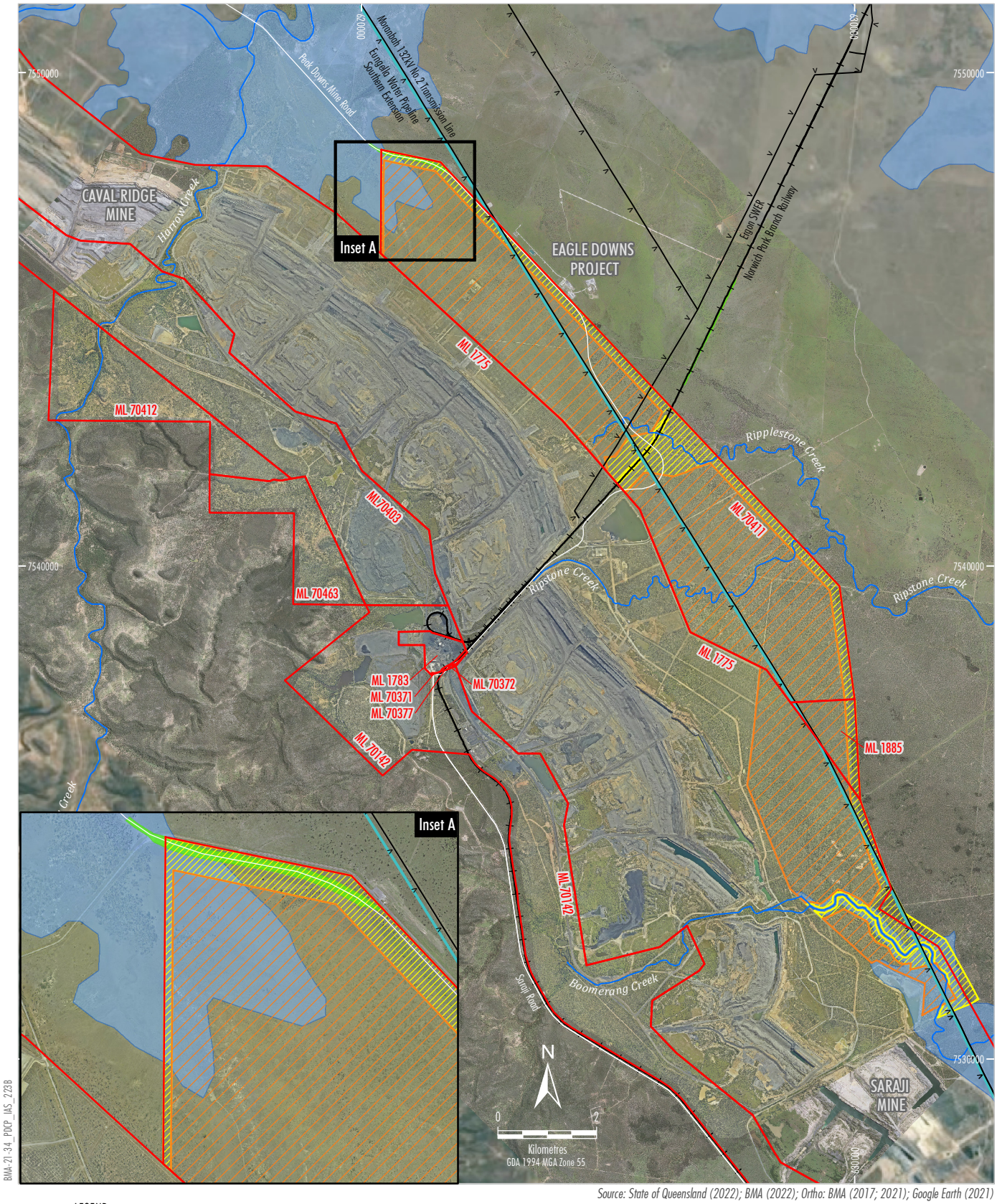
PEAK DOWNS MINE CONTINUATION PROJECT

Land Ownership

Figure 6



BMA-21-34_PDCP_IAS_223B

Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Regional Electricity Transmission Line
- Eungella Water Pipeline Southern Extension

Government Overlays

- Potential Strategic Cropping Area
- Floodplain Assessment Overlay *

Project Components [1]

- Proposed Project Area
- Proposed Infrastructure Area

Note: [1] Excludes some incidental Project components such as water management, access tracks, topsoil stockpiles, power supply, temporary offices, and other ancillary works and construction disturbance.

* *Government mapping has been cropped to remove areas within existing mining areas.*

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PEAK DOWNS MINE CONTINUATION PROJECT

Relevant Government Overlays

Figure 7

Suitability of the Site

Mining operations at the Peak Downs Mine commenced in 1972 within mining leases granted under the CQCA Act. The presence of coal reserves to the east that are able to be economically mined, as the target coal seams continue, has determined the location of the Project.

The Project seeks the extraction of approximately 1,256 Mt of additional ROM coal from ML 70411, ML 1885 and ML 1775. The Project is a continuation and extension of the existing Peak Downs Mine and would facilitate the continuation of the existing benefits derived from the Peak Downs Mine.

Benefits from the Peak Downs Mine occur through the continuity of employment, expendable income, export earnings and government revenue. BMA is the largest employer in the Central Queensland region and provides local jobs for its direct employees with an employment flow-on effect in the Isaac Regional LGA.

The Peak Downs Mine has approximately 2,400 FTE employees, including labour hire and contractors. These jobs are reliant on maintaining continuity of mining operations at the Peak Downs Mine through the Project.

The local and regional community has established itself to service the existing Peak Downs Mine, and is therefore accustomed to the benefits, costs and demands associated with mining operations. Development of the Project will provide continued direct employment opportunities to the regional communities, and long-term flow-on social and economic benefits.

BMA considers that the development of the Project, being a brownfield development (extension of the existing Peak Downs Mine), and its use of the significant existing on-site infrastructure already developed to service the Peak Downs Mine (e.g. rail, road, power and water infrastructure) would result in less demand and impact on existing services and providers, when compared to a greenfield development away from an existing mining complex.

Alternatives

Alternatives to the Project that have been considered include alternative mining methods and layouts, and alternative infrastructure and processing options.

The Project has been designed as an open cut operation as the coal resource is not amenable to underground mining methods. Mining via underground methods would significantly reduce the recovery of the coal resource and rate of extraction. Refinement of the mine plan during the EIS process will consider the principles of the Queensland Government's mining rehabilitation reforms; in particular, progressive rehabilitation opportunities and post-mining land use outcomes, noting that transitional arrangements will apply to areas of existing authorisation.

BHP have been involved in a number of studies to investigate alternative post-mining land use opportunities for our mine sites. Partners for this research include University of Queensland, Sustainable Minerals Institute, Central Queensland University, CRC TiME, Australian Coal Associated Research Program, Industry peers, International Council on Mining and Metals, Regional Councils and Traditional Owners.

Some of the options considered include:

- Agriculture.
- Forestry.
- Fishery.
- Renewable Energy.
- Pumped Hydro Energy Storage.
- Microalgae desalination and livestock food source.

BHP are particularly keen to pursue opportunities that identify and support implementation of collaborative regional opportunities for the use of post-closure mined land and assets.

The Project layout has been designed to maximise recovery of the resource while minimising impacts to environmental values of significance. Further refinements to the mine plan and infrastructure layouts to minimise impacts to environmental values will be considered through the EIS process in response to the various environmental surveys and assessment findings.

BMA currently manage fine rejects (tailings) at the Peak Downs Mine using conventional tailings storage facilities, and is considering ways to dewater fine rejects to allow co-disposal with coarse rejects and waste rock. This will be investigated further during the EIS process.

Justification

Forecasting organisations such as Wood MacKenzie expect considerable growth in Australian seaborne metallurgical exports in coming decades (Wood MacKenzie, 2021). Wood MacKenzie (2021) predicts that Australian seaborne metallurgical exports will grow from 170 Mt in 2021 to 271 Mt by 2050. The total 52% growth in total trade is substantial and is principally attributable to India's persistent expansion through the period".

Given the characteristics of Australian metallurgical coal reserves, Wood Mackenzie (2021) expects Australia's dominance within the metallurgical coal sector will continue, despite the near-term effect of the November 2020 import ban imposed by China, with Australia being in a prime position to benefit once the ban is lifted given its high quality and competitive delivered costs.

Should the Project not be developed, it would not contribute to the significant economic growth provided by Queensland's growing export industry, the value that the coal resource would provide through State royalties and Commonwealth tax revenue would be foregone, and the employment opportunities and social and community benefits for the region would not be realised.

The existing Peak Downs Mine provides significant economic benefits to the local area and State. In FY21, BHP paid approximately $14.3 million (M) Australian dollars (AUD) to the Isaac Regional Council and contributed approximately $402.1M AUD to Queensland in royalties. Furthermore, BHP's Local Buying Program has over 220 local businesses participating from the Isaac region, with over $20M AUD approved spend injected into the region during FY21.

The Peak Downs Mine represents about 18.5% of BMA's operations measured on a saleable coal basis. Given the Project, if approved, would extend the life of Peak Downs Mine it would play an important role in extending the positive economic benefits outlined above.

The Project would facilitate significant ongoing socio-economic benefits in the local area, region and State of Queensland, as it would:

- provide for the continuation and significant extension of the Peak Downs Mine and its workforce, which comprises approximately 2,400 FTE personnel (including labour hire and contractors), and is of significant importance to the local area, region and State of Queensland;
- provide for the continuation of BMA's existing relationships with local suppliers, businesses and community organisations (Section 10);
- result in additional expenditure in the local and regional economies during construction and development phases of the Project;
- support the ongoing contribution of the Peak Downs Mine to Queensland State royalties; and
- leverage off the extensive existing supporting infrastructure and services developed for the existing operation.

The preferred mine plan, infrastructure design, production and workforce profiles are being developed by BMA in consideration of environmental and planning constraints, logistics, community and external relationship expectations for marketing and financial matters. The final Project design will be assessed as part of the EIS, to demonstrate that potential environmental effects can be adequately avoided, minimised, mitigated or offset.

3.5 COMPONENTS, DEVELOPMENTS, ACTIVITIES AND INFRASTRUCTURE THAT CONSTITUTE THE PROJECT TO BE DECLARED COORDINATED

The Project would include, although not be limited to, the following primary components and activities:

- open cut mining (dragline and truck and shovel methods) of ROM coal from the Moranbah Coal Measures in ML 70411, ML 1885 and part of ML 1775;
- continued handling and processing of up to 20 Mtpa of ROM coal at the Peak Downs Mine CHPP;
- extension of the mine life by up to approximately 93 years;
- a peak operational workforce of approximately 2,400 FTE personnel (including labour hire and contractors);
- continued use of the existing MIA, including on-site CHPP, and general coal handling and rail loading facilities and other existing and approved supporting mine infrastructure;
- continued transport of up to 11 Mtpa of ROM coal to Caval Ridge Mine via an overland conveyor to be processed at the Caval Ridge Mine CHPP;

- continued rail transport of approximately 18 Mtpa of product coal to the Hay Point Coal Terminal, near Mackay, for export;
- continued use of existing accommodation in the region, including houses in local towns and the WAVs at Moranbah and Dysart, to house the workforce;
- realignment of Peak Downs Mine Road and associated rail level crossing;
- various infrastructure relocations to facilitate the mining extensions, including a section of the Moranbah 132 kV No.2 Transmission Line, Ergon SWER, a 132 kV substation feeder, and the Eungella Water Pipeline Southern Extension;
- progressive development of watercourse diversions (diversion of Ripstone Creek and relocation of the low-flow Ripstone Creek and Boomerang Creek diversions) and levees;
- continued use of the Peak Downs Mine water management system and progressive development of new water management (e.g. pumps, pipelines and sediment dams) and water storage infrastructure to support the mine;
- controlled release of mine affected water in accordance with the conditions of EA EPML00318213 and/or beneficial industrial re-use;
- upgrades to workshops, electricity distribution and other ancillary infrastructure;
- construction and operation of new ancillary infrastructure in support of mining;
- construction and operation of additional mine access roads to access the Project mining areas;
- continued use of the existing tailings emplacement area and emplacement of coarse rejects and waste rock within mined out voids and out-of-pit emplacements;
- drilling and blasting of competent overburden;
- progressive construction and use of soil stockpiles;
- continued use of an existing on-site landfill to dispose of certain waste streams generated on-site and disposal of other types of waste in accordance with the conditions of EA EPML00318213;
- ongoing exploration activities; and
- other associated infrastructure, plant, equipment and activities.

Prior to the Project commencing and as part of the Project, BMA will continue to mine within existing authorised areas of ML 70411 and ML 1775 in accordance with existing or future State and Commonwealth approvals, and undertake exploration activities within ML 70411, ML 1885 and ML 1775 in accordance with existing or future State and Commonwealth approvals.

The indicative conceptual arrangement of the Project is shown on Figure 3. The indicative conceptual arrangement has been prepared to support the application for declaration as a Coordinated Project and the proposed open cut extension and sequence for the Project would vary to take account of localised geological features, coal market volume and quality requirements, and Project detailed engineering design.

3.6 EXTERNAL INFRASTRUCTURE REQUIREMENTS

3.6.1 Fuel Supply

All required fuels would be transported via road to the Project by contractors and stored on-site. The transport, storage and handling of fuels at the Project would be undertaken in accordance with EA EPML00318213 and relevant legislation and guidelines.

3.6.2 Workforce Accommodation

The Project workforce would reside in existing accommodation in the region (houses in local towns and WAVs in Moranbah and Dysart).

3.6.3 Water Supply

Water supply for the Project is expected to be via the following sources:

- open cut dewatering (including advance dewatering with groundwater bores);
- process water re-use and recycling;
- water recovered from fines and coarse reject dewatering;
- incident rainfall and runoff collection and potential flood harvesting; and
- raw water supplied from the existing Bingegang Pipeline, which is treated at the on-site water treatment plant, or from the Eungella Dam or Braeside borefield.

3.6.4 Rail Transport and Port Operations

Product coal from the Peak Downs Mine would continue to be stockpiled prior to being reclaimed and loaded onto trains with the existing train loading infrastructure for transport via the Norwich Park Branch Railway to the BMA-owned Hay Point Coal Terminal for export to international customers.

3.6.5 Electricity Supply

The existing Peak Downs Mine receives electricity from a 66 kV supply energy system owned and operated by BMA. Power is distributed by overhead cable or underground cable where necessary.

This system would be used for the Project and augmented where necessary.

As the Project would further extend the open cuts, sections of existing regional electricity transmission lines, and the existing 132 kV Queensland Rail/Aurizon Holdings Limited (Aurizon) Substation Feeder, would require removal/decommissioning, relocation and/or extension (Figure 3).

These relocations would be undertaken in consultation with service providers in a manner that minimises potential disruptions to services and mitigates potential impacts of the mining operations to these services (e.g. from blasting).

3.6.6 Road Transport

Vehicular access to the Peak Downs Mine is via Peak Downs Mine Road (a local road), which would remain the primary site access.

Part of the Peak Downs Mine Road is located within the proposed open cut extension area and would therefore be relocated as part of the Project. This would involve construction of a new associated level crossing over the Norwich Park Branch Railway.

The design and relocation of Peak Downs Mine Road and the level crossing would be further developed as part of the EIS process and undertaken in consultation with the Department of Transport and Main Roads (DTMR), Isaac Regional Council and Aurizon.

The Northern Back Access and Southern Back Access Roads provide access to the open cut pits and construction areas, and would be required to be relocated multiple times throughout the life of the mine as the open cut advances.

Temporary internal roads would be constructed as required. The use of internal access roads would be restricted to mine personnel only.

3.6.7 Telecommunications

The existing communications systems at the Peak Downs Mine would be retained and upgraded for the Project. The communication systems would be upgraded as the mine expands and would include the use of mobile and/or fixed installations that are suitably located to maximise communications efficiency.

3.7 TIMEFRAMES FOR THE PROJECT

Table 2 presents the indicative timeframes for the Project. These timeframes will be reviewed and revised as necessary as part of the EIS (e.g. staging relocations) and are subject to future market conditions, detailed mine planning and investment decisions.

Early works may include construction of access roads, laydown areas, temporary site facilities, geotechnical investigations and surveys.

Table 2
Indicative Project Timeframes

Indicative Timeframe^	Project Phase
Year 1 – Year 4	Stage 1 – Construction of Ripstone Creek diversion and relocation of Ripstone Dam, and relocation of Bingegang Pipeline and other associated BMA-owned infrastructure (e.g. access roads and electricity transmission lines) and regional electricity transmission lines and substation.
Year 2 – Year 21	ROM coal extraction in the Project area.
Year 22	ROM coal extraction reaches 20 Mtpa.
Year 23 – Year 24	Stage 2 – Construction of realigned Boomerang Creek low-flow diversion and relocated Boomerang Dam.
Year 25 – Year 27	Stage 3 – Construction of Peak Downs Mine Road realignment and associated rail level crossing.
Year 28 – Year 31	Stage 4 – Construction of Eungella Water Pipeline Southern Extension realignment.
Year 60	ROM coal extraction reduces to approximately 10 Mtpa as mining pits are progressively completed.
Year 93	Mining operations cease and final closure activities commence (decommissioning and final rehabilitation works).

^ Dependent on grant of all required approvals and investment decisions. It is currently anticipated that Year 1 would equate to 2024.

It is expected that the continuation of mining would become impacted in approximately financial year 2026 if the Project is not approved by then.

Rehabilitation would be undertaken progressively during the life of the Project in accordance with the EA EPML00318213, and when approved, the Progressive Rehabilitation and Closure Plan (PRC Plan). Final rehabilitation works and mine closure activities would be undertaken upon completion of ROM coal extraction (anticipated mine life of up to approximately 93 years).

3.8 CONSTRUCTION AND OPERATIONAL PROCESSES

The Project construction requirements primarily relate to the relocation of existing public and private infrastructure and the development of additional water management infrastructure to accommodate the extensions to the open cut pits.

Construction would occur at a number of stages over the life of the operation (Table 2). The main construction activities associated with the Project include:

- development of the Ripstone Creek diversion and relocation of Ripstone Dam;
- relocation of existing BMA infrastructure including the Bingegang Pipeline, access roads, electricity transmission lines, and other associated mine infrastructure;
- realignment of regional electricity transmission lines (Moranbah 132 kV No.2 Transmission Line and Ergon SWER) and substation;
- realignment of the Eungella Water Pipeline Southern Extension;
- realignment of the existing Boomerang Creek low-flow diversion and relocation of Boomerang Dam;
- realignment of Peak Downs Mine Road and associated rail level crossing; and
- development of new ancillary infrastructure to support mining.

3.9 WORKFORCE REQUIREMENTS DURING CONSTRUCTION AND OPERATION

The Peak Downs Mine has an existing workforce of approximately 2,400 FTE personnel, including labour hire and contractors.

Construction and development activities (e.g. creek diversions and regional electricity transmission line realignments) would require up to approximately 160 additional short-term personnel during these periods.

Operation of the Project is expected to commence with a conventional workforce operating the mining fleet, with some operations controlled by site-based centres or remotely from other centres.

Construction and operation of the Project would be conducted up to 24 hours a day, seven days a week.

Consistent with efforts to improve safety and operational efficiency at other mine sites in the Bowen Basin (and at other BHP operations across Australia), BMA may introduce autonomous operation of particular mining functions in a staged manner during the life of the mine.

The introduction of autonomous operations is expected to create new permanent jobs and indirect employment opportunities with the introduction of the technology and requirement for ongoing control, engineering and maintenance roles. The introduction of autonomous operations to the Project will be considered further in feasibility studies and described in the EIS.

3.10 ECONOMIC INDICATORS

The estimated capital investment per annum for development of the Project is in the order of $120M AUD.

The Project will contribute to the continuation of State royalty payments and Commonwealth tax revenues. In FY21, BHP paid approximately $14.3M AUD to the Isaac Regional Council and contributed approximately $402.1M AUD to Queensland in royalties and $8,070M AUD to the Commonwealth in taxes.

The Project would result in economic benefits through ongoing annual direct and indirect output, direct employment and household income contributions. Sectors that typically experience direct or indirect benefits from the construction and operation of mines include property services, equipment manufacturing, domestic services (e.g. cooking and cleaning), trade services (e.g. construction, labour, mechanics, etc.) and freight.

3.11 FINANCING REQUIREMENTS AND IMPLICATIONS

As detailed in Section 2, BMA is owned 50:50 by BHP and Mitsubishi Development, and is Australia's largest supplier of seaborne metallurgical coal, operating seven mines in the Bowen Basin.

BMA has a proven record of funding the development of projects of similar scale in the region. Funding for the Project will be sourced from a combination of cash flows generated from existing BMA operations and/or available facilities.

4 LOCATION OF KEY PROJECT ELEMENTS

4.1 LOCATION

4.1.1 Local Context

The Project is an extension of the existing Peak Downs Mine and is bordered by the existing BMA-owned Caval Ridge Mine and Saraji Mine to the north and south, respectively, and Eagle Downs Mine to the east.

The Project area elevation ranges from approximately 190 metres (m) Australian Height Datum (AHD) in the areas to the south of the Project to approximately 240 m AHD to the north-west of the Project area (Queensland Government, 2021a).

4.1.2 Regional Context

The Project is located approximately 30 km south-east of Moranbah and approximately 40 km north-west of Dysart in the Bowen Basin region of Central Queensland, within the Isaac Regional LGA (Figure 1). The closest city is Mackay, which is located approximately 160 km north-east of the Project.

The Project is located in the north of the Bowen Basin mining region with multiple projects/active coal mines within its vicinity, including (Figure 1)[1]:

- Caval Ridge Mine (adjacent to the north of the Project);
- Saraji Mine (adjacent to the south of the Project);
- Eagle Downs Project (adjacent to the east of the Project);
- Vulcan Complex Project (approximately 3 km to the south of the Project);
- Winchester South Project (approximately 17 km to the north-east of the Project);
- Saraji East Mining Lease Project (approximately 19 km to the south-east of the Project); and
- Olive Downs Project (approximately 20 km to the east of the Project).

The Project area is located on the traditional lands of the Barada Barna People (QCD2016/007), who have determined native title rights and interests across parts of the broader region. Native title has been extinguished over the Project area.

The Barada Barna People are the statutory Aboriginal Party for the Project area in accordance with the *Aboriginal Cultural Heritage Act 2003* (ACH Act).

The Project is located within the Upper Isaac sub-catchment of the Isaac River Sub-basin, within the Fitzroy Basin. The Project is also located within the Isaac Connors Groundwater Management Area (GMA) declared under the *Water Plan (Fitzroy Basin) 2011*.

4.2 TENURE

4.2.1 Tenements

The Project is located within BMA tenements ML 70411, ML 1885 and part of ML 1775 (Figure 8). Part of ML 70411 and ML 1775, and ML 1885 contain areas of nil surface rights (Figure 2b) and BMA will seek to have these areas granted for the Project.

Authority to Prospect (ATP) 1103, held by CH4 Pty Ltd (a wholly owned subsidiary of Arrow Energy Holdings Pty Ltd [Arrow]), overlaps these areas of ML 70411, ML 1775 and ML 1885. BMA would provide notice prior to applying for surface area rights in ML 70411, ML 1775 and ML 1885 in accordance with the relevant provisions of the *Mineral and Energy Resources (Common Provisions) Act 2014* (MERCP Act).

4.2.2 Land Ownership

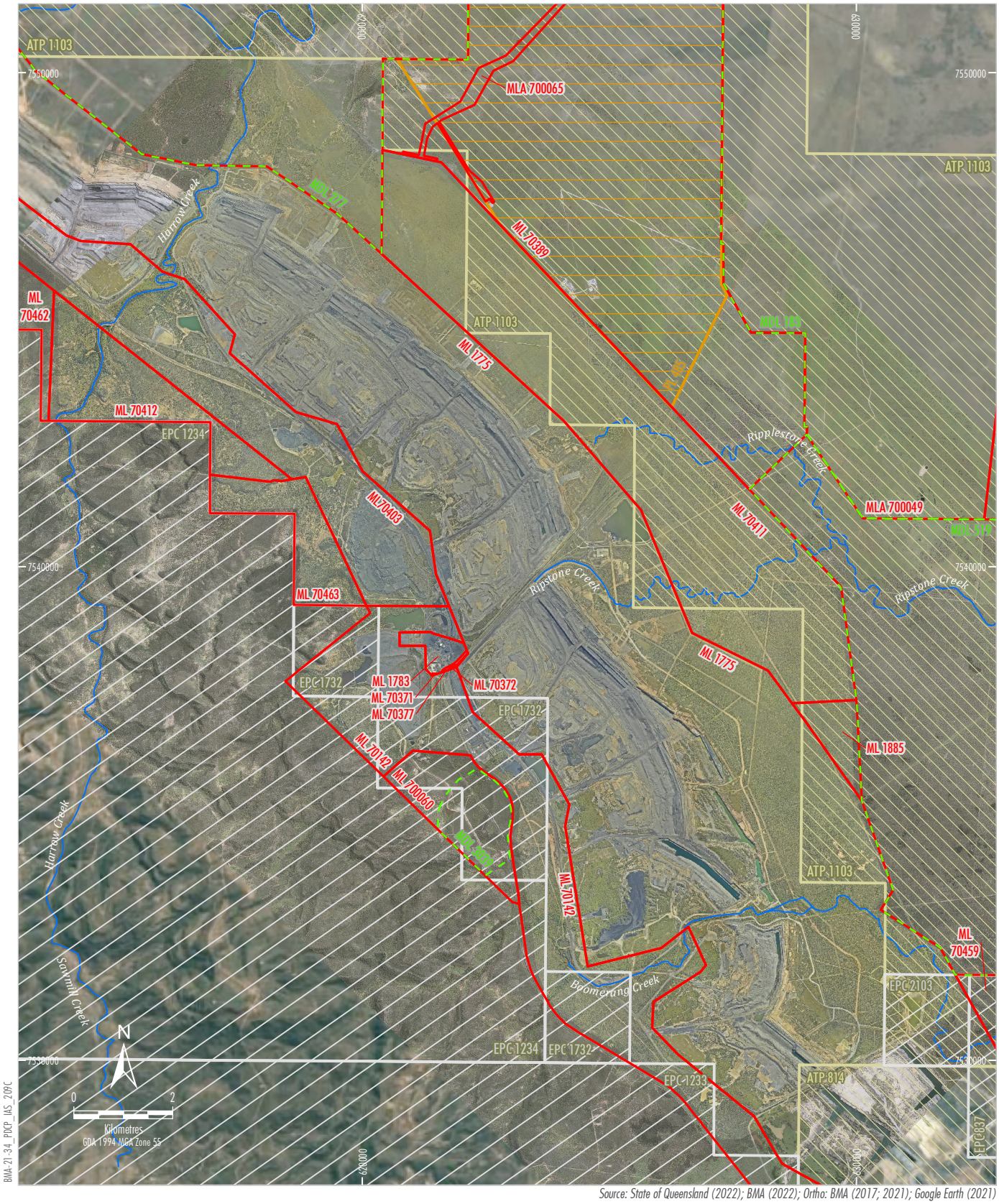
Table 3 lists the properties that intersect with the Project mining tenements (Figures 5 and 6).

4.2.3 Local Government Planning Scheme

The Project is within the Isaac Regional LGA and the Isaac Regional Council is the relevant local authority for the Project.

The *Isaac Regional Planning Scheme 2021* applies to the Project area.

[1] Measured from the Peak Downs Mine CHPP.



Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease (ML)
- Mineral Development Licence (MDL)
- Petroleum Lease (PL)
- Exploration Permit for Coal (EPC)
- Authority to Prospect (ATP)
- Watercourse

BHP Mitsubishi Alliance

PEAK DOWNS MINE CONTINUATION PROJECT

Relevant Mining and Petroleum Tenements

Figure 8

Table 3
Land Ownership Intersecting with the Project

Property	Lots	Ownership
Winchester Downs	8SP277384, 5CNS90	Privately held
Vermont Park	9CNS98	Privately held
-	10SP208611	BMA
Road Reserve (Peak Downs Mine Road)	-	State Land
Easement	2CNS79,13CNS406	State Land (DTMR leased to Aurizon)
	12CNS84	Utility (Queensland Electricity Transmission Corporation Limited)
	ACNS151, DCNS365	Utility (Queensland Electricity Commission Limited)
	ACNS44, ACNS45, BCNS151, ACNS66, CCNS98, CCNS151	Utility (Queensland Electricity Commission Limited and Eungella Water Pipeline Pty Ltd)
	CCNS63, JSP206092	Utility (Eungella Water Pipeline Pty Ltd)
	FCNS400	Utility (Queensland Rail Limited)

4.2.4 Regional Plan Designation

The *Mackay, Isaac and Whitsunday Regional Plan* (Queensland Government, 2012) establishes a vision and direction for the region to 2031. The *Mackay, Isaac and Whitsunday Regional Plan* recognises that coal mining is the major industry in the region and the largest employer.

5 DESCRIPTION OF THE EXISTING ENVIRONMENT

5.1 NATURAL ENVIRONMENT

5.1.1 Land

Land Resources

As described in Section 4.1.2, the Project is located within the Bowen Basin mining region. Coal and petroleum (i.e. CSG) mining exploration activities have been conducted within the Project area and surrounds for decades.

A number of currently operating and proposed coal mining operations are located within the vicinity of the Project, including the existing Peak Downs Mine to the west, and the BMA-owned Caval Ridge Mine and Saraji Mine to the immediate north and south, respectively (Figure 1).

The majority of the Project area has been subject to historic mining and agricultural land uses.

The majority of the Project mining tenements lie on Class C1 (sown pastures and native pasture on high fertility soil) and C2 (native pasture) agricultural lands (Queensland Government, 2021a). Class C1 and C2 land is suitable for pasture but not suitable for widescale cropping (Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines, 2015).

An area of Class A1 (crop land) is located within the northern section of ML 70411, which generally aligns with the *good quality agricultural land* mapping within the *Mackay, Isaac and Whitsunday Regional Plan* (Queensland Government, 2012) and Class A agricultural land mapping within the *Isaac Regional Planning Scheme 2021*.

The RPI Act identifies 'areas of regional interest', including PAAs and SCAs.

SCAs within Queensland are made up of areas shown on the SCA trigger map as 'potential SCA'. A small area of land within the north-eastern part of ML 70411 is mapped as potential SCA (Figure 7). Field verification of the land shown as 'potential SCA' will be conducted during preparation of the EIS to determine whether the land meets the criteria for SCA. If it is determined to be SCA, BMA will consider opportunities to avoid impact to the SCA and will comply with the relevant provisions of the RPI Act associated with carrying out a resource activity within an area of regional interest.

The closest PAA is located 130 km to south-east of the Project and the Project is located outside of the Golden Mile and Central Highlands important agricultural areas (Section 3.3).

The northern part of the Project area has been modified by cattle grazing agricultural land uses and exploration activities and is generally non-remnant vegetation, while the southern part of the Project area generally comprises remnant vegetation.

Geology and Soils

The Project is located in the central part of the Bowen Basin. The Bowen Basin is the northern extension of the Permian age Sydney-Gunnedah Bowen Basin which contains fluvial and shallow marine sediments with extensive coal measures.

The Peak Downs Mine is located over a section of the Moranbah Coal Measures sub-cropping beneath a thin horizon of residual sand, clay and sandy-clay soils within the Quaternary alluvium. The Moranbah Coal Measures dip to the east at 3 to 5 degrees and are comprised of sandstone, shale, mudstone and coal. The consolidated thickness of coal in the Moranbah Coal Measures ranges from 12 m to 24 m and consists of up to eight seams: from the basal Dysart Main and Upper seam plies to the shallower Q and R seams.

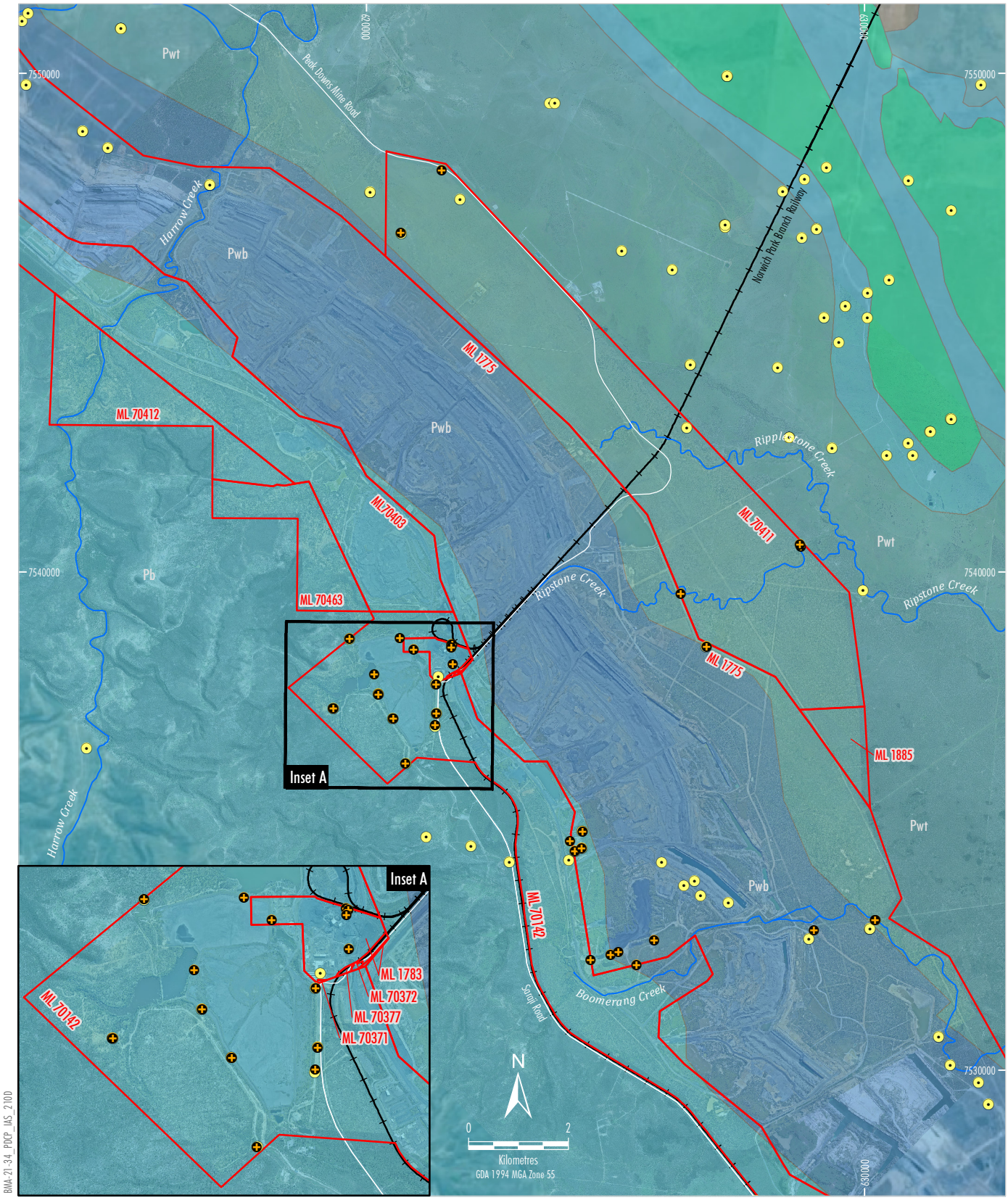
The Fair Hill formation containing the Fort Cooper Coal Measures overlays the Moranbah Coal Measures within the Project area (Figure 9a). The Moranbah Coal Measures contain the key seams to be targeted by the Project (Dysart and Harrow Creek coal seams).

The Project area landscape can be described as moderately to gently undulating hills and plains. The soil types found within the northern part of the Project area can be described as grey self-mulching cracking clays, with the southern part of the Project area described as hard pedal yellow/mottled-yellow duplex soils (Queensland Government, 2021a).

Nature Conservation Areas

There are no nature conservation areas located within or immediately adjacent to the Project (Queensland Government, 2021a).

The Peak Range National Park, located approximately 45 km to the south-west of the Project, is the closest National Park; with Dipperu National Park located approximately 50 km to the north-east of the Project. Bundoora State Forest is the closest State Forest and is approximately 65 km to the south of the Project.



Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Groundwater Bore
- Peak Downs Mine Monitoring Bore

Stratigraphic Unit

- Back Creek Group (Pb)
- Fair Hill Formation, Fort Cooper Coal Measures (Pwt)
- Moranbah Coal Measures (Pwb)
- Rangal Coal Measures, Bandanna Formation, Baralaba Coal Measures (Pwj)
- Rewan Group (Rr)

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PEAK DOWNS MINE CONTINUATION PROJECT

Regional Geology and Registered Groundwater Bores

Figure 9a

There are no Ramsar-protected wetland sites, nationally important wetland sites or World Heritage Areas within the Project area or its vicinity (Appendix A; Department of Agriculture, Water and the Environment [DAWE], 2022).

State Land

State land exists within ML 70411 and ML 1755 (Peak Downs Mine Road) and in the vicinity of the Project (road reserves).

5.1.2 Water

Surface Water

The Project lies within the Isaac River Sub-Basin in the Fitzroy Basin, as defined by the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (EPP [Water and Wetland Biodiversity]).

Tributaries of the Isaac River in the vicinity of the Project include (Figure 3):

- Harrow Creek;
- Ripplestone Creek;
- Ripstone Creek; and
- Boomerang Creek.

Harrow Creek drains to Cherwell Creek, which then drains to the Isaac River. Similarly, Ripplestone Creek within the Project area drains to Ripstone Creek, which then drains to the Isaac River. Boomerang Creek drains the southern areas of the Project to Isaac River. The Project is located approximately 23 km upstream of the confluence of Ripstone Creek with the Isaac River.

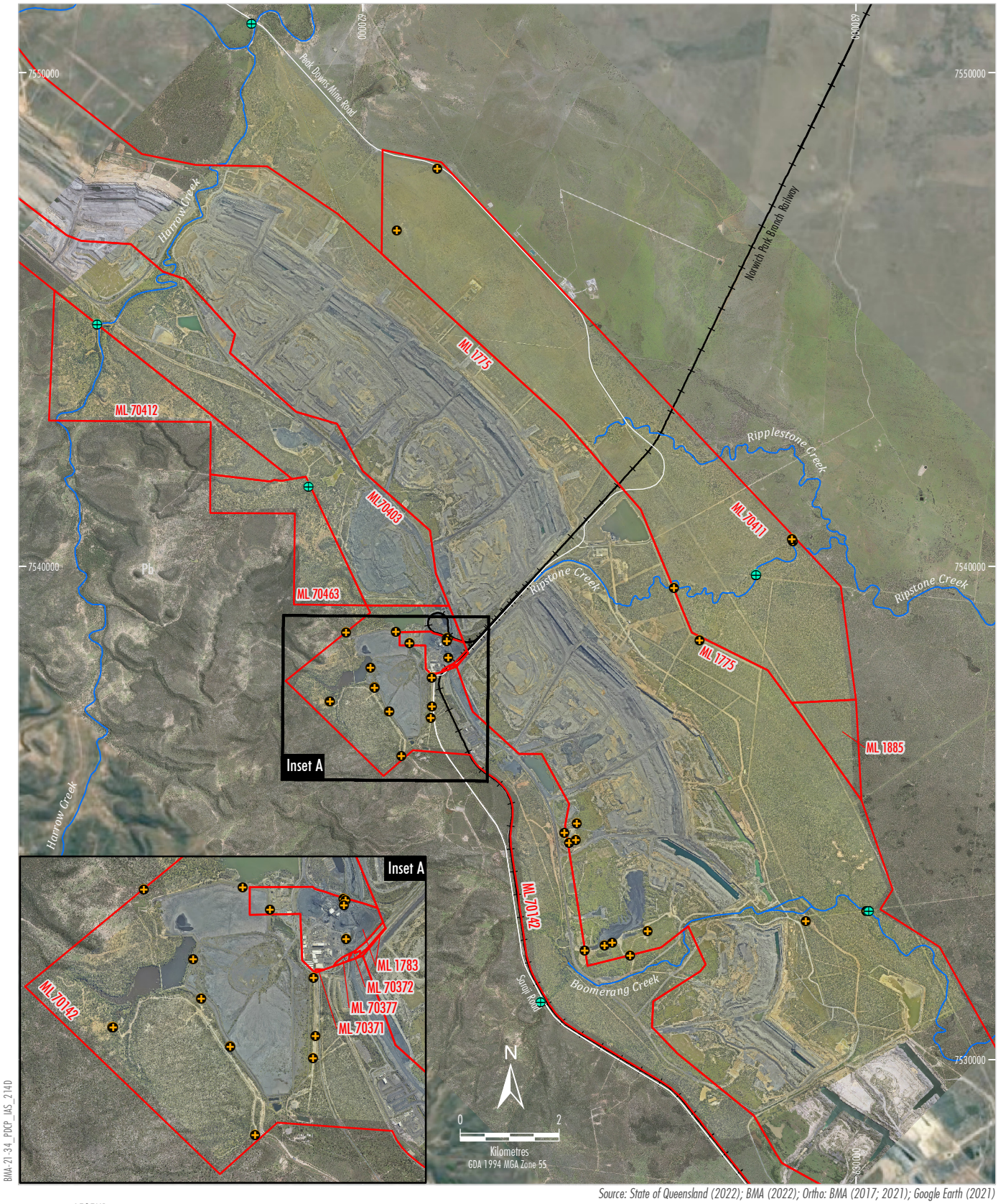
Flow duration data from the Queensland Government operated monitoring stations is available for the Isaac River catchment at two sites:

- Isaac River at Goonyella (130414A); and
- Isaac River at Deverill (130410A).

Monitoring data indicates that the Isaac River is dry for many months of the year (between April and November), and subject to short periods of high flows in summer.

BMA currently undertakes monitoring of surface water in accordance with the Peak Downs Mine Receiving Environment Monitoring Program. Surface water monitoring sites of relevance to the Project include MP4(PDM) and MP12(PDM) (located on Ripstone Creek), and MP24(PDM) and MP10(PDM) (located on Boomerang Creek) (Figure 9b) (Plate 3).

Plate 3 – Employee at Peak Downs Mine



BMA-21-34_PDCP_IAS_2140

Source: State of Queensland (2022); BMA (2022); Ortho: BMA (2017; 2021); Google Earth (2021)

LEGEND

- Mining Lease
- Railway
- Road
- Watercourse
- Surface Water Monitoring Location
- Groundwater Monitoring Bore

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PEAK DOWNS MINE CONTINUATION PROJECT

Surface Water and Groundwater Monitoring Network

Figure 9b

Streamflow monitoring on Ripstone Creek and Boomerang Creek, between July 2018 and July 2019, identified highly ephemeral flows, with significant flows recorded in March 2019 and smaller flows recorded in December 2018 (BMA, 2020). The flow monitoring sites were generally dry outside of these periods.

Monitoring undertaken by BMA for the Peak Downs Mine (BMA, 2020) indicates that, with a few exceptions, downstream median water quality results are within the acceptable ranges for slightly-to-moderately disturbed systems for local streams, and/or within current guidelines or EA EPML00318213 trigger values. Values above guidelines generally occurred both upstream and downstream of mining operations, and are likely a function of background and associated land use influences outside of mining.

BMA also monitors the water quality and aquatic biota at downstream and upstream sites of Peak Downs Mine release points on Harrow Creek, Cherwell Creek, Ripstone Creek, Boomerang Creek and the Isaac River. No adverse impacts on the aquatic biota have been detected to date as a result of mine-affected water releases (Central Queensland University, 2016; 2018; 2019 and 2020).

Flooding

The Queensland Floodplain Assessment Overlay was developed for use by local governments to identify potential flood hazard areas; it represents an estimate of areas potentially at threat of inundation by flooding (Department of Regional Development, Manufacturing and Water [DRDMW], 2021).

The mapping shows a portion of the Project area falls within the floodplain mapped for Harrow Creek and Boomerang Creek (Figure 7).

Groundwater

The Project coal resource is within the Isaac Connors GMA as defined by the Fitzroy Basin Water Resource Plan. The Isaac Connors GMA consists of the following groundwater units:

- Isaac Connors Groundwater Unit 1 (also known as the Isaac Connors Alluvium Groundwater Sub-area), containing the aquifers of the quaternary alluvium; and
- Isaac Connors Groundwater Unit 2, containing all subartesian aquifers within the Isaac Connors GMA other than the aquifers included in Isaac Connors Groundwater Unit 1.

The Project is located approximately 5 km west from the mapped alluvium extent associated with the Isaac Connors Groundwater Unit 1.

A bore census of groundwater bores located within 10 km of the Peak Downs Mine was undertaken in 2020 and identified:

- 14 total registered bores;
- 1 bore installed into the Quaternary alluvium; and
- 20 bores installed into the Permian strata (Fort Cooper Coal Measures, Moranbah Coal Measures and Back Creek Group).

Of the above-listed bores, only one bore was used for water supply purposes and the remainder were monitoring bores.

Groundwater bores within the Project area and immediate vicinity are shown on Figure 9a, including groundwater monitoring bores for Peak Downs Mine.

Currently, the groundwater monitoring network for Peak Downs includes 38 monitoring bores: 10 within the alluvium; 15 within the Permian aquifer; five within the Tertiary aquifer; four within carbonaceous siltstone/sandstone; and four shallow bores. Additional groundwater monitoring bores are proposed to be drilled in FY22 to provide further understanding of groundwater interactions. Groundwater quality and levels are generally monitored quarterly (Figure 9b).

A regional groundwater model has been developed for the Caval Ridge Mine, which would be updated for Peak Downs Mine and the Project. BMA has also recently conducted a bore census of properties in the immediate vicinity of Caval Ridge Mine (total of 26 bores) and found 17 bores existing and in use, for either groundwater monitoring, quarry water supply, stock water supply or domestic water supply (SLR Consulting Australia Pty Ltd, 2021).

BMA also has data sharing agreements with the owners of neighbouring mines and projects, which allow for the sharing of groundwater data and models.

Potential impacts to bores would be considered in the Project EIS.

Raymond and McNeil (2011) indicate that the mapped groundwater zone in this region contains moderate to high salinities, dominated by Sodium and Chloride ions.

5.1.3 Air

Regional Air Quality

Regional air quality is expected to be influenced by emissions of dust from existing coal mining operations, agricultural activities and quarrying.

Preliminary review and analysis of long-term continuous PM_{10}[2] and $PM_{2.5}$[3] monitoring data available from the Department of Environment and Science (DES) monitoring station located in Moranbah (Utah Drive) (for the period 15 March 2011 to 10 August 2021), indicate that there is a:

- running hourly average PM_{10} concentration of 23.4 micrograms per cubic metre (µg/m³); and
- running hourly average $PM_{2.5}$ concentration of 4.2 µg/m³.

The DES also recently established a station on Cunningham Way in Moranbah (29 June 2020); this station currently has a running hourly average PM_{10} concentration of 26.6 µg/m³ and a running hourly average $PM_{2.5}$ concentration of 4.5 µg/m³. These results are consistent with the long-term Moranbah (Utah Drive) station.

BMA has an on-site air quality monitoring station for Peak Downs (OSIRIS), which monitors total suspended particulate (TSP), PM_{10} and $PM_{2.5}$. Additionally, Caval Ridge, located to the north of the Project, has five tapered element oscillating microbalances (TEOM) monitoring stations that collect TSP, PM_{10} and $PM_{2.5}$ on a continuous basis.

Prevailing Meteorology

Meteorological data is available at the existing Peak Downs Mine weather stations (Peak Downs Mine Northern and Southern weather stations).

The meteorological data indicates that winds are predominantly from the east and south-east. Wind speeds are fairly light, generally less than 5.5 m per second, and there is limited variation of wind direction and speed throughout the seasons.

5.1.4 Ecosystems

The majority of the northern part of the Project area contains non-remnant vegetation, previously cleared as part of historic and current agricultural and mining/exploration land uses, while the southern part of the Project area comprises of remnant vegetation (Figure 10a), particularly along the creeks.

State mapping identifies patches of remnant vegetation within areas mapped as endangered Regional Ecosystems (REs) (considered to be Category B Environmentally Sensitive Areas [ESAs]) and Of Concern REs. The endangered REs are also listed REs for the *Brigalow* (*Acacia harpophylla dominant and co-dominant*), *Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin* and *Poplar Box Grassy Woodland on Alluvial Plains* threatened ecological communities (DAWE, 2022) (Figures 10a and 10b).

Initial ecological surveys undertaken in 2018, 2019 and 2021 of the Project area and surrounds ground-truthed a total of three endangered REs, four of concern REs and eight least concern REs under the *Vegetation Management Act 1999*. Further investigations will be undertaken to inform the EIS.

5.1.5 Flora and Fauna

The following database searches were undertaken to identify any Matters of National and/or State Environmental Significance with the potential to occur in the Project area or surrounds:

- Wildlife Online Database Search (DES, 2020);
- EPBC Protected Matters Search (DAWE, 2022) (Appendix A); and
- Atlas of Living Australia Database Search (ALA) (ALA, 2020).

Initial ecological surveys were undertaken in 2018, 2019 and 2021. Further investigations will be undertaken to inform the EIS.

Flora

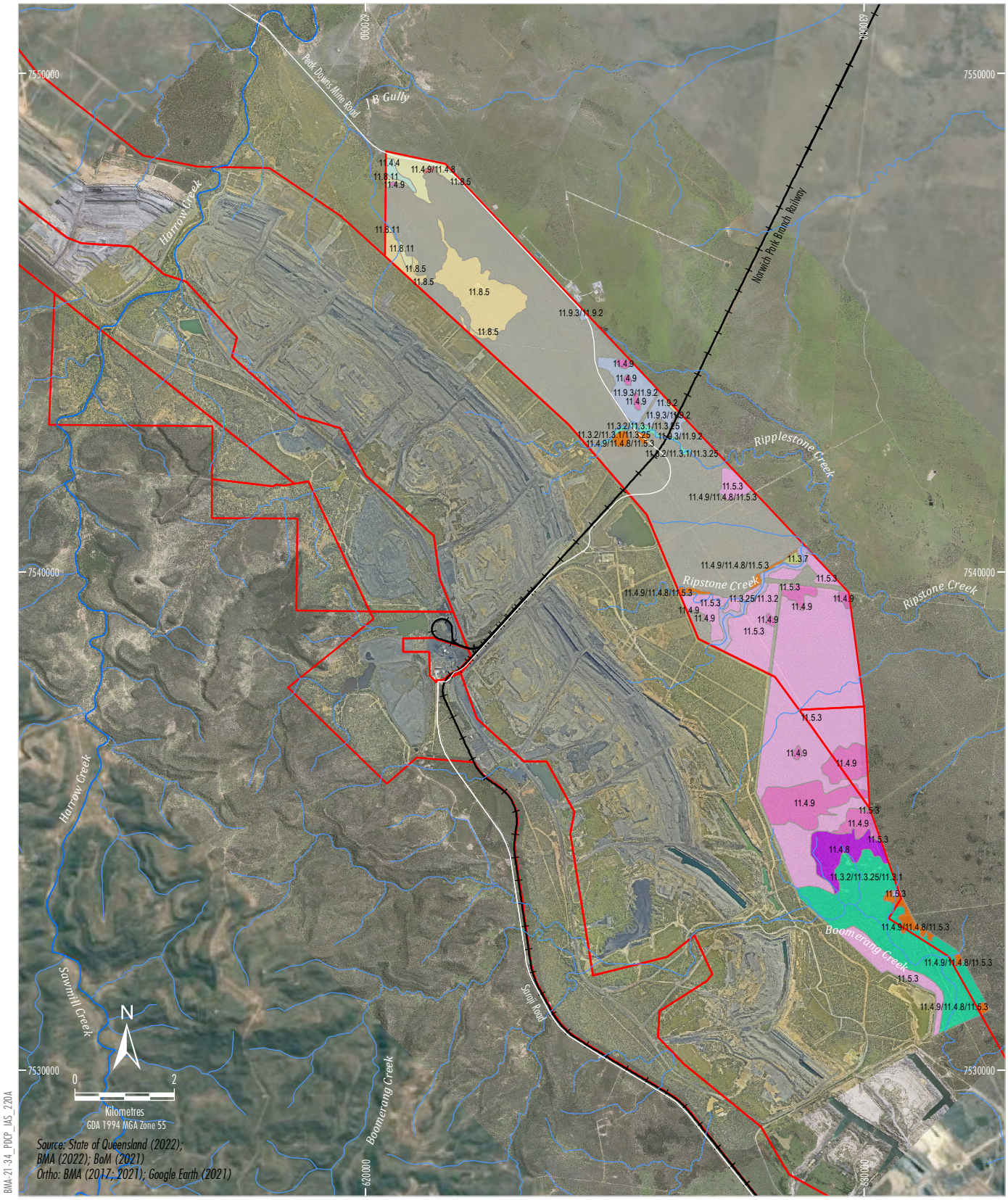
The desktop searches above identified six flora species listed as conservation significant under either the EPBC Act or *Nature Conservation Act 1992* (NC Act), with the potential to occur in the Project area or surrounds (Table 4).

The Protected Plant Trigger Map does not show any high-risk areas within the Project area where endangered, vulnerable or near threatened native plants are present or are likely to be present (Queensland Government, 2021a).

No threatened flora were recorded during initial ecological surveys undertaken in 2018, 2019 and 2021. Further investigation will be undertaken to inform the EIS.

[2] PM_{10} refers to particulate matter 10 micrometres or less in diameter.

[3] $PM_{2.5}$ refers to particulate matter 2.5 micrometres or less in diameter.



LEGEND

- Mining Lease
- Railway
- Road
- Vegetation Management Watercourse and Drainage Line (Major)
- Vegetation Management Watercourse and Drainage Line (Minor)

Regional Ecosystems *

- 11.3.2/11.3.1/11.3.25
- 11.3.2/11.3.25/11.3.1
- 11.3.25/11.3.2
- 11.3.7
- 11.4.4
- 11.4.8
- 11.4.9
- 11.4.9/11.4.8
- 11.4.9/11.4.8/11.5.3
- 11.5.3
- 11.8.11
- 11.8.5
- 11.9.2
- 11.9.3/11.9.2
- Non-remnant

* *Government mapping has been cropped to within the Proposed Project area.*

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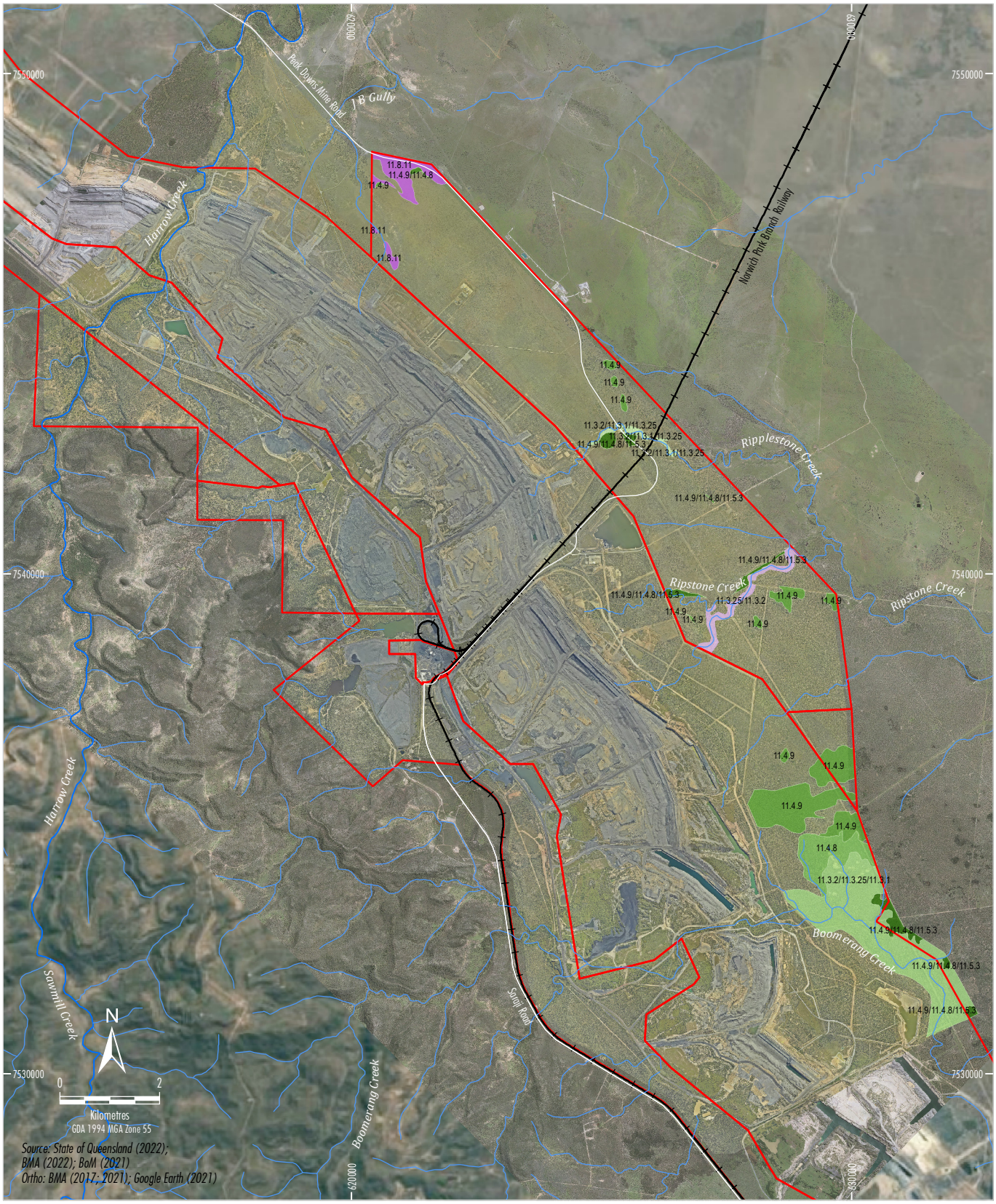
PEAK DOWNS MINE CONTINUATION PROJECT

Government Mapping - Regional Ecosystems

Figure 10a



LEGEND

- Mining Lease
- Railway
- Road
- Vegetation Management Watercourse and Drainage Line (Major)
- Vegetation Management Watercourse and Drainage Line (Minor)

Endangered Regional Ecosystems *

- 11.3.2/11.3.1/11.3.25
- 11.3.2/11.3.25/11.3.1
- 11.4.8
- 11.4.9
- 11.4.9/11.4.8
- 11.4.9/11.4.8/11.5.3

Of Concern Regional Ecosystems *

- 11.3.25/11.3.2
- 11.8.11

* *Government mapping has been cropped to within the Proposed Project area.*

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PEAK DOWNS MINE CONTINUATION PROJECT

Government Mapping - Endangered and Of Concern Regional Ecosystems

Figure 10b

Table 4
Potentially Occurring Conservation Significant Flora Species

Scientific Name	Species Common Name	EPBC Act Status[1]	NC Act Status[1]	Likelihood
Aristida annua	-	V	V	**Unlikely** – nearest record approximately 35 km to the south
Cycas ophiolitica	Marlborough Blue	E	E	**Unlikely** – outside of species likely habitat
Dichanthium queenslandicum	King Blue-grass	E	V	**Potential** – nearest record 12 km north
Dichanthium setosum	Bluegrass	V	LC	**Unlikely** – nearest record over 85 km north
Eucalyptus ravertiana	Black Ironbox	V	LC	-[2]
Samadera bidwillii	Quassia	V	V	**Unlikely** – primarily coastal, nearest record over 120 km east

V = Vulnerable, E = Endangered and LC = Least Concern.

1 Status current as at March 2022.

2 Not considered in previous likelihood assessment, identified in March 2022 EPBC Act Protected Matters Report (DAWE, 2022).

Fauna

The desktop searches above identified 36 fauna species listed as conservation significant or migratory under either the EPBC Act or NC Act with the potential to or are known to occur in the Project area or surrounds (Table 5).

The habitat in the survey area is considered to be significantly altered from its original state, due to broad-scale vegetation clearing, cattle grazing and weed and pest encroachment. However, suitable fauna habitat is available as riparian woodland, open woodland, grasslands on clay/basalt plains, shrubby Brigalow regrowth with gilgai and non-remnant vegetation.

The following threatened species have been recorded in the study area (Figure 10c):

- Koala (*Phascolarctos cinereus*) (endangered under the EPBC Act and vulnerable under the NC Act);
- Squatter Pigeon (southern subspecies) (*Geophaps scripta scripta*) (vulnerable under the EPBC Act and NC Act); and
- Greater Glider (southern and central populations) (*Petauroides volans*) (vulnerable under the EPBC Act and endangered under the NC Act).

Invasive Species

19 invasive species (including 11 fauna and eight flora species) were identified as having the potential to occur within the Project area and surrounds (Table 6).

Weeds reported here are either considered to be a weed of national significance or another introduced plant that are considered by the States and Territories to pose a particularly significant threat to biodiversity.

Groundwater Dependent Ecosystems

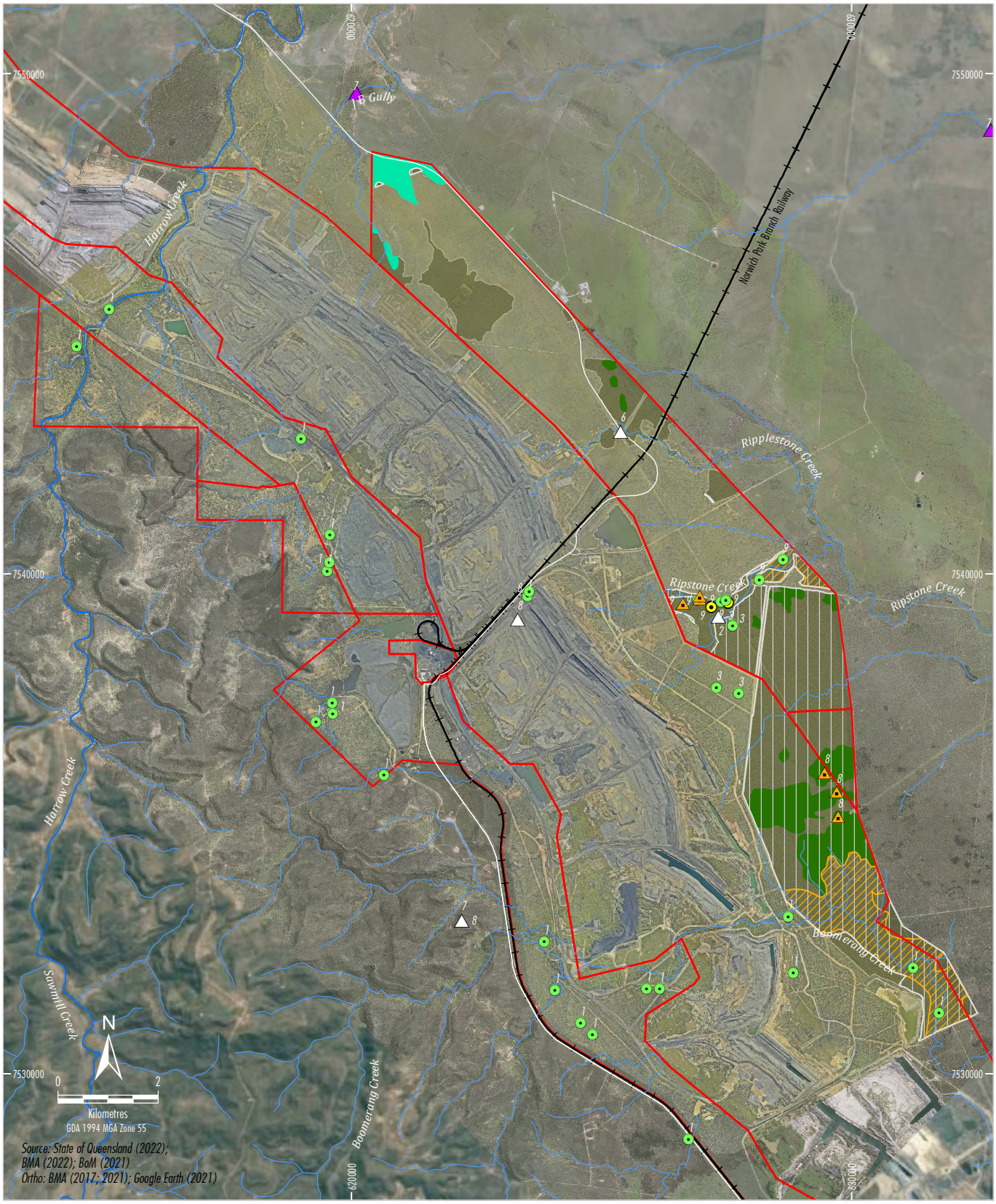
Mapping by the Queensland Government does not identify any groundwater dependent ecosystems (GDEs) or potential GDE aquifers within the Project area (Queensland Government, 2021a and 2021b).

The Groundwater Dependent Ecosystems Atlas (Bureau of Meteorology, 2021) provides regional mapping of GDEs. This mapping shows:

- potential terrestrial GDEs located along Ripstone Creek and Boomerang Creek (Figure 10c);
- potential aquatic GDEs located along Harrow Creek and within Peak Downs Mine tailings emplacement areas and mine water storages/pits, including Boomerang Dam; and
- the remainder of the Project area having either a low or no potential for groundwater interaction (Figure 10c).

Areas of potential terrestrial GDEs were mapped across BHP tenements using the Independent Environmental Scientific Committee developed method (Barron *et al.,* 2012). This method specifies the capture of Landsat TM imagery at wet and dry times to detect areas that are persistently greener and wetter than the surrounding landscape – these areas are inferred to be terrestrial GDEs.

Based on the results of the remote sensing, there are no areas within the Project area that are considered to be potential terrestrial GDEs.



LEGEND

- Mining Lease
- Railway
- Road
- Vegetation Management Watercourse and Drainage Line (Major)
- Vegetation Management Watercourse and Drainage Line (Minor)

Government Overlays *

- Essential Habitat
- Potential Terrestrial Groundwater Dependent Ecosystem
- Habitat Connectivity

Regional Ecosystems associated with Threatened Ecological Communities *

- Brigalow (*Acacia harpophylla* dominant and co-dominant)
- Poplar Box Grassy Woodland on Alluvial Plains
- Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin

Threatened Species Records

- Greater Glider (*Petauroides volans*)
- Koala (*Phascolarctos cinereus*)
- Ornamental Snake (*Denisonia maculata*)
- Squatter Pigeon (southern subspecies) (*Geophaps scripta*)
- Australian Painted Snipe (*Rostratula australis*)

Reference:

1 *Footprints (2009)*
2 *ERM (2021)*
3 *AECOM (2020)*
6 *Aurecon (2013)*
7 *Birdlife Australia (2021)*
8 *Atlas Living Australia (2021)*
9 *Ausecology (2021)*

* *Government mapping has been cropped to within the Proposed Project area.*

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PEAK DOWNS MINE CONTINUATION PROJECT

Government Mapping - Ecological Values

Figure 10c

Table 5
Potentially Occurring Conservation Significant Fauna Species

Scientific Name	Species Common Name	EPBC Act Status[1]	NC Act Status[1]	Likelihood
Actitis hypoleucos	Common Sandpiper	Mi	SLC	**Unlikely** – coastal
Apus pacificus	Fork-tailed Swift	Mi	SLC	**Known**
Calidris acuminata	Sharp-tailed Sandpiper	Mi	SLC	**Unlikely** – coastal
Calidris ferruginea	Curlew Sandpiper	CE, Mi	CE	**Unlikely** – coastal, no nearby records
Calidris melanotos	Pectoral Sandpiper	Mi	SLC	**Unlikely** – coastal and no suitable habitat within the Project area and surrounds
Chrysococcyx osculans	Black-eared Cuckoo	Ma	LC	-[2]
Cuculus optatus	Oriental Cuckoo	Mi	SLC	**Unlikely** – no nearby records
Dasyurus hallucatus	Northern Quoll	E	LC	**Unlikely** – no records within 10 km and species primary habitat not present
Denisonia maculata	Ornamental Snake	V	V	**Known**
Egernia rugosa	Yakka Skink	V	V	**Potential** – no nearby records, potential habitat present within Project area and surrounds
Elseya albagula	Southern Snapping Turtle	CE	CE	**Unlikely** – no nearby records and ephemeral creeks within the Project area and surrounds
Erythrotriorchis radiatus	Red Goshawk	V	E	**Unlikely** – suitable nesting habitat not available within Project area and surrounds
Falco hypoleucos	Grey Falcon	V	V	**Potential** – suitable habitat present within Project area and surrounds, closest record is approximately 66 km to the north-west
Furina dunmalli	Dunmall's Snake	V	V	**Potential** – no nearby records, potential habitat within Project area and surrounds
Gallinago hardwickii	Latham's Snipe	Mi	SLC	**Unlikely** – no wetlands or permanent natural water bodies and ephemeral creeks present within the Project area
Geophaps scripta Hardwicke	Squatter Pigeon (southern subspecies)	V	V	**Known**
Grantiella picta	Painted Honeyeater	V	V	**Unlikely** – no nearby records and species primary food (mistletoe) not observed within Project area and surrounds
Hirundapus caudacutus	White-throated Needletail	V, Mi	V	**Likely** – nearby records,
Hydroprogne caspia	Caspian Tern	Mi	SLC	**Known**
Lerista allanae	Allan's Lerista	E	E	**Unlikely** – no nearby records and outside known habitat
Macroderma gigas	Ghost Bat	V	E	**Potential** – no nearby records and outside species occurrence range
Monarcha melanopsis	Black-faced Monarch	Mi	SLC	**Unlikely** – no nearby records and no suitable habitat within the Project area and surrounds
Motacilla flava	Yellow Wagtail	Mi	SLC	**Unlikely** – suitable habitat not present within the Project area and surrounds

Table 5 (Continued)
Potentially Occurring Conservation Significant Fauna Species

Scientific Name	Species Common Name	EPBC Act Status[1]	NC Act Status[1]	Likelihood
Neochmia ruficauda ruficauda	Star Finch (eastern)	E	E	**Unlikely** – no nearby records
Nyctophilus corbeni	Corben's Long-eared Bat	V	V	**Unlikely** – no nearby records, outside likely occurrence and no preferred vegetation communities with dense understorey present
Pandion haliaetus	Osprey	Mi	SLC	**Unlikely** – no nearby records or suitable habitat within the Project area and surrounds
Poephila cincta cincta	Southern Black-throated Finch	E	E	-[2]
Petauroides volans	Greater Glider	V	V	**Known**
Phascolarctos cinereus	Koala (combined populations of Queensland, NSW and the ACT)	E	V	**Known**
Plegadis falcinellus	Glossy Ibis	Mi	SLC	**Likely** – recorded west of the Peak Downs Mine, potential foraging habitat within the Project area
Pteropus poliocephalus	Grey-headed Flying-fox	V	LC	**Unlikely** – nearest record approximately 120 km to the north-west
Rheodytes leukops	Fitzroy River Turtle	V	V	**Unlikely** – no nearby records and suitable habitat available within the Project area and surrounds
Rhipidura rufifrons	Rufous Fantail	Mi	SLC	**Known**
Rostratula australis	Australian Painted Snipe	E	E	**Unlikely** – sub-optimal habitat within the Project area and surrounds
Tachglossus aculeatus	Short-beaked Echidna	-	SLC	**Known**
Tringa nebularia	Common Greenshank	Mi	SLC	**Potential** – nearby record and potential habitat within the Project area

V = Vulnerable, E = Endangered, CE = Critically Endangered, Mi = Migratory, LC = Least Concern, SLC = Special Least Concern.

[1] Status current as at March 2022.

[2] Not considered in previous likelihood assessment, identified in March 2022 EPBC Act Protected Matters Report (DAWE, 2022).

Table 6
Potentially Occurring Invasive Species

Potentially Occurring Invasive Fauna		Potentially Occurring Invasive Flora	
Scientific Name	**Species Common Name**	**Scientific Name**	**Species Common Name**
Passer domesticus	House Sparrow	*Acacia nilotica subsp. Indica*	Prickly Acacia
Streptopelia chinensis	Spotted Turtle-dove	*Cryptostegia grandiflora*	Rubber Vine
Rhinella marina	Cane Toad	*Jatropha gossypifolia*	Cotton-leaved Physic-Nut
Canis lupus familiaris	Domestic Dog	*Lantana camara*	Lantana
Capra hircus	Goat	*Opuntia spp.*	Prickly Pears
Felis catus	Domestic Cat	*Parkinsonia aculeata*	Parkinsonia
-	Feral Deer	*Parthenium hysterophorus*	Parthenium Weed
Mus musculus	House Mouse	*Vachellia nilotica*	Blackthorn
Oryctolagus cuniculus	Rabbit		
Sus scrofa	Pig		
Vulpes vulpes	Red Fox		

Source: DAWE (2021).

Additional surveys of the Project area will be conducted to validate the BOM regional mapping.

A stygofauna survey was recently completed for the nearby Winchester South Project, which did not identify any stygofauna (Ecological Service Professionals, 2021a). Additionally, no stygofauna were recorded from bores sampled for the nearby Caval Ridge Horse Pit Extension Project (Ecological Service Professionals, 2021b).

A review of other previous stygofauna surveys in the region revealed that no stygofauna were found during sampling for the Olive Downs Project, nor were any obligate stygofauna taxa identified during 2019 and 2020 surveys by frc environmental for the Isaac Downs Project and Vulcan Project, respectively (Ecological Service Professionals, 2021a).

5.2 SOCIAL AND ECONOMIC ENVIRONMENT

5.2.1 Isaac Region

The Isaac region's economic development is based upon a combination of coal and mineral mining, agriculture and tourism (Isaac Regional Council, 2021a). The Isaac region is home to 25 currently operating coal mines. The coal mining industry in the region produces 42% of Queensland's total saleable coal (Isaac Regional Council, 2021a). Agriculture is also a key contributor to the local economy.

It is expected that the surrounding townships would provide the majority of the services needed by the Project workforce during its operation, given the multitude of currently existing services that cater to mine workers in these townships.

Considering the proposed Project mine life of up to approximately 93 years, and given that the Project would require the continual employment of a significant number of workers who would reside in the region, the Project is anticipated to generate long-lasting economic growth to the region, especially within Dysart and Moranbah.

Dysart and Moranbah are the two closest regional centres to the Project, and provide the majority of the social and economic services for the region (Isaac Regional Council, 2021b and 2021c).

Moranbah

Situated approximately 30 km to the north-west of the Project, Moranbah was established in 1969 specifically for miners and their families (Isaac Regional Council, 2021b). The 2016 Australian Census (Australian Bureau of Statistics, 2016) identified that Moranbah had a population of 8,735 people.

Moranbah is home to a number of education facilities, including two day-care facilities, two primary schools and a high school. Additionally, Moranbah offers a number of health services, including a hospital, as well as a number of dental and general medical centres.

The town also offers a range of recreational and accommodation services, including a number of hotels, a supermarket, shopping centre, multiple sporting fields and clubs, and a range of small stores and businesses (Isaac Regional Council, 2021b). Moranbah also contains the Moranbah Airport (owned by BMA), located approximately 5 km to the south-east of the township.

BMA has a long history with the Moranbah community and take great pride in the delivery of social value for the community for nearly 50 years (Section 10).

Dysart

Situated approximately 40 km to the south-east of the Project, and established in 1973 to service surrounding coal mines (Saraji and Norwich Park), Dysart provides a similar range of services to mine workers in the region, albeit on a smaller scale than Moranbah (Isaac Regional Council, 2021c). The 2016 Australian Census (Australian Bureau of Statistics, 2016) identified that Dysart had a population of 2,991 people.

Dysart's recreational facilities include an Olympic-sized swimming pool, a nine-hole golf course, as well as a number of sporting fields. The town also houses a hospital, dental surgery and medical centre. Additionally, Dysart has a variety of accommodation options, including multiple hotels, and several accommodation villages. Dysart is also home to a kindergarten, a primary and secondary school, and an airport approximately 2 km to the south-east.

BMA also has a history of contributing to the Dysart community (Section 10).

5.2.2 Accommodation and Housing

All BMA employees are eligible for company-provided accommodation options which include units, houses and WAV accommodation. Allocation of accommodation options is determined taking into account an employee's needs, the number of dependent children and other relevant family circumstances. BMA provides significant subsidies for housing costs, and also provides an ongoing housing maintenance and upgrades program.

The Project is a continuation of the existing Peak Downs Mine, which is a predominantly residential mine, with the majority of the workforce housed in BMA-owned properties in local towns. Construction and development activities associated with the Project (e.g. creek diversions and regional electricity transmission line realignments) would require additional short-term personnel during these periods (up to approximately 160 personnel). It is, therefore, expected that there would be sufficient capacity within existing BMA-owned accommodation to house the additional workforce required for the Project.

As part of the EIS, BMA would refine the construction workforce estimate to confirm the workforce requirements and timing of construction/development requirements.

Company-owned Housing

In the Isaac region, BMA owns and has access to approximately 1,400 residential properties (houses and units). Additionally, BMA owns accommodation villages in Moranbah and Dysart, with further detail provided below.

Moranbah

Should accommodation in Moranbah be required for the Project, it is expected that there would be capacity to support a portion of the Project workforce, given the range of accommodation options available (existing BMA-owned housing or hotels/motels) and the short-term nature of the additional workforce.

During development of the EIS, specifically the Social Impact Assessment (SIA) components of the EIS, BMA would consult with the Isaac Regional Council regarding the need for and availability of housing in the region, particularly in Moranbah. Consideration of housing availability in other nearby locations (e.g. Dysart) would also be undertaken during the EIS process.

Accommodation Villages

As noted above, BMA owns existing accommodation villages in Moranbah and Dysart, including Buffel Bark, Eureka, Dysart and Moranbah WAVs. These accommodation villages provide approximately 4,000 rooms, with an additional 1,000 rooms in accommodation villages owned by other parties, to which BMA has contractually-based access.

Currently, part of the Peak Downs Mine workforce is housed at the Moranbah and Dysart WAVs.

The Moranbah WAV is a joint asset with BMA's Goonyella and Broadmeadow Mines and comprises 246 relocatable dwellings and supporting infrastructure.

The Dysart WAV is a joint asset with BMA's Saraji Mine, with a 25 per cent allocation to Peak Downs Mine. The accommodation village comprises 216 relocatable dwellings and supporting infrastructure.

The Project would continue to utilise the existing BMA-owned accommodation villages to house the Project workforce.

5.2.3 Cultural Heritage

The Project area and the existing Peak Downs Mine are located within the extent of the Peak Downs Mine Cultural Heritage Management Agreement (CHMA), entered into to satisfy the Duty of Care provisions in accordance with the ACH Act.

BMA and the Barada Barna People entered into the CHMA in 2012. Peak Downs Mine operates in accordance with the provisions set out in the agreement to identify, protect, manage and conserve Aboriginal cultural heritage. Cultural heritage clearances will be obtained from the Aboriginal Party before Project-related ground disturbance is undertaken, in accordance with the CHMA.

Searches of the Queensland Heritage Register and the National Heritage List were undertaken, with no culturally significant sites identified within or in proximity to the Project area (DAWE, 2022; Queensland Government, 2021c). The closest significant site was located in Nebo, approximately 75 km to the north-east of the Project boundary.

Furthermore, the *Isaac Regional Planning Scheme 2021* does not identify any heritage places within the Project area and surrounds.

5.3 BUILT ENVIRONMENT, TRAFFIC AND TRANSPORT

The majority of the existing health, education and accommodation infrastructure within the region are located within the townships of Moranbah and Dysart (Figure 1).

Major road transport routes in the vicinity of the Project are the Peak Downs Mine Road (part of the Peak Downs Highway), located adjacent to and within the Project area, and the Saraji Road, which runs through the Project area (Figure 1).

A number of private unsealed roads and tracks (access tracks and haul roads) are also located within the Project area.

The Norwich Park Branch Railway runs through the Project area and services the local region. The railway forms part of the Goonyella System, one of four systems in Aurizon's Central Queensland Coal Network, and transports coal from the Bowen Basin to Hay Point and Dalrymple Bay Coal Terminals south-east of Mackay.

Peak Downs Mine, as well as several other existing mines in the region, have rail spurs and loops branching off the Norwich Park Branch Railway (Figure 1). The Norwich Park Branch Railway also services several railway stations within the vicinity of the Project.

The Project would continue to use the existing rail spur and loop off the Norwich Park Branch Railway to transport product coal to the Hay Point Coal Terminal for export to international customers.

5.4 LAND USE AND TENURES

The Project area is located within ML 70411, ML 1885 and part of ML 1775 held by BMA (Figure 8).

Figure 8 shows the mining tenements in the vicinity of the Project. This includes Mineral Development Licences, Exploration Permits for Coal, ATPs, MLs and Petroleum Leases (PLs).

As described in Section 4.2.1, ATP 1103 overlaps with areas of ML 70411, ML 1775 and ML 1885 where BMA is seeking surface area rights. Access within these overlapping tenures will follow the processes set out in legislation under the MR Act and MERCP Act (joint development plan) and the *Coal Mining Safety and Health Act 1999* (joint interaction management plan).

ML 70411 is adjacent to PL 485 held by the Eagle Downs Mine Joint Venture (South32 Eagle Downs Pty Ltd [50%] and Aquila Coal Pty Ltd [50%]). BMA has commenced communications with the Eagle Downs Mine Joint Venture with a view to determining, where it is commercially and technically feasible to do so, how to optimise the development of the State's resources.

Figure 5 shows the rural properties in the vicinity of the Project. The mining tenements for the Project intersect with two different properties, namely the Winchester Downs and Vermont Park properties. These are all freehold properties (Queensland Government, 2021a).

5.4.1 Key Local and Regional Land Uses

As described in Section 4.1, the Project is surrounded by a number of currently operating and potential coal mines.

The existing land use for properties in the Project area is predominantly cattle grazing with a small area of potential SCA. There are no nature conservation areas, including National or State Parks, in the Project area or immediate surrounds.

The Moranbah South Key Resource Area (No. 148) is located approximately 7 km to the north-west of the Project mining tenements.

5.4.2 Key Local and Regional Land Tenures

The Peak Downs Mine is located on leasehold land within ML 1775, ML 70412, ML 70403, ML 70463, ML 1783, ML 70371, ML 70377, ML 70142 and ML 70372, including part of the southern part of the Project area (within ML 1775).

The majority of the land within the Project area and surrounds to the north, east and south are freehold.

5.4.3 Native Title

Native title has been extinguished over the Project area. The Barada Barna People are the native title holders for the general region (Queensland Government, 2021a) (Section 4.1.2).

5.5 PLANNING INSTRUMENTS AND GOVERNMENT POLICIES

The *Isaac Regional Planning Scheme 2021* is the relevant scheme developed by the Isaac Regional Council (Section 4.2.3).

The following State and Regional plans, strategies and policies are relevant to the Project:

- *Environmental Protection (Air) Policy 2019* (EPP [Air]).
- *Environmental Protection (Noise) Policy 2019.*
- EPP (Water and Wetland Biodiversity).
- *Mackay, Isaac and Whitsunday Regional Plan* (Queensland Government, 2012).
- *Queensland Environmental Offsets Policy* (DES, 2021a).
- *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)* (DES, 2019).
- *State Planning Policy* (Department of Infrastructure, Local Government and Planning, 2017).

In addition, the various DES EIS information guidelines are relevant to the Project.

The following Commonwealth policies and guidelines are relevant to the Project:

- *Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (Department of Sustainability, Environment, Water, Population and Communities, 2012).
- *Information guidelines for proponents preparing coal seam gas and large coal mining development proposals* (Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development [IESC], 2018).

6 POTENTIAL PROJECT IMPACTS

6.1 NATURAL ENVIRONMENT

6.1.1 Land

Potential impacts to land associated with the development of the Project include:

- land use changes due to mining and infrastructure (before land is rehabilitated);
- alteration of landforms due to development of the open cut pits, waste rock emplacements, creek diversions and levees; and
- direct disturbance of potential SCA (within the Peak Downs Mine Road corridor).

Changes to land uses would be managed by progressively rehabilitating the land consistent with the current EA EPML00318213 for the Peak Downs Mine, noting that the Peak Downs Mine is transitioning to the PRC Plan regime under the EP Act. Approximately 312 hectares (ha) have been re-profiled, topsoiled and seeded at Peak Downs Mine.

The Project's final landform would be designed in consideration of the proposed mine sequence, extraction rate and mine layout; minimising potential environmental, social and economic impacts; and BMA's corporate objectives.

As the Peak Downs Mine is an existing mine that is transitioning to the PRC Plan regime, the landforms for the mine as a whole (i.e. including the Project) will include a mix of some approved residual voids which will be Non-Use Management Areas, and areas with Post-Mining Land Uses. The Project's final landform may include additional residual voids, which would be designed and developed in consideration of relevant guidelines and legislative requirements.

BHP have been involved in a number of studies to investigate alternative post-mining land use opportunities for our mine sites. Partners for this research include University of Queensland, Sustainable Minerals Institute, Central Queensland University, CRC TiME, Australian Coal Associated Research Program, Industry peers, International Council on Mining and Metals, Regional Councils and Traditional Owners.

Some of the options considered include:

- Agriculture.
- Forestry.
- Fishery.
- Renewable Energy.
- Pumped Hydro Energy Storage.
- Microalgae desalination and livestock food source.

BHP are particularly keen to pursue opportunities that identify and support implementation of collaborative regional opportunities for the use of post-closure mined land and assets.

The EIS will include an assessment of potential impacts to land, in consideration of the DES Guideline *Application Requirements for Activities with Impacts to Land* (DES, 2021b). Further, the EIS will demonstrate how all land disturbed by mining activities will be rehabilitated to a safe and stable landform that does not cause environmental harm and is able to sustain an approved post-mining land use (except in the case of any proposed non-use management areas).

Field verification of the land shown as 'potential SCA' within the Project footprint will be conducted during preparation of the EIS to determine whether the land meets the criteria for SCA. If it is determined to be SCA, BMA will consider opportunities to avoid impact to the SCA and will comply with the relevant provisions of the RPI Act associated with carrying out a resource activity within an area of regional interest.

6.1.2 Water

Potential direct and indirect impacts to water resources may occur due to the development of the Project, including:

- changes to surface water catchment areas, flow regimes and channel geomorphology, primarily associated with construction of diversions and levees and catchment excision;
- potential for erosion and sedimentation impacts during surface disturbance works;
- changes to surface water flows and localised effects to receiving water quality during times of controlled water releases from water storages;
- groundwater drawdown, changes to groundwater flow directions and decrease in baseflow to surface water systems associated with advanced pit dewatering and groundwater inflows to active open cut pits and final voids;
- impacts to other water users in the region; and
- localised effects on groundwater quality.

The EIS will include an assessment of potential impacts to water (including a Groundwater Assessment, Surface Water Assessment, Flood Assessment and Geomorphology Assessment), in consideration of the DES Guideline *Application Requirements for Activities with Impacts to Water* (DES, 2021c) and the IESC Guideline *Information guidelines for proponents preparing coal seam gas and large coal mining development proposals* (IESC, 2018).

6.1.3 Ecosystems, Flora and Fauna

Clearance during construction of Project infrastructure and progressive development of the open cut mining operation has the potential to disturb terrestrial and aquatic vegetation and habitats. The following biodiversity values are likely to be impacted as a result of development of the Project:

- REs;
- Matters of State Environmental Significance (MSES);
- Matters of National Environmental Significance (MNES);
- conservation significant species listed under the NC Act and EPBC Act;
- ESAs;
- wetlands; and
- GDEs.

Increased activity in the Project area would have the potential to introduce and spread additional weeds and feral animals.

The EIS will include Terrestrial and Aquatic Ecology Assessments, in consideration of the DES Guideline *Application Requirements for Activities with Impacts to Land* (DES, 2021b).

6.2 AMENITY, INCLUDING NOISE, AIR QUALITY, VIBRATION, LIGHTING, URBAN DESIGN AND VISUAL AESTHETICS

6.2.1 Noise and Vibration

Construction and operation of the Project will include a number of noise and vibration sources, including for example:

- earthmoving and mobile equipment used during construction activities;
- blasting during construction and operation of the mine;
- operation of the mining fleet and coal handling and processing infrastructure (crushers, conveyors, train load-out); and
- vehicle and train movements.

The Eagle Downs Mine is the closest sensitive receptor to the Project (located adjacent to the Project extent), with other sensitive receptors located more than 10 km from the Peak Downs Mine (Figure 6).

A Noise and Vibration Assessment will model representative construction and operation scenarios during the Project life to predict the potential noise and vibration impacts at sensitive receptors to inform the requirement for mitigation measures.

The Noise and Vibration Assessment will consider the DES Guideline *Application Requirements for Activities with Noise Impacts* (DES, 2021d).

6.2.2 Air Quality and Greenhouse Gas

Air quality objectives are benchmarks set to protect the general health and amenity of the community in relation to air quality. The sections below identify the potential air emissions generated by the Project and the applicable air quality objectives/criteria.

In Queensland, air quality is managed under the EP Act, the *Environmental Protection Regulation 2019* and the EPP (Air).

Mining activities during the life of the Project have the potential to generate particulate matter (i.e. dust) emissions in the form of:

- TSP matter;
- PM_{10} (a subset of TSP); and
- $PM_{2.5}$ (a subset of TSP and PM_{10}).

Mining activities generate particles in all the above size categories, with the majority generally larger than 2.5 micrometres (µm). Fine particles (less than 2.5 µm) are typically generated through combustion processes.

Construction and operation of the Project will include a number of emission sources, including for example:

- dust generated during earthmoving and construction activities;
- operation of the construction and mining fleets and coal handling and processing infrastructure (crushers, conveyors, train load-out);
- dust and other air pollutants generated from blasting during construction and operation of the mine;
- dust emissions from coal and soil stockpiles;
- air pollutants emitted from diesel-powered equipment and blasting;
- dust emissions from train loading and train movement; and
- direct (scope 1) and indirect (scope 2) greenhouse gases from electricity and diesel usage and fugitive coal seam methane release during construction and operation.

An Air Quality and Greenhouse Gas Assessment will model representative construction and operation scenarios during the Project life to predict the potential air quality impacts at sensitive receptors to inform the requirement for mitigation measures. The Air Quality and Greenhouse Gas Assessment will also predict the direct (Scope 1) and indirect (Scope 2 and Scope 3) greenhouse gas emissions associated with the Project.

The Air Quality and Greenhouse Gas Assessment will consider the DES Guideline *Application Requirements for Activities with Impacts to Air* (DES, 2021e).

6.2.3 Visual Aesthetics

Development of the following Project components would potentially result in visual and lighting impacts on nearby private receptors and public viewpoints (e.g. local roads):

- waste rock emplacements;
- vegetation clearance;
- open cut pit development;
- mobile and fixed lighting associated with night-time mining operations; and
- levees.

An assessment of visual and lighting impacts will be prepared as part of the EIS, and will consider the location and sensitivity of viewing locations. As the Project is an extension of the Peak Downs Mine, within an existing mining region, it is expected that any potential impacts would not be significant from the majority of viewpoints.

6.3 SOCIAL ENVIRONMENT – POTENTIAL BENEFICIAL AND ADVERSE IMPACTS

Potential beneficial and adverse impacts of the Project on the social values of the local and regional communities would be identified through direct engagement with potentially affected stakeholders and analysis of potential impacts against the attributes of the existing social environment.

The Project is expected to have a range of beneficial and adverse social impacts within the community, including the following examples:

- employment and training opportunities;
- injection of wealth into the local and regional economies;
- demographic change in regional and rural areas;
- increased housing demand (temporary and permanent);
- increased demand on community services and infrastructure (e.g. childcare and health services);
- land use changes;
- potential amenity impacts (air quality, noise, vibration and visual); and
- potential impacts on social cohesion.

Development of appropriate social impact management strategies for the Project will be key to managing the potential impacts on the social environment. The EIS will include a SIA, which itself will include a Social Impact Management Plan presenting the engagement, workforce, accommodation, procurement and health and wellbeing strategies for the Project.

The SIA will be prepared in accordance with the Coordinator-General's *Social Impact Assessment Guideline* (Department of State Development, Manufacturing, Infrastructure and Planning, 2018) and the *Strong and Sustainable Resource Communities Act 2017* (SSRC Act).

6.4 ECONOMIC EFFECTS

The Project would result in significant economic benefits, including:

- the continual employment of approximately 2,400 people during operations (including contractors and labour hire) and additional workforce required during the construction phases of the Project;
- flow-on effects and indirect benefits to the local and regional economies;
- potential for development or expansion of new or established businesses in the local area and surrounds; and
- payment of significant royalties to the State and other tax payments.

The EIS will include an Economic Assessment of the potential benefits and impacts the Project would have on labour demand, local business, wages, input costs and household goods and services, prepared in accordance within the *Economic Impact Assessment Guideline* (Department of State Development, 2017).

6.5 BUILT ENVIRONMENT

Traffic associated with the construction and operation of the Project has the potential to increase delays at existing and new intersections on the local and regional road network. Additional traffic volumes may also impact the pavement of key roads that would be used by the Project workforce and visitors/deliveries.

Potential impacts on the local and regional road network will be assessed through a Road Transport Assessment as part of the EIS.

No changes to existing rail transport routes or daily rail movements are proposed for the Project. On average, it is expected that approximately 21 trains would be loaded per week when the Project is operating at its target production rate. A peak of up to three trains per day may be loaded on occasions to allow performance standards at the port to be met.

An analysis of the capacity of the rail and port system to accommodate the predicted demand from the Project will be included in the EIS.

6.6 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE UNDER THE EPBC ACT

MNES potentially relevant to the Project include:

- listed threatened species and ecological communities (Sections 5.1.4 and 5.1.5);
- migratory species (Section 5.1.5); and
- a water resource, in relation to CSG development and large coal mining development (Section 5.1.2).

BMA will submit an EPBC Act referral for the Project with DAWE to determine whether the Project is a 'controlled action' requiring assessment and approval under the EPBC Act. The referral will detail the potential impacts associated with the Project on MNES. The controlling provisions for the Project (should it be declared a 'controlled action') would be determined by DAWE.

7 ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

7.1 NATURAL ENVIRONMENT

Measures that would be implemented to manage potential impacts on the natural environment would include, but not necessarily be limited to:

- progressive rehabilitation in accordance with the Peak Downs Mine PRC Plan and Progressive Rehabilitation and Closure Plan Schedule (PRCP Schedule) (which would include the Project), noting transitional arrangements will apply;
- appropriate landform design and establishment of post-mining land uses in consideration of agricultural land uses and native ecosystem values of the surrounding landscape, noting that this will be incorporated in the EA and PRCP Schedule, subject to transitional arrangements;
- soil management practices, including the stripping and stockpiling of soil for use in rehabilitation;
- appropriate erosion and sediment controls and upslope drainage during vegetation clearance, soil stripping and rehabilitation activities;
- clear definition of areas to be cleared in a progressive manner as part of surface disturbance protocols;
- minimising water use and management of the site water management system in accordance with EA EPML00318213 conditions;
- minimising licensed extraction/harvesting of groundwater and surface water resources;
- dust suppression within active mining areas and at coal handling and processing circuits;
- appropriate design of blast events;
- designing for overall energy efficiency;
- consideration of purchasing renewable energy to supply the mine operations to minimise greenhouse gas emissions;
- weed and feral animal control strategies;
- preparation of management plans and monitoring programs; and
- provision of biodiversity offsets for residual significant impacts to MSES and MNES (where required) in accordance with relevant State and Commonwealth policies and legislation.

The above measures will be refined and expanded upon to address the predicted impacts identified as part of the environmental assessments and stakeholder engagement to be conducted as part of the EIS.

Given that the Peak Downs Mine is presently operating and any impacts to the environment are regulated by the current EA EPML00318213 (amongst other approvals), BMA already has in place sophisticated management measures, which would be reviewed and augmented where necessary to manage potential impacts from the Project.

7.2 BUILT ENVIRONMENT

The Peak Downs Mine Road realignment and associated rail level crossing design/construction requirements would be developed in consultation with the Isaac Regional Council and DTMR.

Specific measures to mitigate impacts to the regional and local road network associated with Project traffic would be identified as part of the EIS (e.g. timeframes and escort requirements for heavy and oversize vehicle deliveries, dangerous goods transport controls).

Management measures associated with the transport of product coal (if any) would be developed as part of the EIS, in consultation with relevant stakeholders.

7.3 CULTURAL HERITAGE MANAGEMENT PLAN (INDIGENOUS)

The Project area is located within the Barada Barna People (QCD2016/007) Native Title Determination Application Area registered with the National Native Title Tribunal (2021). Native title has been extinguished over the Project area (Sections 4.1.2 and 5.2.3).

BMA would operate within the Project area in accordance with the processes set out in the CHMA for the effective protection and conservation of Aboriginal cultural heritage. These processes include undertaking cultural heritage surveys in consultation with the Barada Barna People and preparation of a cultural heritage survey report prior to conducting any ground disturbance activities, and management strategies in the event of any discovery of Aboriginal cultural heritage.

7.4 NON-INDIGENOUS CULTURAL HERITAGE MANAGEMENT

There are no known significant non-Indigenous heritage values in the Project area. If significant non-Indigenous heritage values are identified during preparation of the EIS, appropriate management measures would be developed.

7.5 GREENHOUSE GAS MANAGEMENT PLAN

Measures to minimise the generation of direct (Scope 1) greenhouse gas emissions would be developed as part of the EIS and would likely include seeking the most efficient mine design, monitoring the fuel efficiency of mobile equipment, minimising the double-handling of materials and consideration of the use of alternative renewable energy sources to power facilities and equipment on-site.

BMA is actively assessing and pursuing options to reduce operational greenhouse gas emissions (Scope 1 and Scope 2) consistent with BHP's emissions reduction targets. BHP's emissions reduction targets are wholly aligned with the Queensland Government's, specifically:

- 30% reduction in Scope 1 and 2 emissions by 2030; and
- Net zero Scope 1 and 2 emissions by 2050.

Technical studies are underway to confirm the preferred pathway to materially reduce BMA's emissions and it is expected that BMA will decarbonise its assets by focussing on:

- energy efficiency;
- securing low carbon renewable electricity;
- electrification and fuel switching; and
- non-energy emissions reductions.

Through partnering with customers and others to accelerate the transition to carbon neutral steelmaking, BHP is also pursuing the long-term goal of net zero Scope 3 emission by 2050 (https://www.bhp.com/sustainability/climate-change#goals). Consistent with this approach, efforts are also underway to examine coal processing treatments that can improve combustion efficiency, and BMA is working with its customers to understand CO_2 reduction opportunities.

Greenhouse gas emissions, energy production, energy consumption and other relevant information would be reported annually in accordance with the Commonwealth *National Greenhouse and Energy Reporting Act 2007*.

7.6 WASTE MANAGEMENT

Management of waste streams generated by the Project would be governed by the following relevant Queensland legislation:

- EP Act;
- *Environmental Protection Regulation 2019*;
- *Waste Reduction and Recycling Act 2011*; and
- *Waste Reduction and Recycling Regulation 2011*.

Waste management at the Project would be consistent with the current Waste Management Plan for Peak Downs Mine and follow the waste management hierarchy described in the *Waste Reduction and Recycling Act 2011*:

a) avoid unnecessary resource consumption;

b) reduce waste generation and disposal;

c) re-use waste resources without further manufacturing;

d) recycle waste resources to make the same or different products;

e) recover waste resources, including the recovery of energy;

f) treat waste before disposal, including reducing the hazardous nature of waste; and

g) dispose of waste only if there is no viable alternative.

The Project would continue to use the on-site landfill for the disposal of certain waste streams generated on-site, in accordance with the conditions of EA EPML00318213 and the Waste Management Plan and Environment Landfill Management Procedure for Peak Downs Mine. Some waste streams, including hazardous wastes, would be removed from site by licensed contractors and recycled or disposed of at appropriate off-site facilities.

The Project waste management strategy would be developed further as part of the EIS, and would be prepared in consideration of the DES Guideline *Application Requirements for Activities with Waste Impacts* (DES, 2021f).

7.7 HAZARD AND RISK

Hazards and risks are required to be identified and managed to reduce potential harm to people and the environment, as well as property. The EIS would include an assessment of both on-site and off-site risks.

The EIS risk assessment would be undertaken in accordance with Australian Standard/New Zealand Standard International Standards Organisation (ISO) 31000:2018 *Risk Management – Guidelines* and ISO 31010:2019 *Risk Management – Risk Assessment Techniques*.

In relation to flooding, all practicable measures would be taken to prevent flooding of the Project open cut and infrastructure areas. This would include flood levees being designed to provide appropriate flood immunity.

The *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (DES, 2016) would be used to guide design, construction and management of water storage and management structures and facilities.

7.8 HEALTH AND SAFETY

As described in Section 7.7, the EIS would include an assessment of risk, including on-site and off-site health and safety risks.

In consideration of the *Coal Mining Safety and Health Act 1999*, BMA would update the existing Peak Downs Mine risk management and health and safety management system with defined mitigation measures and strategies based on the outcomes of the risk assessment and consistent with the management systems developed for BMA's other Queensland mining operations.

7.9 ENVIRONMENTAL MANAGEMENT

BMA would implement its integrated Environmental Management System for the Project to guide the implementation of environmental management commitments and strategies. The Environmental Management System would also guide the monitoring and review process with the aim of continually improving environmental performance at the operations.

BMA employs a team of appropriately qualified environmental personnel to monitor compliance with relevant legislation, approval instruments and environmental planning frameworks for the existing Peak Downs Mine and would continue to do so for the Project.

The existing Peak Downs Mine management plans would be updated and augmented in consultation with relevant stakeholders and utilised for day-to-day management of the Project operations/activities.

8 APPROVALS REQUIRED FOR THE PROJECT

Table 7 provides a description of the potential approvals required for the Project. These approvals may be refined through the environmental impact and mine planning process.

If declared a Coordinated Project, an EIS will be prepared under Part 4 of the SDPWO Act. Project components will be evaluated through the EIS such that the Coordinator-General can consider the Project as a whole and recommend approval conditions accordingly.

Table 7
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
Commonwealth Government Approvals					
EPBC Act (section 45)	EPBC Act referral and approval	Referral to the Commonwealth Minister for the Environment is required if the Project may have a significant impact on MNES to determine if the Project is a 'controlled action' requiring approval under the EPBC Act.	If the Project is likely to have a significant impact on MNES, it should be referred to the Minister to determine whether it is a Controlled Action. If the Project is determined to be a Controlled Action, approval from the Minister will be required and it is expected that it will be assessed through a Bilateral Agreement between the Commonwealth and the State of Queensland under section 45 of the EPBC Act relating to Environmental Assessment.	DAWE	Yes
State Government Approvals					
SDPWO Act (section 27)	Coordinated Project declaration, Prescribed Project declaration, critical infrastructure designation	In accordance with section 27(2)(b), the Coordinator-General may declare that a Project is a Coordinated Project if it has: • complex approval requirements, imposed by a local government, the State or the Commonwealth; • significant environmental effects; • strategic significance to the locality, region or State, including any infrastructure, economic and social benefits, capital investment or employment opportunities it may provide; or • significant infrastructure requirements.	The IAS forms part of the application for the declaration of the Project as a Coordinated Project (Section 1.2). The Coordinator-General will consider the application and determine whether the Project meets the requirements for declaration as a Coordinated Project. If declared a Coordinated Project, it is likely that it will be declared on the basis that an EIS is required for the Project which will be prepared in accordance with Part 4 of the SDPWO Act, allowing the Coordinator-General to coordinate the process, and ultimately providing some protection from third party review of the Coordinator-General's mandated conditions.	Department of State Development, Infrastructure, Local Government and Planning (DSDILGP)	Yes

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
SDPWO Act (section 27) (Continued)	Coordinated Project declaration, Prescribed Project declaration, critical infrastructure designation (Continued)	A Prescribed Project is, among other things, one that the Minister (the Minister for State Development, Infrastructure, Local Government and Planning or Deputy Premier) considers to be of major economic or social significance to the State and provides a prescribed process for timely decision-making. A critical infrastructure designation is available for prescribed projects that the Minister considers to be critical or essential to the State for economic, environmental or social reasons.	The Coordinator-General may also, or separately, declare the Project to be a Prescribed Project. This allows the Coordinator-General to issue 'progression notices' (requiring other arms of Government to take steps in a prescribed time frame) and to step in and make decisions on behalf of other Government agencies. If the Project is declared to be a Prescribed Project, it may also be declared to be a Project for critical infrastructure.	DSDILGP	Yes
ACH Act (section 86)	Cultural Heritage Management Plan (CHMP) or other form of agreement	Where an EIS is required, a CHMP must be in place and approved under Division 2 of Part 7 of the ACH Act as a pre-requisite to the grant of any lease, licence, permit, approval or other authority required under any Act for the Project.	An existing CHMA exists between BMA and the Barada Barna People, which covers the Project area. In accordance with section 86 of the ACH Act, as the extent of the Project is the subject of an existing agreement (CHMA), a CHMP is not required for the Project.	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	No

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
EP Act (section 226, section 318F, Schedule 3 and Part 27 of Chapter 13)	Amended Environmental Authority	An amendment to the existing Peak Downs Mine EA EPML00318213 is required for the Project (section 226 of the EP Act). The amended EA will authorise the Project, and in particular, activities under the EP Act on areas within ML 70411, ML 1775 and ML 1885 where BMA does not currently hold surface area rights (which would be obtained by an application under the MR Act), which includes the following ERAs that may be undertaken as part of the Project: • mining black coal; • Regulated Dams; • ERA 8 – Chemical Storage; • ERA 31 – Mineral Processing; and • ERA 63 – Sewage Treatment. It is considered that the Project would be a major amendment given the scale of works proposed would not meet the minor amendment threshold (for example, the addition of surface rights to ML 70411, ML 1885 and ML 1775).	ERAs, including mining black coal, would be conducted as part of the Project.	DES	Yes
	Notification of land – for notifiable activities	A proponent must notify DES of any activities listed in Schedule 3 of the EP Act that have the potential to cause land contamination. Notifiable activities on-site are likely to include: • abrasive blasting; • chemical storage (>10 t); • mine wastes; and • petroleum product or oil storage (>25,000 litres diesel).	Required one week prior to activity occurring.	DES	Yes

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
EP Act (section 226, section 318F, Schedule 3 and Part 27 of Chapter 13) (Continued)	Registration as a suitable operator	Applicant must be registered as a suitable operator under section 318F of the EP Act prior to issue of the Environmental Authority.	BMA is registered as a suitable operator under section 318F of the EP Act.	DES	No
	PRC Plan and PRCP Schedule	A PRC Plan and supporting PRCP Schedule are not required to accompany an amendment application to EA EPML00318213. The EA will regulate the land outcomes and rehabilitation requirements for the Project initially, noting that the Project would be incorporated into the Peak Downs Mine PRC Plan and Schedule, as part of a PRCP amendment.	A PRC Plan (including the PRCP Schedule) is required to be developed for the Peak Downs Mine in accordance with the transitional provisions of the EP Act (under Part 27 of Chapter 13 of the EP Act). Separate to the EIS, BMA will prepare a PRC Plan and accompanying PRCP Schedule in accordance with the notice provided under section 754 of the EP Act. The PRC Plan and supporting PRCP Schedule are to: • plan where and how activities will be carried out on land to maximise the progressive rehabilitation of the land to a stable condition; and • provide for the condition to which the land must be rehabilitated to prior to the surrender of the Environmental Authority.	DES, Queensland Treasury, Department of Resources (DoR)	No
MR Act (section 276)	Additional surface area on mining leases	Coal mining and production and associated activities, including processing, must be conducted within a mining lease.	Mining and associated activities to be conducted as part of the Project, within ML 70411, ML 1885 and part of ML 1775 will require additional surface rights (approximately 1,559 ha) to be added to the mining leases.	Queensland Treasury, DoR	No
RPI Act (Part 3)	Regional Interests Development Approval	Conducting a resource activity within an area of regional interest.	Areas of regional interest are located within the Project area (SCA). If the resource activity is to occur within an area of regional interest, and an exemption (e.g. land owner agreement or pre-existing resource activity) does not apply, a Regional Interest Development Approval will be required.	Department of Agriculture and Fisheries, DSDILGP	Yes (if required)

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
Environmental Offsets Act 2014 (EO Act) (sections 10 and 18), EPBC Act	Approval of notice of election and offset delivery plan.	A significant residual impact on a prescribed environmental matter.	Where an activity has a significant residual impact on a prescribed environmental matter, an environmental offset may be required, to counterbalance this impact. The EO Act establishes the framework for delivery of environmental offsets at the State level, without limiting the functions or powers under the SDPWO Act. Any applicable offsets will be conditioned as part of the amended EA EPML00318213 and the EPBC Act approval.	DAWE, DES	Yes
NC Act *Nature Conservation (Animals) Regulation 2020* (NC Animals Regulation) (section 335)	Species Management Program	Clearing of breeding habitat.	A Species Management Program will need to be prepared in accordance with section 335 of the NC Animals Regulation for approval by the DES prior to tampering with animal breeding place.	DES	Yes
NC Act *Nature Conservation (Plants) Regulation 2020* (Part 5)	Vegetation clearing permits	A 'Protected plant clearing permit' is required if: • the area is within a 'high-risk area'; or • BMA is aware of any endangered, vulnerable or near threatened (EVNT) species within the area to be cleared. Whether an area is 'high-risk' is determined by the 'protected plans flora survey trigger map' which allocates certain areas where EVNT species are known or likely to exist. If an area to be cleared is not identified on a flora survey trigger map as a high-risk area, a flora survey is not required.	The Project may be required to obtain a clearing permit to authorise the clearing of EVNT species under the NC Act. Flora survey trigger maps for clearing protected plants, obtained for the land underlying the Project, indicate that there are no high-risk areas. The flora survey trigger map must be reviewed every 12 months and can be amended by DES at any time to add or remove a high-risk area. It is possible that the flora survey trigger map could be amended to add or remove a high-risk area affecting the Project area, however this is unlikely.	DES	Yes

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
Water Act 2000 (Water Act) (sections 101, 1046), MR Act (section 334ZP)	Water allocation or water licence - use and take of surface water or groundwater	Under the Water Act, a person must not take, supply or interfere with water unless authorised. In terms of water required for the Project development or operation, section 101 of the Water Act provides that, subject to any alteration or limitation prescribed under a moratorium notice, water plan or a regulation under section 1046 of the Water Act, a person may: • take overland flow water for any purpose; or • take or interfere with underground water for any purpose. Additionally, under section 334ZP of the MR Act the holder of a mining lease may take or interfere with underground water in the area of the mining lease if the taking or interference happens during the course of, or results from, the carrying out of an authorised activity for the mining lease (associated water).	The Project may involve taking of, or interfering of with, overland flow water and associated water. The Project is located within the Isaac River catchment (Isaac Connors GMA) and is subject to the *Water Plan (Fitzroy Basin) 2011*. The *Water Plan (Fitzroy Basin) 2011* regulates interfering with, and taking of, overland flow water and groundwater from within the Fitzroy Water Plan Area, and states that: (a) the volume of overland flow water necessary to satisfy the requirements of an Environmental Authority may be taken without a water licence; and (b) a person may only take or interfere with groundwater in a GMA (such as Isaac Connors) under a water permit, water licence or water allocation etc. In accordance with the MR Act, the Water Act and the complementary requirements of the EP Act, the EIS for the Project would assess the impacts of BMA exercising its right to take or interfere with associated water and overland flow water. This assessment would inform conditions to be included in the amended EA EPML00318213. If associated water is taken under the general authorisation under section 334ZP of the MR Act, BMA is required to measure and report on the volume of associated water taken (including by evaporation if relevant) using the Queensland Digital Exploration Reports System within 21 days of the reporting period. Existing approvals for existing diversions may be amended to authorise any new diversions required for the Project.	DES, DRDMW, DoR, Queensland Treasury	Yes

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
State Government Approvals (Continued)					
Water Act (section 98)	Water licence/riverine protection permit or amended Environmental Authority	A 'riverine protection permit' may be required for activities that involve excavation or placing fill in a watercourse, lake or spring.	The Project would include a diversion of Ripstone Creek. Exemption to the requirement for a riverine protection permit applies where excavation or placing fill in watercourse, lake or spring is authorised under an Environmental Authority. In accordance with section 98 of the Water Act, a licence for taking or interfering with water under the Water Act is not required to divert Ripstone Creek, as the diversion is associated with a resource activity, will be located within a mining tenement and is being assessed through the Environmental Authority process. Similarly, no water licence is required for relocating the low-flow diversions of Ripstone Creek and Boomerang Creek.	DES, DRDMW	Yes
Environmental Protection Regulation 2019 (section 41AA)	Release of particular contaminants to Great Barrier Reef catchment waters and other waters	Under the *Environmental Protection Regulation 2019*, the administrative authority must refuse to grant the application if the authority considers that the residual impact will not be adequately counterbalanced by offset measures for the Project.	The Project would include the controlled release of mine affected water in accordance with the conditions of EA EPML00318213 (as amended).	DES	Yes
Transport Infrastructure Act 1994 (section 255)	Approval to interfere with a railway	Required if the Project would interfere with a railway. In this context, 'interfere' means: • carry out works in or on a railway corridor; or • otherwise interfere with the railway or its operation.	The Project would relocate the existing Peak Downs Mine Road and associated level crossing over the Norwich Park Branch Railway to access the coal within the Project area. Given that approval is required to interfere with a railway, BMA will seek for these works to be approved by the DTMR under section 255 of the *Transport Infrastructure Act 1994*.	DTMR	Yes

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
Local Government Approvals					
Planning Regulation 2017 (Schedule 21, Part 1)	Development Application	Development approvals pursuant to the *Planning Regulation 2017*, the *Isaac Regional Planning Scheme 2021* may be required for operational works (such as excavation and filling, clearing of native vegetation and works that allow taking or interfering with water), material change of use, building works and reconfiguring a lot.	Project components located outside a mining lease.	Isaac Regional Council	Yes
Other Approvals and Consents					
MERCP Act (Chapter 4)	Overlapping tenements	The interaction between ML 70411, ML 1885 and part of ML 1775, and overlapping petroleum tenements is governed by MERCP Act Chapter 4.	The areas for which BMA will be seeking additional surface area rights within ML 70411, ML 1775 and ML 1885 are partially overlapped by ATP 1103 held by Arrow. As BMA requires sole occupancy of the overlap area for its operations, an 'advance notice' must be given to Arrow within 10 business days after the application for additional surface area rights is lodged. BMA must also give an '18 months notice' to Arrow at least 18 months prior to the date it requires sole occupancy of the relevant area of the overlaps (i.e. to commence mining or to construct permanent infrastructure that requires sole occupancy). Should Arrow give notice of its intention to apply for a petroleum lease and should the petroleum lease be granted before a mining lease in the overlap area, BMA may be prevented from gaining sole occupancy of the overlap area for up to 11 years. In these circumstances a joint development plan will be required between BMA and Arrow. The joint development plan would be a vehicle for the companies to negotiate an earlier mining commencement date for sole occupancy by BMA.	DoR	No

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
Other Approvals and Consents (Continued)					
MR Act (Part 10), MERCP Act (sections 121 and 122)	Restricted land consent	Where restricted land, including land within 50 m laterally of prescribed distances of artesian wells, bores, dams, stockyards or water storages and 200 m laterally of permanent buildings used as a residence or for business are identified as included within the boundaries of the proposed mining lease, consent will be required from: • any owners of the restricted land for the purposes of the MR Act and MERCP Act to the inclusion of the restricted land areas in the surface area of the mining lease; and • relevant owners and occupiers of the restricted land areas outside the mining lease boundaries for the Project, before BMA can enter the area of the restricted land to carry out activities.	If restricted land is identified it will be relevant to the undertaking of the Project, and consent of any relevant landowners will be requested.	Queensland Treasury, DoR	No
MR Act (section 85)	Land access – compensation agreements	A mining lease cannot be granted unless: • compensation has been determined (whether by agreement or by determination of the Land Court) between BMA and each person who is the owner of land the surface of which is the subject of the application and of any surface access to the application; and • the condition of the agreement or determination have been or are being complied with by BMA.	Compensation will be required to be agreed or determined with the underlying land owners for all areas where surface area rights are sought for the mining leases.	Queensland Treasury, DoR	No

Table 7 (Continued)
Principal Required Statutory Approvals for the Project

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Within EIS Scope[1]
Other Approvals and Consents (Continued)					
SSRC Act (subsection 9[3] and section 11)	N/A – no 'approval' required.	The SSCRC Act is applicable to a 'large resource project' which includes resource projects for which an EIS is required.	The SSRC Act outlines mandatory requirements for a SIA in Queensland for resource projects undertaking an EIS under the EP Act or the SDPWO Act (which is expected to be the Project). The object of the SSRC Act is to ensure that residents in communities in the vicinity of large resource projects benefit from the construction and operation of these projects. The SSRC Act contains three main aspects: • prohibition of a 100% fly-in-fly-out (FIFO) workforce during the operational stage of large resource projects; • prevention of discrimination against local residents in recruitment of workers; and • requirement to carry out a SIA as part of the EIS.	DSDILGP	Yes

[1] If declared a Coordinated Project, an EIS will be prepared under Part 4 of the SDPWO Act. Project components will be evaluated through the EIS such that the Coordinator-General can consider the Project as a whole and recommend approval conditions accordingly.

9 COSTS AND BENEFITS SUMMARY

The Project would produce the following benefits for the local area, Queensland and for the national economy:

- continuation of current operational employment and generation of additional construction jobs for the region, with many more expenditure-induced indirect jobs;
- continued support for regional business, including construction-related capital expenditure and substantial ongoing operating expenditure;
- State and Commonwealth corporate tax contributions;
- payment of significant coal royalties to the Queensland Government over the life of the Project; and
- ongoing financial support for regional community groups.

A cost-benefit analysis would be conducted as a component of the Economic Assessment for the EIS and would detail the benefits and costs attributed to the Project.

Potential benefits and costs in addition to relevant positive and negative externalities would be valued where reasonable, or otherwise described using quantitative and qualitative information.

9.1 LOCAL, STATE AND NATIONAL ECONOMIES

The demand for high quality metallurgical coal continues to remain strong due to the industrial growth globally. The development of coal resources is, therefore, considered necessary to meet the current demand from this market.

Development of the Project will provide continuation of employment for the approximate 2,400 FTE personnel at the Peak Downs Mine and significant direct employment opportunities to the regional communities, and long-term flow-on social and economic benefits.

Economic contributions would be considered in the EIS at the local, regional and national levels, and in accordance with the Coordinator-General's *Economic Impact Assessment Guideline* (Department of State Development, 2017).

9.2 NATURAL AND SOCIAL ENVIRONMENTS

Potential impacts on the natural and social environments would be considered as part of the detailed impact assessments in the EIS, including the cost-benefit analysis component of the Economic Assessment.

10 COMMUNITY AND STAKEHOLDER CONSULTATION

10.1 BACKGROUND

Coordinated stakeholder engagement is a key element of the assessment process for large developments and entails the inclusive and consultative interaction between a proponent and those organisations, communities and individuals potentially impacted by a project.

As a leading Australian mining company with a strong track record of identifying and developing high-quality coal assets, BMA seeks to observe best practice stakeholder engagement approaches at all times. This means undertaking appropriate stakeholder identification, initiating meaningful and transparent dialogue, and listening to, and understanding, any concerns and issues as they arise.

BMA engages with the Moranbah community and other stakeholders through:

- Bi-annual meetings with the Isaac Regional Council.
- Community Reference Group Meetings (including Smart Transformation Advisory Council and Youth Advisory Council).
- Regional Interagency Meetings.
- Social investment partnerships, which include:
  - Vanguard Health.
  - Bowen Basin Bright Minds.
  - Queensland Rugby League.
  - Queensland Museum.
  - Queensland Minerals and Energy Academy.
  - CQ Rescue.
- Benefiting My Community Program.
- Community organisation engagements/meetings.
- Bi-monthly Community Connect Newsletter.

BHP's Local Buying Program was established to support small local businesses in engaging with BMA and BHP. This program has over 220 local businesses participating from the Isaac region, with over $20M AUD approved spend injected into the region during FY21.

A critical element to the Local Buying Program, is the Local Buying Foundation, which operates across the Central Highlands, Isaac and Mackay regions to build sustainable business communities for the future.

10.2 STAKEHOLDER ENGAGEMENT OBJECTIVES FOR PEAK DOWNS MINE

Stakeholder groups will have varying levels of interest, influence and information requirements in relation to a proposed development.

Consistent with the International Association for Public Participation Spectrum of Public Participation, which is acknowledged as an industry-leading stakeholder engagement framework, the focus of consultation at this stage of Project development is to 'inform' and 'consult'.

The key objectives of the program of stakeholder engagement for the Project are to:

- identify key stakeholders to determine their level of interest and influence;
- initiate contact with stakeholders to inform them about the Project, including any aspects of special relevance and interest based on the above assessment;
- identify any issues and concerns in relation to the Project;
- work constructively with stakeholders to address or mitigate issues raised during the approvals period; and
- provide feedback, where appropriate, to stakeholders on their issues and how these have been addressed.

10.3 OUR ENGAGEMENT PRINCIPLES

BMA adopts BHP's approach to community performance and stakeholder engagement which is consistent with the open and transparent approach outlined by Mitsubishi Development (https://www.mdp.com.au/community/our-approach).

BHP seeks to develop strong, mutually beneficial relationships with the local communities and regions where we do business and contributing to their economic and social development.

BHP also understand and minimise adverse social and human rights impacts from our activities. There are three key principles:

1. **Understanding host communities:** To inform community engagement, community development and business plans, BHP seeks to understand the social and economic environment and identify and analyse stakeholders, social impacts and business risks.
2. **Engaging with communities:** To build strong, mutually beneficial relationships, BHP facilitates regular, open and honest dialogue to understand the expectations, concerns and interests of stakeholders and incorporate these into business plans.
3. **Community development:** To enhance reputation and social licence to operate and contribute to economic and social development and enhancement, BHP works openly with the communities in which it operates and with governments.

BHP's *'Our Requirements for Community'* details requirements to:

- Enable stakeholder expectations, concerns and interests to be understood and taken into account in business planning.
- Address gaps and opportunities identified in the social impacts and opportunities assessment.
- Facilitate open and honest dialogue.
- Consider specific needs of different stakeholders.
- Involve disadvantaged and vulnerable groups where identified, including women and Indigenous peoples.
- Use engagement methods appropriate for the culture and context.

10.4 STAKEHOLDER ENGAGEMENT STRATEGY

It is anticipated that the following stakeholders would be consulted at various stages of Project development:

- local landholders;
- community groups;
- Isaac Regional Council;
- Barada Barna People;
- Office of the Coordinator-General;
- DES;
- DoR;
- Commonwealth DAWE;
- overlapping tenure holders;
- WAV service providers; and
- infrastructure service providers.

The frequency and type of communication will vary and will involve a variety of potential consultation tools and approaches including:

- face-to-face meetings;
- roadshows;
- information sessions;
- newsletters and factsheets;
- emails;
- media releases;
- advertising;
- Project website;
- community information sessions;
- digital communications campaigns; and
- qualitative and quantitative research.

Consultation and engagement have commenced, with an initial focus on State Government regulatory, consent and coordination authorities, local landowners, the Barada Barna People, neighbouring mine owners and operators and relevant infrastructure and service providers.

The stakeholder engagement effort will intensify over the coming months to include a broader cross-section of groups and individuals.

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12 GLOSSARY, ACRONYMS AND ABBREVIATIONS

µm	micrometres
µg/m^3	micrograms per cubic metre
ACH Act	*Aboriginal Cultural Heritage Act 2003*
ACT	Australian Capital Territory
AHD	Australian Height Datum
ALA	Atlas of Living Australia
Arrow	Arrow Energy Holdings Pty Ltd
ATP	Authority to Prospect
AUD	Australian dollar
Aurizon	Aurizon Holdings Limited
BHP	BHP Group Limited
BMA	BM Alliance Coal Operations Pty Ltd
CHMA	Cultural Heritage Management Agreement
CHMP	Cultural Heritage Management Plan
CHPP	coal handling and preparation plant
CQCA	Central Queensland Coal Associates Joint Venture
CQCA Act	*Central Queensland Coal Associates Agreement Act 1968*
CSG	coal seam gas
DAWE	Commonwealth Department of Agriculture, Water and the Environment
DES	Department of Environment and Science
DoR	Department of Resources
DRDMW	Department of Regional Development, Manufacturing and Water
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning
DTMR	Department of Transport and Main Roads
EA	Environmental Authority
EIS	Environmental Impact Statement
EO Act	*Environmental Offsets Act 2014*
EP	equivalent person
EP Act	*Environmental Protection Act 1994*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPP (Air)	*Environmental Protection (Air) Policy 2019*
EPP (Water and Wetland Biodiversity)	*Environmental Protection (Water and Wetland Biodiversity) Policy 2019*
ERA	Environmentally Relevant Activity
ESA	Environmentally Sensitive Area
EVNT	endangered, vulnerable or near threatened
FIFO	fly-in-fly-out
FTE	full-time equivalent
GDE	groundwater dependent ecosystem
GMA	Groundwater Management Area
ha	hectares
IAS	Initial Advice Statement
IESC	Independent Expert Scientific Committee
ISO	International Standards Organisation

km	kilometres
kV	kilovolt
LGA	Local Government Area
m	metres
M	million
MERCP Act	*Mineral and Energy Resources (Common Provisions) Act 2014*
MIA	mine infrastructure area
Mitsubishi Development	Mitsubishi Development Pty Ltd
ML	Mining Lease
MNES	Matters of National Environmental Significance
MR Act	*Mineral Resources Act 1989*
MSES	Matters of State Environmental Significance
Mt	million tonnes
Mtpa	million tonnes per annum
NC Act	*Nature Conservation Act 1992*
NC Animals Regulation	*Nature Conservation (Animals) Regulation 2020*
NSW	New South Wales
PAA	Priority Agricultural Area
PL	Petroleum Lease
PM	particulate matter
$PM_{2.5}$	particulate matter particles 2.5 micrometres or less in diameter
PM_{10}	particulate matter particles 10 micrometres or less in diameter
PRC Plan	Progressive Rehabilitation and Closure Plan
PRCP Schedule	Progressive Rehabilitation and Closure Schedule
RE	Regional Ecosystem
ROM	run-of-mine
RPI Act	*Regional Planning Interests Act 2014*
SCA	Strategic Cropping Area
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SIA	Social Impact Assessment
SSRC Act	*Strong and Sustainable Resource Communities Act 2017*
SWER	Single Line Earth Return
t	tonnes
the Project	Peak Downs Mine Continuation Project
TEOM	tapered element oscillating microbalance
TSP	total suspended particulate
Water Act	*Water Act 2000*
WAV	workforce accommodation village

APPENDIX A

EPBC Act Protected Matters Search

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Mar-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	22
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	24
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area	In feature area
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus			
Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos			
Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta			
Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Grantiella picta](#)			
Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
[Neochmia ruficauda ruficauda](#)			
Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
[Poephila cincta cincta](#)			
Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area	In feature area
[Rostratula australis](#)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
[Dasyurus hallucatus](#)			
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
[Macroderma gigas](#)			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
[Nyctophilus corbeni](#)			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
[Petauroides volans](#)			
Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)](#)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
PLANT			
[Dichanthium queenslandicum](#)			
King Blue-grass [5481]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Eucalyptus raveretiana](#) Black Ironbox [16344]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Samadera bidwillii](#) Quassia [29708]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
[Denisonia maculata](#) Ornamental Snake [1193]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Egernia rugosa](#) Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
[Elseya albagula](#) Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
[Furina dunmalli](#) Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
[Lerista allanae](#) Allan's Lerista, Retro Slider [1378]	Endangered	Species or species habitat may occur within area	In feature area
[Rheodytes leukops](#) Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area	In feature area
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Anseranas semipalmata](#) Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
7 North Dam Extension Project - Peak Downs Mine	2012/6260	Controlled Action	Completed	In buffer area only
Arrow Bowen Pipeline (CSG), QLD	2012/6459	Controlled Action	Post-Approval	In feature area
Bowen Gas Project	2012/6377	Controlled Action	Post-Approval	In feature area
Caval Ridge Open Cut Coal Mine Project	2008/4417	Controlled Action	Post-Approval	In feature area
Eagle Downs Coal Mine Central Queensland	2008/3945	Controlled Action	Post-Approval	In feature area
install & operate gas pipeline	2005/2059	Controlled Action	Post-Approval	In feature area
Lake Vermont Meadowbrook Coal Mine Project, Qld	2019/8485	Controlled Action	Assessment Approach	In buffer area only
Moranbah South Project Coal Mine, QLD	2012/6337	Controlled Action	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
New Saraji Coal Mine Project	2007/3845	Controlled Action	Completed	In feature area
Olive Downs Project Mine Site and Access Road	2017/7867	Controlled Action	Post-Approval	In buffer area only
Olive Downs Project Water Pipeline	2017/7868	Controlled Action	Post-Approval	In feature area
Open Cut Coal Mining	2004/1770	Controlled Action	Post-Approval	In feature area
Relocation of approximately 16km of Dysart Road and associated service infrastructure	2013/6868	Controlled Action	Post-Approval	In feature area
Saraji East Mining Lease Project, Qld	2016/7791	Controlled Action	Assessment Approach	In buffer area only
Vulcan Complex Project	2020/8676	Controlled Action	Post-Approval	In feature area
Winchester South Project Electricity Transmission Line, near Moranbah, Qld	2019/8458	Controlled Action	Assessment Approach	In feature area
Winchester South Project Mine Site and Access Road, near Moranbah, Qld	2019/8460	Controlled Action	Assessment Approach	In feature area
Winchester South Project Water Pipeline, near Moranbah, Qld	2019/8459	Controlled Action	Assessment Approach	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Integrated Isaac Plains Project	2006/3043	Not Controlled Action	Completed	In buffer area only
Olive Downs Project	2005/2377	Not Controlled Action	Completed	In buffer area only
Vulcan Bulk Sample Project	2019/8504	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Moranbah South Feasibility Seismic Survey	2010/5497	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Expansion of open cut coal mine and diversion of creeks in existing mine operati	2006/2845	Referral Decision	Completed	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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