

EIS assessment report

Saraji East Mining Lease Project

Prepared by: Environmental Impact Assessment,
Department of the Environment, Tourism
Science and Innovation.

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November 2025

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Executive summary

This report evaluates the environmental impact statement for the Saraji East Mining Lease Project (the project) under the *Environmental Protection Act 1994*. It includes assessment of the potential impacts on the controlling provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The project, proposed by BM Alliance Coal Operations Pty Ltd, involves the construction, operation, decommissioning and rehabilitation of an underground coal mine and supporting infrastructure. The project is proposed to be located adjacent to the existing Saraji Mine, 30 kilometres north of Dysart on the traditional lands of Barada Barna People. The project would involve the extraction of up to 11 million tonnes per year of metallurgical product coal for the export market over a 20-year life.

Key environmental considerations included:

- risk of land and water contamination
- water resource losses
- significant impact to matters of national and state environmental significance from subsidence and cracking
- economic benefits.

As the project is located on the same mining leases (ML1775 and ML70142) as the existing Saraji Mine, the environmental authority for the project and the Saraji Mine would need to be amalgamated. It is important to note that this environmental impact statement process has only assessed the impacts of the Saraji East Mining Lease project and does not include the existing Saraji Mine. Accordingly, this assessment report, including the recommended conditions, applies solely to the Saraji East Mining Lease project.

The terms of reference for the project were established prior to the legislative requirement for a progressive rehabilitation and closure plan to be included as part of the EIS. Following the completion of the environmental impact assessment process, the proponent will need to submit a proposed progressive rehabilitation and closure plan for the project and amend the Saraji Mine progressive rehabilitation and closure plan that incorporates the rehabilitation information provided in the EIS.

An unresolved issue remains regarding the calculation of the offset area, which the proponent must resolve with the Commonwealth following the conclusion of this EIS process.

The environmental impact statement assessment process supports the key approvals required for the project. These include an environmental authority and progressive rehabilitation and closure plan schedule, a social impact assessment under *Strong and Sustainable Resource Communities 2017* and a decision under the *Environment Protection and Biodiversity Conservation Act 1999*.

The project is considered suitable to proceed, subject to all of the following:

- recommendations in this report being fully implemented including imposing conditions on the necessary approvals
- resolution of outstanding matters on key approvals
- the proponent progressing the project and honouring commitments as stated in the environmental impact statement

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1 Introduction

This environmental impact statement (EIS) assessment report (assessment report) evaluates the EIS pursuant to Chapter 3 of the *Environmental Protection Act 1994* (EP Act) for the Saraji East Mining Lease project (the project) proposed by BM Alliance (BMA) Coal Operations Pty Ltd (the proponent). The Department of the Environment, Tourism, Science and Innovation (DETSI), as the administering authority of the EP Act, coordinated the EIS process. This assessment report has been prepared pursuant to sections (ss.) 57 to 59 of the EP Act.

The assessment report applies the version of the EP Act dated 6 December 2017, and the Environmental Protection Regulation 2008 (EP Regulation) version dated 23 September 2016. These were in force on 24 January 2017 when the proponent submitted the draft terms of reference (TOR) for the EIS, which I consider the relevant date for the application of s. 20 of the *Acts Interpretation Act 1954*.

The project was declared a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 13 November 2016 (EPBC 2016/7791). The controlling provisions are listed in [section 4.1](#) of this assessment report and addressed in detail in [section 6.17](#). The EP Act EIS process assessed the potential impacts of the project on the controlling provisions in accordance with the Bilateral Agreement between the Australian and Queensland Governments under the EPBC Act.

The objective of this assessment report is to:

- address the adequacy of the EIS in addressing the TOR
- make recommendations about the suitability of the project
- recommend any conditions for any approval required for the project
- address the matters prescribed in the EP Regulation.

This assessment report summarises key matters identified through the EIS process and discusses in detail issues that remain unresolved or require specific conditions for the project to proceed. Based on the information presented in the EIS, relevant legislation and the regulatory requirements under the EP Act, I consider that the project is suitable to proceed.

The giving of this assessment report to the proponent and the Australian Government concludes the EIS process under the EP Act. This assessment report will inform the Australian Government Minister for the Environment and Water's decision about the approval of the proposed action and any conditions that should be applied under Part 9 of the EPBC Act.

2 Project description

The project is an extension of the existing Saraji Mine (SRM). It is located within the Isaac Regional Council (IRC) local government area (LGA), approximately 30 kilometres (km) north of Dysart and approximately 167km south-west of Mackay in the Bowen Basin region of central Queensland. The site is situated in a rural area primarily used for livestock grazing, surrounded by operational and proposed resource projects including Saraji Mine (SRM), Peak Downs Mine, Lake Vermont Coal Mine and the Lake Vermont Meadowbrook project.

The project proposes a single-seam underground mine on mining lease application (MLA) 70383 commencing from within the existing SRM mining lease (ML) 1775. It proposes to mine up to 11

million tonnes per annum (Mtpa) of run-of-mine (ROM) coal to produce up to 8Mtpa of metallurgical (coking and pulverised coal injection) product coal. This equates to approximately 110 million tonnes (Mt) for the export market over a 20-year mine life.

For the purpose of this assessment report, the project site as defined in the EIS, consists of ML1775, ML70142, ML1782, MLA70383 and MLA70459 and covers 11,427 hectares (ha) of land with a direct disturbance footprint of 3,348ha (Figure 1). The project infrastructure would be located on previously disturbed areas wherever possible. As ML1775 overlaps between the existing SRM and the project, DETSI recommends that the two sites be amalgamated under one environmental authority (EA).

In Appendix O-1 (Summary of commitments), the proponent has committed to applying for an EA amendment, at which time the proponent will be required to amalgamate the two sites based on the agreed working draft EA (*Amalgamated EA Saraji and Saraji East_20250827-DRAFT EA EPML00862313-BMA+DETSI_V3*) DETSI sent to the proponent on 19 September 2025.

The project would maximise use of existing SRM infrastructure on ML70142 and ML1775, including:

- underground mine entry/access via the existing open-cut pit and highwall
- use of the existing coal handling and processing plant (CHPP) for processing when ROM exceeds 7Mtpa
- existing spoil dumps to distribute and dispose of dewatered tailings and rejects from the project CHPP
- integrated power supply network
- existing haul roads and trucks for the transportation of ROM coal
- transport of product coal using the existing Goonyella rail system which currently runs along the western boundary of the existing SRM on ML70142.

The project proposes to develop new surface infrastructure including:

- CHPP to handle up to 7Mtpa, with conveyor system and supporting infrastructure on ML70142
- mine infrastructure area (MIA) within previously disturbed areas on ML1775
- water management system (WMS) including raw water dam (RWD) and process water dam (PWD)
- water pipeline connection surface infrastructure on ML70142 to MLA70383
- internal access road within the proposed transport and infrastructure corridor to link the workers' accommodation village to Lake Vermont Road
- rail spur, balloon loop and signalling system on the main rail line
- relocation of the existing 132 kilovolt (kV) Powerlink powerline to the eastern boundary of MLA70383 and northern boundary of MLA70459
- relocation of existing 66kV powerlines to connect to Dysart substation
- accommodation village to support the construction stage, located on MLA70383.

A detailed description of the project is provided in Chapter 3 of the EIS.

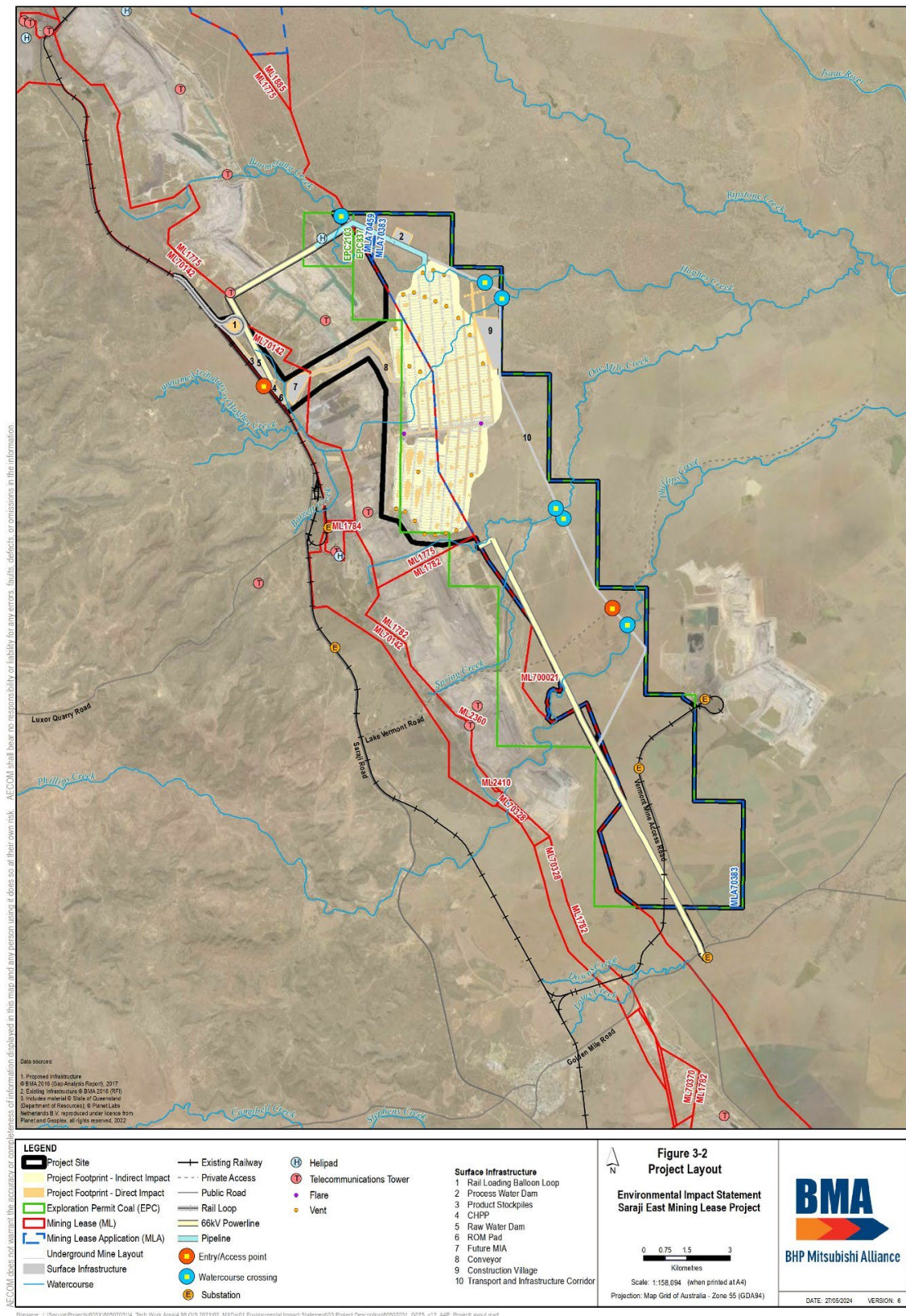


Figure 1 Saraji East Mining Lease project. Source: EIS Chapter 3 (Project Description), Figure 3-2

2.1 Places affected by the project

The project is located within the 'rural zone' under the *Isaac Regional Planning Scheme 2021* (IRC 2021) and 'Regional Landscape and Rural Production Area' under the *Mackay, Isaac and Whitsunday Regional Plan* (DLGP 2012).

Proposed roadworks to connect the internal mine access road to Lake Vermont Road would intersect with roads managed by the Department of Transport and Main Roads (TMR) and IRC.

A secondary stock route (405ISAA) is in the southern part of the project site. Extension of a powerline for the project would intersect this stock route. If required, the proponent would liaise with IRC and the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development (DNRMMRRD) to develop management and mitigation strategies for the temporary closure of the stock route during construction.

The project is outside of zones mapped as priority living areas, priority agricultural areas, priority development areas and strategic environmental areas. However, the project overlaps with a strategic cropping area (SCA) under the *Regional Planning Interests Act 2014* (RPI Act). This is discussed further in [section 6.4](#) of this assessment report.

The EIS stated that the Aboriginal and Torres Strait Islander cultural heritage database search returned seven Cultural Heritage Management Plans (CHMPs) relevant to the project, including CLH012020, an agreement between BMA and Barada Barna People, which covers the entirety of the project site.

The project is within the Barada Barna People (QC2012/007) Native Title application area, and the Barada Barna People are recognised as the Native Title holders of the broader project region (Figure 2).

No protected areas would be affected by the project. The closest national park is the Peak Range National Park, located approximately 44km west of the project site.

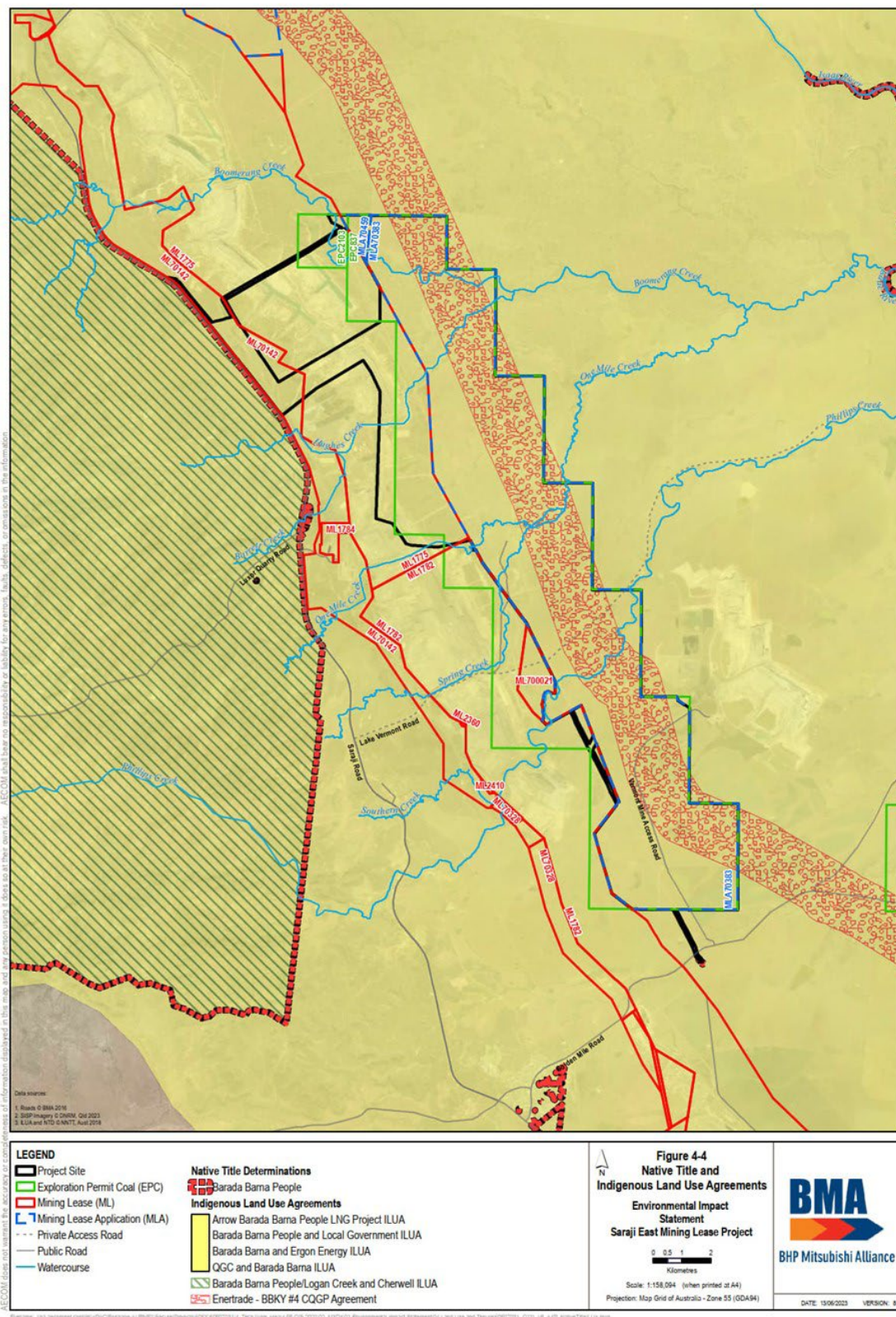


Figure 2 Indigenous land use agreements that overlap the project site. Source: EIS Chapter 4 (Land Use and Tenure), Figure 4-4

3 Statutory requirements

This section of the assessment report outlines the statutory requirements that apply to the project and its EIS process, including:

- the approvals required for the project to operate
- the matters the EIS needed to adequately address
- the considerations I was required to take into account when preparing this assessment report
- the content requirements for this EIS assessment report.

3.1 Project approvals

The full list of approvals that would be required for the project are listed in EIS [section 7](#) of this assessment report (Approvals Framework).

Key approvals are summarised in Table 1. Recommended conditions for some of these approvals are discussed in [section 7](#), and included in Appendices of this assessment report.

Table 1 Key approvals required for the Saraji East Mining Lease Project

Approval	Legislation (Administering Authority)	Detail
Environmental authority (EA) and PRCP granted by Queensland Government		
EA	Chapter 5, EP Act, DETSI	The proponent applied for a new site-specific EA. Since the MLs for the project overlap with the existing SRM, the new EA will need to be amalgamated with the SRM's existing EA to enable the proponent to operate under a single, consolidated EA. The EA for the project would cover the following environmentally relevant activities (ERAs) that are directly associated with, or facilitate or support, the mining activities, and which would otherwise require approval under the EP Act as 'prescribed ERAs', listed under schedule 2 of the EP Regulation: • ERA 8(3) – Chemical storage; storing 500m³ or more of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3. • ERA 31(2)(b) – Mineral processing of mineral products other than coke - more than 100,000t per year. • ERA 60(1)(b) – Waste disposal; operating a facility for disposing more than 2000t but not more than 5000t per year of limited regulated waste and general waste.

		- ERA 63(1)(b) – Sewage treatment or operating a sewage pumping station with a total design capacity of more than 40 KL in an hour (100 to 1,500 equivalent persons with treated effluent discharged through an irrigation scheme). The following notifiable activities prescribed under schedule 3 of the EP Act would also be authorised under the EA as part of the project: - Notifiable Activity 7 – Chemical storage - Notifiable Activity 29 – Petroleum product or oil storage - Notifiable Activity 32 – Railway yards - Notifiable Activity 37 – Waste storage, treatment or disposal. Under the <i>Environmental Offsets Act 2014</i> (Qld) an offset condition would be required for significant residual impacts to matters of state environmental significance (MSES) that are not also matters of national environmental significance (MNES). The EA would also require Estimated Rehabilitation Costs to be lodged prior to commencing any activities authorised under an EA (under the <i>Mineral and Energy Resources (Financial Provisioning) Act 2018</i>).
Progressive Rehabilitation and Closure Plan (PRC plan)	EP Act (DETSI)	The proponent must submit a proposed PRC plan. The Progressive Rehabilitation and Closure Plan Schedule (PRCP schedule) component needs to be approved by DETSI.
Other approvals granted by Queensland Government or local government		
Mining lease (ML)	<i>Mineral Resources Act 1989</i> (MR Act) (DNRMMRRD)	The proponent has submitted an application for a Mining Lease to the Mining Registrar for consideration. The project would require the following forms of tenure under the MR Act: - MLA70383 for underground mining, infrastructure and transport corridors – specifically pipelines, powerlines, access roads, rail crossing, water storages and workers accommodation village - MLA70459 for infrastructure and transport corridor, specifically pipelines.
Cultural heritage management plan (CHMP)	<i>Aboriginal Cultural Heritage Act 2003</i> (Department of Women, Aboriginal and Torres Strait)	There are currently four CHMPs that apply to the project site. CLH000351 Barada Barna Yetimarla #4 (sponsored by BMA Alliance Coal Operations Pty Ltd, dated 9/01/2006)

	Islander Partnerships, Multiculturalism	- CLH000520 Barada Barna Kabalbara Yetimarla people #4 QC01/25 Barada Barna Kabalbara Yetimarla people (sponsored by BMA Billiton Mitsubishi Alliance, dated 5/03/2007) - CLH012021 Barada Barna People (sponsored by BM Alliance Coal Pty Ltd, dated 8/10/2012) - CLH012020 Barada Barna People (sponsored by BM Alliance Coal Pty Ltd, dated 28/10/2011) - Only CLH012020 applies to the whole of the project footprint, overlapping CLH000351, CLH000520, and CLH012021 in the northern project site. While these CHMPs remain active and on the DATSIP register, project works must comply with the requirements of each.
Social impact assessment	<i>Strong and Sustainable Resource Communities Act 2017 (SSRC Act) Coordinator-General)</i>	Required for social impacts for resource projects assessed by an EIS process
Regional Interests Development Approval (RIDA)	<i>Regional Planning Interests Act 2014</i> (Department of State Development, Infrastructure and Planning (DSDIP))	The proponent has submitted a RIDA assessment for proposed impacts to a strategic cropping area.
Development approval	<i>Planning Act 2016</i> (State Assessment and Referral Agency (SARA), IRC)	Required for off-lease infrastructure that triggers a material change of use and/ or operational work, waterway barrier works and clearing of native vegetation
Clearing permit	<i>Nature Conservation Act 1992 (DETSI)</i>	The project would require: - a submission of Species Management Programs - a clearing permit.
Water licence—for dewatering of groundwater from the mine.	<i>Water Act 2000</i> Department of Local Government, Water and Volunteers (DLGWV) Water Plan (Fitzroy Basin) 2011	Required for Water Licences and Riverine Protection permits.
Approvals granted by Australian Government		
Approval to undertake an action that may impact on MNES:	Commonwealth EPBC Act (DCCEEW)	A copy of this assessment report will be given to the Australian Government Minister for the Environment and Water to assist with making a decision about the approval of the project and

- Listed threatened species and communities (sections 18 and 18A) - A water resource, in relation to coal seam gas development and large coal mining development (section 24D and 24E)		any conditions that should apply under Part 9 of the EPBC Act.
Offset requirements for MNES and MSES section 2.1	Commonwealth EPBC Act; Environmental Offsets Policy 2012 (DCCEEW): Queensland <i>Environmental Offsets Act 2014</i> , Environmental Offsets Regulation 2014, Queensland Environmental Offsets Policy (DETSI)	Offsets would be required under State and Commonwealth legislation. Under the <i>Environmental Offsets Act 2014</i> an offset condition cannot be required by the state if the Australian Government has imposed a condition for the same, or substantially the same, impact on the same matter OR if the Australian Government has decided an offset is not required. Consequently, any conditions for offsets that overlap both jurisdictions would be placed on the Australian Government's approval.

3.2 Criteria considered

Section 58 of the EP Act lists the criteria that I must consider when preparing the EIS assessment report, including:

- (a) the TOR for the EIS
- (b) the submitted EIS
- (c) all properly made submissions and any submissions accepted by the chief executive
- (d) the standard criteria (see Schedule 4 of the EP Act)
- (e) another matter prescribed under a regulation.

For criterion (a), the TOR were issued to the proponent on 2 June 2017. The documents considered for criteria (b) and (c) are described below. For criterion (e), this assessment report has considered whether the EIS adequately addressed the matters prescribed in Schedule 1 of the EP Regulation.

I considered the above criteria when preparing this assessment report and forming my recommendations.

3.2.1 The submitted EIS

The submitted EIS was considered when preparing this assessment report and comprised the following documents:

- the original EIS (EIS version 1) received by DETSI on 8 October 2019 (EIS version 1)
- the amended EIS received by DETSI on 15 December 2020 (EIS version 2)
- the amended EIS received by DETSI on 29 March 2021 (EIS version 3) that was made available for public submissions from 24 May 2021 to 2 July 2021
- the amended EIS (EIS version 4) and Response to Public Submissions (version 1) received by DETSI on 14 November 2023
- the amended EIS (EIS version 5) and Response to Public Submissions (version 2) received by DETSI on 18 December 2024.
- the amended EIS (EIS version 6) and Response to Public Submissions (version 3) received by DETSI on 30 August 2025.

The submitted EIS will hereafter be referred to as the EIS.

3.2.2 Submissions on the EIS

The EIS was made available for public submission from 24 May 2021 to 2 July 2021. DETSI received 30 submissions on the EIS within the submission period. All submissions were accepted under s. 55 of the EP Act and considered when preparing this assessment report and forming my recommendations.

Submissions were received from three members of the public and the following stakeholders (government agency names reflect those at the time of submission):

- Department of Agriculture and Fisheries
- Department of Children Youth Justice and Multicultural Affairs
- Department of Climate Change, Energy, the Environment, and Water
- Department of Communities, Housing and Digital Economy
- Department of Education
- Department of Energy and Public Works
- Department of Regional Development, Manufacturing and Water
- Department of Resources
- Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
- Department of Small Business and Training
- Department of State Development, Infrastructure, Local Government and Planning
- Department of Tourism Innovation and Sport
- Department of Transport and Main Roads
- Mackay Hospital and Health Service
- Office of Industrial Relations
- Queensland Ambulance Service
- Queensland Fire and Emergency Services
- Queensland Police Service
- Isaac Regional Council
- Mackay Regional Council
- Energy Queensland (Ergon Town Planning)
- Powerlink
- Sunwater

- Capricorn Conservation Council
- Environment Council of Central Queensland
- Lock the Gate Alliance
- Mackay Conservation Group

DETSI also provided its own submission on the EIS to the proponent.

Out of the 30 submissions received, nine provided 'no comment'. The key issues raised in the remaining submissions related to the following matters:

- greenhouse gas (GHG) emissions and human rights
- social impacts and consultation
- subsidence
- cumulative impacts
- water quality
- groundwater modelling
- groundwater dependent ecosystems (GDEs).

Advice was sought and received from the Independent Expert Scientific Committee on Unconventional Gas Development and Large Coal Mining Development (IESC) on the content and conclusions of the EIS in relation to:

- characterisation of, and impacts to, surface and groundwater resources and assets (including cumulative impacts from other mines in the area)
- adequacy of the proposed monitoring, mitigation and management measures.

The IESC advice ([IESC 2021-122](#)) was provided to DETSI and published on the [IESC website](#) on 30 June 2021.

Following the public submission period, additional correspondence with government agencies was undertaken to clarify critical matters raised in the proponent's response to public submissions. This correspondence was considered in the preparation of this assessment report and the formation of my recommendations.

While this assessment report does not constitute an original decision under the EP Act—and is therefore not subject to appeal and review rights—submitters of properly made submissions under the EIS process have express rights when any future EA is issued. At that time, all successful submitters will be advised of the final conditions of approval (if granted) and provided with details of the appeal process.

3.3 Required content

Section 59 of the EP Act outlines the required content of the assessment report. The report must:

- address the adequacy of the EIS in addressing the TOR (this is addressed in [section 6](#) of this assessment report)
- address the adequacy of any environmental management plan (this is addressed in [section 6](#) of this assessment report)
- make recommendations about the suitability of the project (this is addressed in [section 8](#) of this assessment report)
- recommend any conditions on which any approval required for the project may be given

- (see [section 7](#) of this assessment report)
- (e) contain another matter prescribed under a regulation.

Regarding item (e), s. 9 of the EP Regulation prescribes the matters that this EIS assessment report must contain. These are:

- (a) a description of the following
 - (i) the project
 - (ii) the places affected by the project
 - (iii) any MNES likely to be affected by the project
- (b) a summary of the project's relevant impacts
- (c) a summary of feasible mitigation measures or changes to the project or procedures to prevent or minimise the project's relevant impacts, proposed by the proponent or suggested in a relevant submission
- (d) to the extent practicable, a summary of feasible alternatives to the project identified in the assessment process and the likely impact of the alternatives on MNES
- (e) to the extent practicable, a recommendation for any conditions of approval for the project that may be imposed to address impacts identified in the assessment process on MNES.

[Section 6.1](#) of this assessment report provides a description of the project and the places affected by it. [Section 6.2](#) summarises the project's relevant impacts, as well as the matters outlined above in items (c) and (d). [Section 6.17](#) specifically addresses the required content regarding MNES likely to be affected by the project. [Appendix C](#) recommends, to the extent practicable, conditions of approval that may be imposed to address impacts on MNES identified in the assessment process.

4 The EIS Process

The proponent applied to DETSI for a site-specific environmental authority. DETSI decided that the proponent must prepare an EIS for the project using the process in Chapter 3 of the EP Act.

4.1 EPBC Act controlling provisions

As noted in Introduction of this assessment report, the Australian Government Minister for the Environment and Water determined the project is a controlled action under section 75 of the EPBC Act (reference number EPBC 2016/7791). The controlling provisions for the project are:

- Listed threatened species and communities (sections 18 and 18A)
- A water resource, in relation to coal seam gas development and large coal mining development (section 24D and 24E).

The EIS process was accredited for assessing impacts on the controlling provisions under the Bilateral Agreement between the Australian Government and the State of Queensland.

[Section 6](#) of this assessment report assesses whether the EIS adequately addressed the statutory content requirements of s. 9 of the EP Regulation.

A copy of this assessment report will be provided to the Australian Government Minister for the Environment and Water to assist in making a decision regarding the approval of the project and any conditions that should apply under Part 9 of the EPBC Act.

4.2 EIS process timeline

Table 2 outlines the stages, timing and actions undertaken in the EIS process for the project.

Table 2 Timeline of key steps undertaken during the Saraji East Mining Lease Project EIS process

Step in the EIS process	Section of EP Act	Responsibility	Completed
Proponent submitted an application for a new site-specific EA for coal mining to DETSI	ss. 124 & 125	Proponent	24 May 2013
DETSI issued a Notice of Information Request requiring an EIS.	s. 140	DETSI	25 June 2013
The Australian Government declared the project to be a controlled action under the EPBC Act.	N/A	Australian Government	18 November 2016
EIS process commenced when the proponent submitted a draft TOR for the project, accompanied by the fee prescribed under the EP Regulation.	ss. 41(1) & 41(2)	Proponent	24 January 2017
DETSI gave the TOR notice to the proponent, which set the comment period at 30 business days.	ss. 42(1) & 42(2)	DETSI	13 February 2017
DETSI published the TOR notice on its website on 17 February 2017 and in The Australian and the Daily Mercury (Mackay) on 18 February 2017, to meet statutory publishing requirements.	s. 43(1)	DETSI	17 February 2017
The draft TOR comment period started on 20 February 2017 and ended on 31 March 2017.	s. 42(3)	DETSI	31 March 2017
DETSI gave the proponent 20 sets of comments received during the comment period, including comments from DETSI, and five sets of comments received after the comment period including comments from the Australian Government.	s. 44	DETSI	7 April 2017
The proponent responded to the comments on the draft TOR.	s. 45 (s. 11 of the EP Regulation)	Proponent	11 May 2017
DETSI considered the proponent's response, produced the TOR, and gave a copy of the TOR to the proponent on 2 June 2017. The TOR notice was published in The Weekend Australian and the Daily Mercury (Mackay) on 3 June 2017.	s. 46	DETSI	2 June 2017
On 17 April 2019, the proponent requested a period longer than 2 years in which to submit the EIS to DETSI. The delegate of the chief executive decided to allow a longer period until 2 June 2020.	s. 47(1)(b)	Proponent and DETSI	17 April 2019
The proponent submitted the EIS to DETSI.	s. 47	Proponent	8 October 2019
DETSI advised the proponent that there were matters in the TOR that the EIS had not adequately addressed. On 4 November 2019, in order to give the proponent time to revise the EIS, the proponent agreed to a longer period for deciding whether the EIS was suitable to proceed. The new date for the decision was set at 31 March 2020.	s. 49(2)	DETSI and proponent	4 November 2019
On 12 March 2020, the proponent requested an extension to the decision date for whether the EIS was	s. 49(2)	DETSI and proponent	17 March 2020

suitable to proceed. On 17 March DETSI agreed to the request and the new date for the decision was set at 31 October 2020.			
On 3 September 2020, the proponent requested an extension to the decision date for whether the EIS was suitable to proceed. On 14 September DETSI agreed to the request and the new date for the decision was set at 30 April 2021.	s. 49(2)	DETSI and proponent	14 September 2020
The proponent submitted a revised EIS on 15 December 2020 and then a further revised EIS on 29 March 2021. On 30 April 2021, DETSI decided that the EIS was suitable to proceed.	s. 49(2)	DETSI	30 April 2021
DETSI gave the proponent a notice of decision that the EIS was suitable to proceed to public notification, and that the submission period would be 30 business days.	s. 49(5)	DETSI	30 April 2021
The proponent gave a copy of the EIS notice to interested and affected persons.	s. 51(2)(a)	Proponent	19 May 2021
The proponent published the EIS notice in the Daily Mercury and The Australian on 22 May 2021. DETSI published the notice on DETSI's website.	s. 51(2)(b), (s. 8 of EP Regulation)	Proponent	22 May 2021
The proponent gave the department a declaration of compliance stating that a copy of the EIS notice had been given to interested and affected persons, and that the EIS notice had been published in appropriate newspapers.	s. 53	Proponent	27 May 2021
The EIS submission period started on 24 May 2021 and ended on 2 July 2021.	s. 52(2)	DETSI	2 July 2021
DETSI forwarded to the proponent 30 submissions about the EIS that were received and accepted during the submission period. DETSI also provided a submission on the EIS to the proponent.	ss. 55 & 56(1)	DETSI	16 July 2021
On the 13 August 2021, the proponent and DETSI agreed a longer period for submitting a response to submissions until 31 January 2024.	ss. 56(2) & 56(3)	Proponent	13 August 2021
On 15 November 2023, the proponent submitted a response to submissions and the amended EIS. DETSI gave a copy of the documents to those government agencies and the public who provided a submission on the EIS.	56(2)	Proponent	15 November 2023
On 21 November 2023, 27 February 2024 and 30 May 2024, DETSI advised the proponent that there were matters the EIS had not adequately addressed. The proponent requested extensions to the periods for making the s. 56A decision, to provide the outstanding information. DETSI agreed to all requests for extensions, and the last date for making the s. 56A decision was agreed to be 27 September 2024.	ss. 56A(2) & 56A(3)	Proponent	30 August 2024
On 30 August 2024, the proponent provided the response to submissions and amended EIS for further review.	ss. 56A(2) & 56A(3)	Proponent	30 August 2024
On 27 September 2024, DETSI advised the proponent that there were matters the EIS had not adequately addressed, including the comments provided by DCCEW.	ss. 56A(2) & 56A(3)	Proponent	

The proponent requested a further extension to the period for making the s. 56A decision. DETSI agreed to extend the decision date until 22 November 2024 and requested that the proponent provide their amended EIS and the response to submission by 25 October.			
On 24 October 2024, the proponent requested further extensions to the period for making the s. 56A decision. DETSI agreed to extend the decision date until 3 February 2025 and requested that the proponent provide their amended EIS and the response to submission.	ss. 56A(2) & 56A(3)	Proponent	
On 19 December 2024, the proponent submitted their response to submissions and amended EIS or further review.	ss. 56A(2) & 56A(3)	Proponent	19 December 2024
On 31 January 2025, DETSI advised the proponent that there were matters the EIS had not adequately addressed, including the comments provided by DCCEEW. On 3 February 2025, the proponent requested a further extension to the s.56A decision. DETSI agreed to extend the decision date until 29 May 2025.	ss. 56A(2) & 56A(3)	Proponent	
On 22 April 2025 the proponent requested further extension to the s.56A decision. DETSI agreed to extend the decision date until 1 August 2025.	ss. 56A(2) & 56A(3)	Proponent	
On 4 July 2025 the proponent requested further extension for the s.56A decision. DETSI agreed to extend the decision date until 26 September 2025.	ss. 56A(2) & 56A(3)	Proponent	
The proponent revised their response to submissions and submitted an amended EIS to DETSI on 5 September 2025. DETSI gave the documents to relevant government agencies for their review and comment.	ss. 56(2)	Proponent	29 August 2025
DETSI considered the EIS and the proponent's response to submissions and decided to allow the EIS to proceed under division 5 (EIS assessment report) and division 6 (completion of process).	s. 56A(2) and 56A(4)	DETSI	26 September 2025
DETSI issued to the proponent a notice of the decision to proceed.	s. 56A(5)	DETSI	13 October 2025
DETSI prepared the assessment report.	ss. 57 to 59	DETSI	24 November 2025
DETSI completed the assessment report and gave a copy to the Australian Government Minister for the Environment and Water.	s. 10 of EP Regulation	DETSI	24 November 2025
DETSI completed the assessment report and gave a copy to the proponent, completing the EIS process.	s. 60	DETSI	24 November 2025

5 Consultation program

5.1 Public consultation

In addition to the statutory requirements for advertising of the TOR and EIS notices and the mailing of the notices to interested and affected parties, the proponent undertook community consultation with members of the public and other stakeholders during the public submission

period on the EIS. The submissions received in response to the public submission period are listed in [section 3.2](#) of this assessment report.

5.2 Advisory body

DETSI invited the following organisations to assist in the development of the TOR and assessment of the EIS by participating as members of the advisory body for the project (agency names reflect those at the time of EIS submission):

- Aurizon Holdings Limited
- Capricornia Catchments Inc.
- Capricorn Conservation Council
- Construction, Forestry, Mining & Energy Union
- Department of Agriculture and Fisheries
- Department of Child Safety, Seniors and Disability Services
- Department of Climate Change, Energy, the Environment and Water
- Department of Education
- Department of Employment, Small Business and Training
- Department of Energy and Climate
- Department of Housing, Local Government, Planning and Public Works
- Department of Regional Development, Manufacturing and Water
- Department of Resources
- Department of State Development and Infrastructure
- Department of Tourism and Sport
- Department of Transport and Main Roads
- Department of Treaty, Aboriginal and Torres Strait Islander Partnerships, Communities and the Arts
- Energy Queensland/Energex
- Ergon Energy
- Fitzroy Basin Association
- Isaac Regional Council
- Mackay Conservation Group
- Mackay Regional Council
- Powerlink Queensland
- Queensland Ambulance Service
- Queensland Farmers' Federation
- Queensland Fire and Emergency Services
- Queensland Health
- Queensland Police Service
- Queensland Treasury
- North Queensland Conservation Council
- Reef Catchments
- Road Accident Action Group Inc
- Sunwater Ltd.

5.3 Public notification

In accordance with the statutory requirements, advertisements were placed in The Australian and the Daily Mercury (Mackay) to notify the availability of the draft TOR and EIS for public comment. In addition, DETSI website displayed notices advising the availability of the draft TOR and EIS for public comment.

The draft TOR and EIS were made available at the following locations during their respective public comment and submission periods:

- DETSI website (draft TOR, Initial advice statement)
- proponent website (Initial advice statement, TOR, current EIS and previous EIS versions prior to submissions).

6 Adequacy of the EIS in addressing the TOR

I have focused on the critical environmental matters that the TOR stated the proponent must give priority to. These matters were: land, progressive rehabilitation and closure, water quality, water resources, regulated structures, flora and fauna, waste management, cultural heritage, social, economic and MNES. I consider that the EIS adequately addressed most components of the TOR.

In the following sections, I discuss the findings of the EIS, summarise the relevant impacts and outline those environmental protection commitments made in the EIS that are recommended as conditions. Matters requiring clarification or confirmation are discussed in detail. I have also included further recommended management measures and environmental protection conditions, as appropriate.

Aspects of the EIS that are considered adequate are generally not discussed in detail in this assessment report, except where they are of particular importance for assessing the project, such as requiring modification of, or addition to conditions.

6.1 Project description

The EIS provided an adequate introduction to the project, its objectives and scope. It adequately identified the necessary approvals required for the project and outlined the assessment and approval processes. The EIS also adequately described the location, components and phases of the project. An outline of the project is provided in [section 2](#) of this assessment report.

6.2 Project need and alternatives

The EIS adequately addressed the commercial need for the project. It also addressed how its operations would contribute to the local, regional, state and national economies through royalties, taxes, charges, and wages. In addition, the EIS adequately addressed how the project would help sustain employment and create opportunities for small business, regional development and investment.

6.2.1 Project alternatives

The EIS adequately addressed the lack of feasible alternatives to the location of the project, as it is dictated by the location of the resource. The objective of the project is to extend the existing SRM operation.

The EIS also adequately addressed feasible alternatives for the construction and operation of the project, including the likely impacts of the alternatives on MNES (see [section 6.17.3](#) of this assessment report). A summary of the consideration of alternatives is provided below.

6.2.1.1 Mining methods

Underground mining was selected over open-cut mining to limit surface disturbance areas, associated dust, lighting and noise impacts as well as spoil generated from the activity. Although not explicitly stated in the EIS, the depth of the resource (between about 120m – 450m below ground level) is also likely to be a driving factor.

Longwall mining was selected over bord and pillar mining because, as the coal seam depth increases, the economic feasibility of bord and pillar mining lessens. EIS Chapter 2 (Project Alternatives and Justification) explains that it is generally considered uneconomical to use the board and pillar method at depths of 200m or greater. The EIS also discusses that subsidence from longwall mining can readily be predicted as it occurs within weeks following the longwall mining. In contrast, subsidence from bord and pillar mining can occur decades after closure of operations, making surface rehabilitation difficult to manage.

6.2.1.2 Infrastructure

The project integrates with the existing SRM open-cut mine to optimise the use of existing infrastructure where possible. The access point via the existing SRM open-cut high wall ensures that mining commences in areas with low gas.

The new CHPP is also proposed to be constructed on the existing SRM lease, within an already disturbed area. Where annual production exceeds the capacity of the new CHPP, the overflow coal can be processed through the existing SRM CHPP.

The dry tailings and reject material from the project would be disposed of at the in-pit spoil dumps at the existing SRM.

6.2.1.3 Workforce accommodation

The proponent initially included an operational accommodation village within the project scope; however, this did not align with stakeholder expectations. The workers would now be accommodated at Coppabella, Dysart or Moranbah in existing BMA accommodation villages. The EIS has indicated that they would retain the proposed construction accommodation village as part of the project in case the existing accommodation capacity is exceeded in the future. The accommodation village site would be located along the eastern boundary of MLA70383 for proximity to the mine. This location would minimise disturbance to significant ecosystems and provide safe vehicle access points to existing public roads.

6.2.1.4 Not proceeding with the project

In accordance with the TOR, an assessment of the consequences of not proceeding with the project has been conducted. If the project did not proceed, the following consequences are inferred by the EIS:

- loss of economic benefit
- less local, state and nationwide job opportunities
- reduced demand and income for support industries and services suppliers
- missed opportunities to support local businesses and provide financial donations to community groups and local projects
- foregone State royalty payments and Commonwealth tax revenue.

6.2.1.5 Likely impacts of feasible alternatives on MNES

This is discussed in [section 7.4](#) of this assessment report.

6.3 Climate

The EIS adequately described how the climate could affect the potential for environmental impacts and the management of operations at the site. The EIS described long-term climate projections using CALMET numerical simulation, supplemented by data obtained from the Australian Bureau of Meteorology weather station at the Moranbah Water Treatment Plant. Flood modelling also indicated that for a 2-year average recurrence interval (ARI), flows are mostly contained within the creeks, except for the northeast end of the project site near the Hughes and Boomerang creeks confluence. The flood modelling also indicated that in the 1,000-year ARI event, mine road access would be impacted adjacent to One Mile Creek.

The project site has a warm subtropical climate with distinct wet and dry seasons. Mean annual rainfall is approximately 580mm; however, the 5th and 95th percentiles, 285mm and 957mm respectively, indicate high variability. Monthly mean rainfall values range from 9mm in September to 104mm in December.

The average maximum temperature ranges between 33°C and 34°C in summer, and the minimum temperature ranges from 9.9°C to 11.2°C in winter. The wind direction is predominantly from the east through southeast. The project is located within a bushfire prone area according to the State Planning Policy Integrated Mapping System (DHLGPP 2023).

The EIS has also adequately described the potential risks to the operation of the project due to climate change. The EIS discussed the potential increase in annual average temperature and evaporation, a decrease in annual average rainfall, and the severity of cyclone and flood impacts. The mitigation measures suggested for such risks include responsive WMS, dust control measures, and emergency response procedures for flooding. Impacts on the project from natural hazards are also discussed in [section 6.12](#) of this assessment report.

A draft decarbonisation plan provided in the EIS is discussed in [section 6.9.1](#) of this assessment report.

6.4 Land

The EIS adequately described aspects of the project site related to both the existing and proposed qualities and characteristics of the land. The EIS addressed how those qualities and characteristics of the land would interact with, and affect, the potential impacts of the project. The following subsections address those qualities and characteristics in more detail.

6.4.1 Topography

The EIS adequately described and illustrated the existing topography. The topography of the project site is predominantly flat, with Phillips, Hughes, One Mile, Boomerang and Plumtree creeks running through the site. The terrain is undulating and the existing land use consists mostly of grazing and mining activities. Prior to land clearing, the area was composed of Brigalow and Belah vegetation.

[Section 6.5](#) provides more detail on the relationship between the final topography of the site and water resources.

6.4.2 Geology and geomorphology

The EIS adequately described the geology and geomorphology of the site and its surrounding area. The surface geology, showing the distribution of the Quaternary alluvium and Tertiary sediments, is presented in Figure 5-3 of EIS Chapter 5 (Land Resources), and the Permian geology is shown in Figure 5-4 of EIS Chapter 5 (Land Resources). The project is in the Bowen Basin, and the geology consists of Permian coal measures overlain by a variable thickness of unconsolidated to poorly consolidated Tertiary and Quaternary sediments. The Permian aged Moranbah Coal Measures are the major coal resource in the region, and form part of a thick Permian unit with sedimentary rocks of siltstone, sandstone, mudstone and coal. The project would extract coal from the Dysart Lower (D24 and D14) seams. The surrounding area has limited alluvium distribution with low shallow groundwater availability.

6.4.3 Soils

The EIS adequately described the soil types of the project site. The soil types include gradational to duplex sandy soils and uniform clays, with areas of drainage depressions near active alluvial areas.

The EIS has undertaken both desktop and soil surveys and has identified 26 soil mapping units (SMUs) within the project site. These are shown in Table 5-3 and Figure 5-6 of EIS Chapter 5 (Land Resources). EIS Appendix B-1 (Land Resources and Soils Technical Report) provides a full description of the soils and land resources methodology.

The EIS also assessed for actual and potential acid sulfate soils and concluded that SMUs presented a very low potential for acid sulfate soils.

The EIS has identified the following potential impacts from topsoil stripping during construction:

- incorrect stripping depths of an SMU
- mixing of higher quality soil with low quality soil during stockpiling
- erosion of areas that have been stripped or stockpiled
- incorrect placement of soils
- acid sulfate soil impact.

The EIS has undertaken topsoil and subsoil stripping assessments to understand the soil stripping depth for each SMU. This is summarised in Table 87 of EIS Appendix B-1 (Land Resources and Soils Report). The mitigation measures for topsoil stripping include:

- a register of soil type and origin of the soils to prevent mixing of higher quality soils with lower quality soils
- erosion of bare earths during stripping and stockpiles management can be mitigated by assessing the soils to be disturbed, the stockpile design and sediment and erosion control methods in place
- regular inspections for acid sulfate soil indicators such as waterlogged soils, strong odour of hydrogen sulfide, mottling of soils, soil colour (blue grey), water colour (blue-green) and presence of oily film.

The EIS has also committed to no topsoil stripping in areas of strategic cropping land (SCL) other than those approved under the Regional Interests Development Approval (RIDA) process.

The EIS states that the extent of surface disturbance would be limited because the project is underground mining. To ensure these mitigation measures are enforceable, I recommend that draft EA conditions E1 and E2 in [Appendix A](#) of this assessment report be applied to the EA.

6.4.4 Land contamination

The EIS has addressed the land contamination of the site and conducted a contaminated land assessment of the project site, using a desktop review. No identified Contaminated Land Register lots were found; however, three lots within the project site vicinity were identified on the Environmental Management Register. Aerial photographs were used to search for potential pre-existing notifiable activities within the identified areas of concern.

The EIS identified the following potential land contamination sources:

- spills of fuels, greases and oils
- ineffective mineral waste disposal leading to leaching
- cargo spills during coal transportation on the mine haul road
- ignition of unprocessed coal releasing fly ash and other emissions
- overburden being stored
- dust suppression using water containing contaminants.

To address impacts from the potential contaminated land, the EIS has committed to implementing the following prior to the commencement of the project works:

- directing excavation works, spoil or topsoil storage during planned operations and remediation to avoid potentially contaminated areas
- designing drainage to minimise the amount of run-off occurring near, or across, potentially contaminated land
- undertaking an environmental assessment of potentially contaminated sites that would be impacted during the operational phase.

The EIS has been amended to clearly demonstrate the areas of notifiable activities (EIS Chapter 5 Figure 5-12). To ensure these mitigation measures are enforceable, I recommend that the draft EA conditions E3 and E4 in [Appendix A](#) of this assessment report be applied to the EA.

6.4.5 Subsidence

The EIS adequately assessed the potential for surface subsidence and the extent of surface cracking and subsurface rock deformation, using a geotechnical model. Other potential impacts from subsidence include impacts on:

- surface water resources
- groundwater
- terrestrial ecosystems
- aquatic ecosystems

The EIS used appropriate tools and techniques to predict the location, extent and depth of subsidence, and its effect over time on surface landforms. The EIS effectively applied the predictions for subsidence when assessing potential impacts on other matters such as the flow and infiltration of surface water, the redirection of groundwater flows, and changes to ecology.

Subsidence is predicted to occur over the underground mining areas. The maximum surface subsidence ranges from 2m to 3.4m over longwalls. The EIS includes the map of maximum

potential area of subsidence (Figure 3); however, this area of impact would be reduced through mitigation measures listed below.

The EIS proposes to undertake an adaptive management approach, to monitor, evaluate and manage the impacts from subsidence on a case-by-case basis, as explained in the subsidence management plan (SMP) in EIS Appendix B-2 (Subsidence Modelling). The EIS proposes to use the water balance model for each longwall panel. The EIS states that subsidence management is to commence approximately two years after the mining of each longwall panel, as the two-year timeframe allows for the full extent of subsidence impacts to be realised.

Subsidence can also cause surface and sub-surface cracking, especially at the edges of longwall panels where slope change is greatest. The EIS predicts that the potential for crack formation in the overburden strata can be predicted by the surface strain. Depending on the longwall panels, the surface cracking can extend to a depth of 30-50m. Surface cracking can lead to seepage as fractures in the Permian rock and overlying Tertiary sediments may provide pathways for the drainage of groundwater resources.

Mitigation measures proposed in the EIS for the subsided riverine areas include:

- crack and erosion repair works
- bed and bank stabilisation, such as rock armouring, erosion control matting, reprofiling and revegetation
- drainage establishment
- removal of fish from isolated ponding created by subsidence
- groundwater monitoring.

Mitigation measures proposed in the EIS for subsided non-riverine areas include:

- vegetation planting to support the stability of landforms around depressions
- crack repair works
- temporary stock exclusion zones
- revegetation of ponding areas with species tolerant of inundation
- installation of permanent drainage channels to divert water (if determined that this would incur less harm than the free-draining scenario).

The EIS has also demonstrated that at BMA's Goonyella Riverside and Broadmeadow mines, impacts of subsidence have been reduced over time as bed load sediments fill in the depression as flow events commence.

There were 10 submissions related to subsidence. One of the concerns, raised by the DLGWV was the ponding of surface waters in subsided areas. Without appropriate drainage, these ponded areas could reach depths of up to 2.9m. The EIS Appendix O-1 (Summary of commitments) now includes installing drainage infrastructure to prevent water ponding caused by subsidence.

Another submission by the Department of Primary Industries (DPI), identified potential subsidence impacts on waterways, including erosion, sedimentation, changes to surface water quality, alterations to overland flow paths, and disruptions to fish passage. [Section 6.8.2](#) of this assessment report discusses project fish passage impacts. DPI supported mitigation measures, such as erosion protection in waterways and the implementation of a receiving environment monitoring program. Erosion and sediment control measures have been included in the commitments outlined in the EIS Appendix O-1 (Summary of commitments). To ensure these

mitigation measures are enforceable, I recommend that draft EA conditions F16 to F21 and K4 in [Appendix A](#) of this assessment report be applied to the EA.

The EIS has committed to mitigating, managing, monitoring, and reporting any subsidence impacts in accordance with EIS Appendix K-2 (Subsidence Management Plan). This commitment includes receiving water quality monitoring—specifically for electrical conductivity (EC), pH, and turbidity—following subsidence events. I therefore recommend that the proponent monitor the receiving waters as part of the SMP in accordance with the recommended EA conditions K1 to K13 of [Appendix A](#) in this assessment report.

Additionally, there is a minor discrepancy in Appendix K-2. Section 6.1.2 of Appendix K-2 does not include Plumtree Creek as a site to be assessed for pre-subsidence conditions using LiDAR surveys, whereas Table 11 does list Plumtree Creek. To ensure consistency and comprehensive monitoring, I recommend that all three creeks listed in Table 11 of Appendix K-2 be included in both the water quality and LiDAR assessments of the SMP.

The EIS proposes to utilise existing overland flow paths and to establish a gravity-drain between ponded areas and the nearest waterway or natural flow path. Minor remedial drainage earthworks are also proposed to reinstate free drainage.

To ensure these mitigation measures are enforceable, I recommend that draft EA conditions K1 to K13 in [Appendix A](#) of this assessment report be applied to the EA.

As per commitments in the EIS Appendix O-1 (Summary of commitments), the proponent is to develop the PRC plan and schedule prior to commencement of the project. The PRC plan will also align with the SMP and include suitable measures to avoid and minimise impacts related to subsidence.

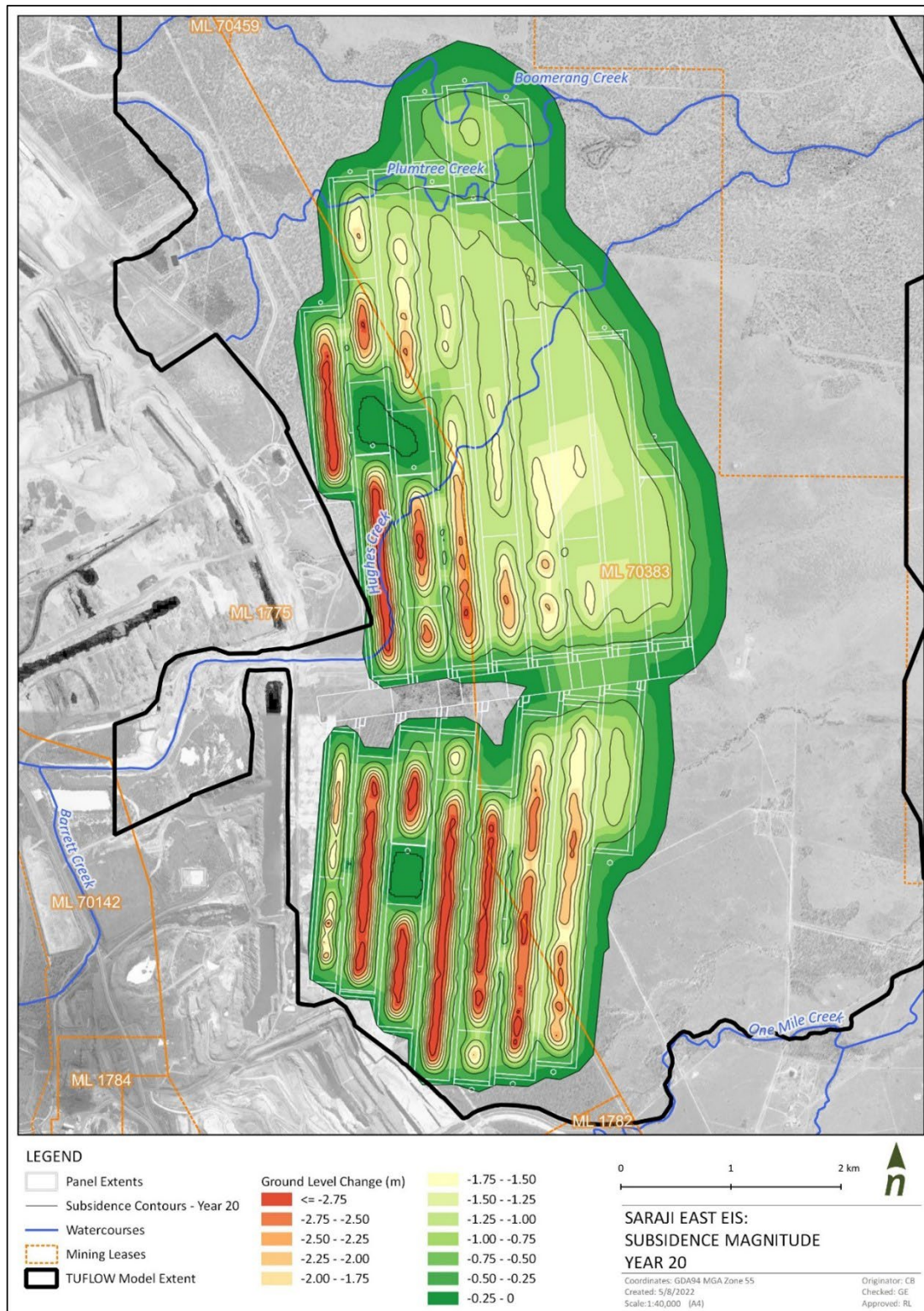


Figure 3 Subsidence contours and extent. Source: EIS Appendix E-1 (Surface water quality technical report), Figure 7

6.4.6 Land tenure and land use

The underlying land tenure is freehold and leasehold, as discussed in EIS Chapter 3 (Project Description), section 3.6. There are two homesteads on freehold land within the project site, which are owned by the proponent, and an additional five homesteads surrounding the project site, as depicted in EIS Chapter 4 (Land use and tenure), Table 4-1, and shown in Figure 4.

The closest receptors during the operation of the mine, which are not owned by BMA are Saraji Homestead 2 and 3. The proponent has a compensation agreement in place for potential dust and noise nuisance with the owners of Saraji Homestead 2 and Saraji Homestead 3 to manage interactions with mining activities. The impacts from air and noise for these sensitive receptors are discussed in [section 6.9](#) and [6.10](#), respectively, of this assessment report.

The EIS adequately addressed temporary and permanent changes to land uses of the project site and adjacent areas. The EIS has identified SCL located to the southeast of the project site on MLA70383, where the proposed 66kV powerline would be placed. The proponent conducted an SCL assessment in accordance with the RPI Act and has completed consultations with the relevant government agencies to secure and complete the application for a RIDA under the RPI Act. The proponent was granted a RIDA, subject to conditions, under the RPI Act on 18 October 2021 (RPI21/001) for 13.39ha of disturbance to a verified SCL where the project's proposed 66kV powerline overlapped a mapped SCA.

The EIS adequately assessed the potential for incompatible land uses within and adjacent to the project site and concluded that none would arise.

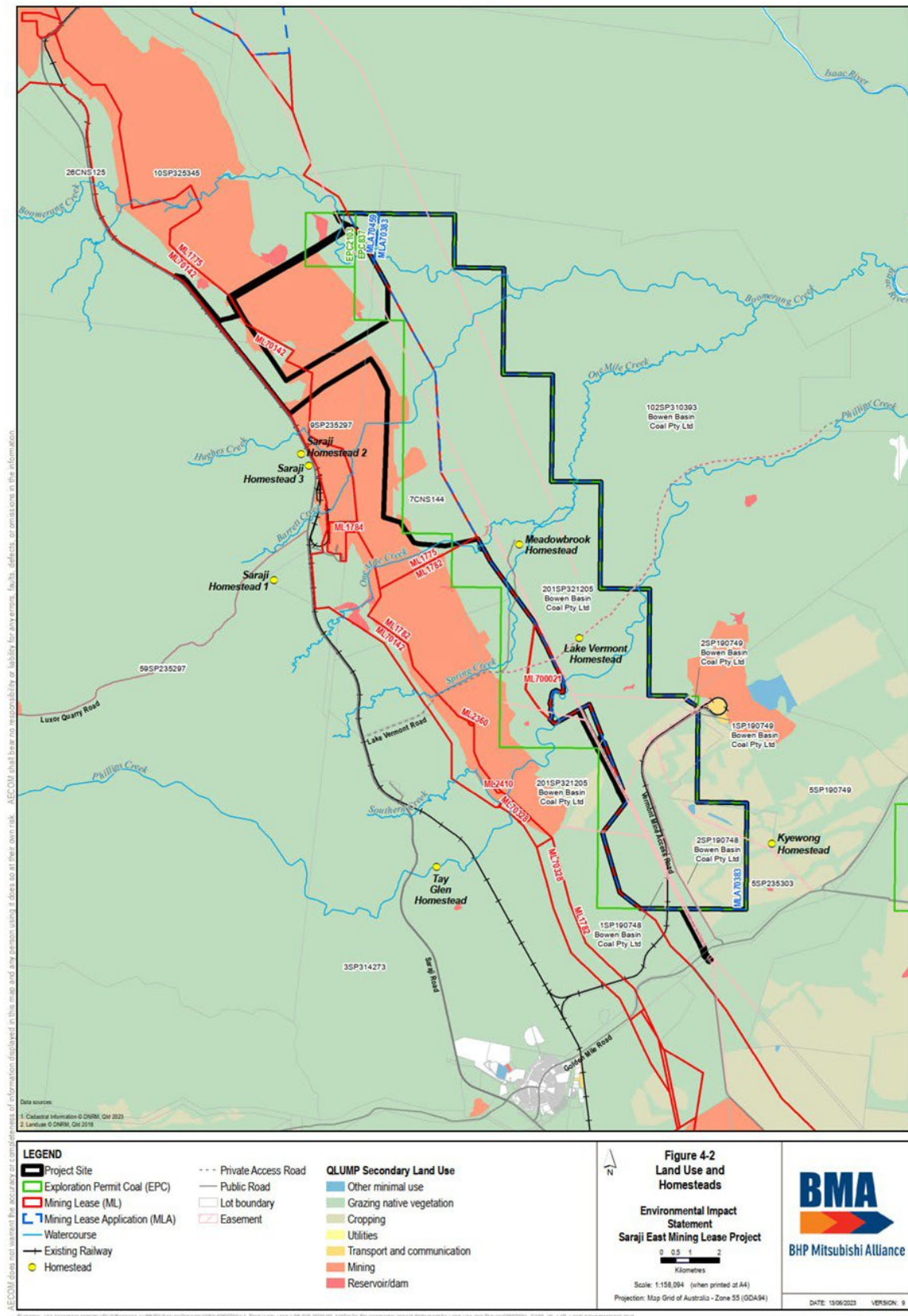


Figure 4 Land use and homestead. Source: EIS Chapter 4 (Land Use and Tenure), Figure 4-2

6.4.7 Land suitability

The EIS undertook an assessment of the land suitability for broadacre or dryland cropping, and cattle grazing on improved pastures, across the soils of the project site. The assessment was based on the Queensland Government's *Guidelines for agricultural land evaluation in Queensland* (DSITI and DNRM 2015).

The findings were as follows:

- The southern extent of the project site is mapped as an important agricultural area and is within the SCL Trigger Map.
- Small areas in the south of the project site are mapped as current broadacre cropping.

The EIS also undertook land suitability assessments of each SMU in the SCL for dryland and broadacre grain cropping and grazing. The agricultural land classes are listed in EIS Chapter 5 (Land Resources), Table 5-6.

- Cropping: most land within the project site is presently unsuitable for broadacre or dryland cropping. Land across the project site has been identified as mostly marginal land that is presently unsuitable for cropping (Class 4), or land that will always be unsuitable for cropping (Class 5).
- Grazing: the project site is predominantly suitable grazing land with moderate limitations (Class 3) and marginal land with severe limitations for grazing (Class 4), with smaller areas suitable for grazing sown pastures (Class 1-2). There are also patches of land that are unsuitable for grazing (Class 5) in the north and west of the project site.

The EIS proposed that after mining ceases, the post-mining land uses would be primarily suitable for grazing land and some woodland habitat. The southern end of the project site would be suitable for dryland cropping (Figure 5). As per EIS Appendix O-1 (Summary of commitments) the proponent has committed that the PRC plan will incorporate these outcomes. To ensure these mitigation measures are enforceable, I recommend that draft EA condition E6 in [Appendix A](#) of this assessment report is applied to the EA.

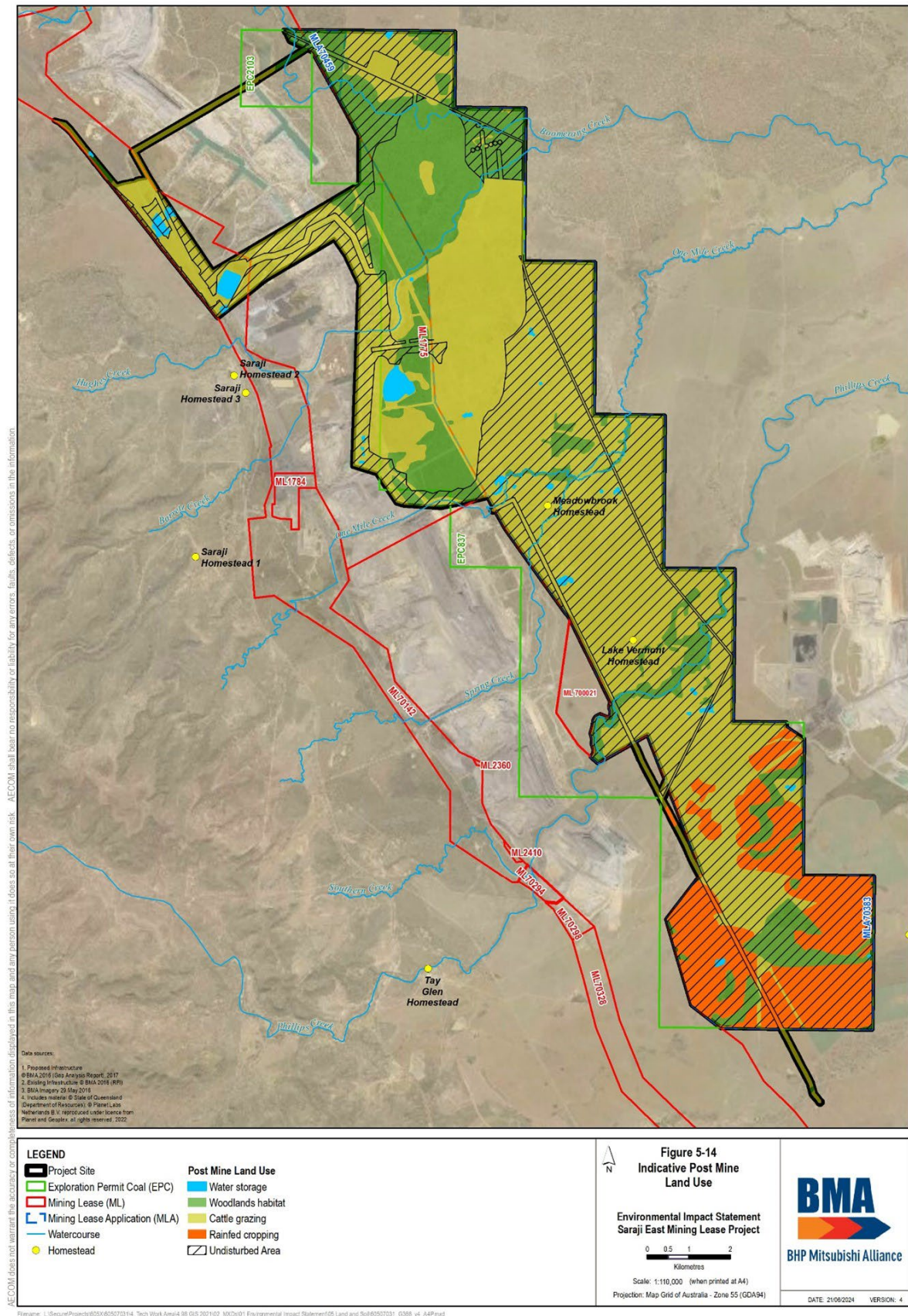


Figure 5 Post mine land use. Source: EIS Chapter 5 (Land Resources), Figure 5-14

6.4.8 Landscape character and visual amenity

The EIS adequately described and assessed the potential impacts on the existing landscape character and visual amenity.

The EIS has undertaken a landscape and visual impact assessment that considered the likely scenic amenity and lighting impacts. As there are no mandated Commonwealth or State requirements for landscape and visual impact assessment, the proponent used several international and interstate guidance materials listed in EIS Chapter 13 (Scenic Amenity and Lighting), section 13.2.4.

The project is in an area with few sensitive visual receptors and is surrounded by mining activities. Much of the project is underground with associated above-ground mine infrastructure, which may result in localised changes to views primarily affecting travellers on Saraji Road and rural homesteads. Seven residential homesteads were identified within 10km of the project site. Six viewpoints were selected to represent the range of views likely to be experienced by the publicly accessible vantage points. The project lighting would be present at the following locations:

- accommodation village and internal roads
- MIA
- CHPP
- conveyor
- pedestrian walkways and carparks
- ROM pad
- mobile plant
- gas drainage network and flares
- other safety lighting for heavy vehicles to operate.

Mitigation measures are listed in EIS Chapter 13 (Scenic Amenity and Lighting), Table 13.24. Briefly, the EIS is committed to minimising the use of night lights, using aeroscreen luminaires to reduce glare and spill lighting, and tilting the light away from sensitive receptors.

The EIS stated that the accommodation village (if required) would be installed during the construction phase of the project. However, this accommodation village would be dismantled and removed following the completion of the construction phase.

6.5 Rehabilitation

The EIS adequately addressed the TOR with respect to rehabilitation. A rehabilitation management plan (RMP) was provided in EIS Chapter 5 (Land Resources), section 5.6.4 and Appendix K-1 (Rehabilitation Management Plan). The TOR for this project were finalised prior to the requirement for a PRC plan to be included as part of the EIS. As a result, following the EIS process, the proponent will need to use the information in the EIS to develop a PRC plan, which must be submitted to DETSI.

The maximum area proposed to be disturbed within the project footprint is 3,348ha. The EIS identified the following project site areas that would require rehabilitation due to direct surface disturbance:

- CHPP
- rail loading balloon loop

- mine industrial area
- water dams
- ROM pad
- conveyor footprint
- construction and operation villages
- access roads
- existing water and power infrastructure.

Unless an agreement is reached with the subsequent landowner to retain components, the proponent would undertake the following rehabilitation/decommissioning activities:

- all mine roads would be rehabilitated
- all water dams not required for long term water management would be decommissioned and dismantled
- all major infrastructure including buildings, powerlines, pipelines, monitoring equipment, and hardstands would be decommissioned and removed offsite
- concrete pads would be covered with benign waste rock or ripped and removed, then topsoiled and re-vegetated
- other facilities such as workshops and warehouses would be decommissioned and removed
- sealing, capping and grouting of ventilation shafts and boreholes would be undertaken
- entrances to the underground workings would be blocked off and sealed.

In areas subject to subsidence, the final landform would be suitable primarily for cattle grazing, along with dryland cropping for the mapped SCLs and woodland habitat or watercourses. The changes between existing land uses and proposed post-mining land uses are discussed in [section 6.4.5](#) of this assessment report. The EIS Appendix K-1 (Rehabilitation Management Plan) Table 8 listed the post-mining land use and the options for growth media and surface treatment.

The EIS has stated that the proponent would undertake rehabilitation monitoring to track rehabilitation progress against the milestone criteria as summarised in Table 10, and the rehabilitation parameters listed in Table 11 of EIS Appendix K-1 (Rehabilitation Management Plan). Monitoring would be undertaken annually for the first three years of rehabilitation, then in the fifth year, and then every five years. The rehabilitation milestones were drafted in EIS Appendix K-1 (Rehabilitation Management Plan), with objectives and goals provided in Table 3, and an indicative rehabilitation schedule provided in Table 5.

As listed in EIS Appendix O-1 (Summary of commitments), the proponent has committed to submitting their PRC plan prior to the commencement of construction works.

DETSI has identified some concerns with the RMP in EIS Appendix K-1 (Rehabilitation Management Plan). I recommend the proponent develop the PRC plan as per the *Progressive rehabilitation and closure plans (PRC plans) guideline* (ESR/2019/4964) (DETSI 2024) and address the following:

- the completion criteria listed for woodland habitat lack measures such as flowering and fruiting of trees, and habitat features such as fallen timber
- riparian vegetation that is native and suitable for containing banks should be included in objectives and completion criteria
- the topsoil depth selected is insufficient for surface treatment of the post-mining land use (PMLU)

- the list of indicative species for cattle grazing PMLU includes exotic species that pose risks of spreading
- the monitoring frequency is insufficient especially for the first year.

The project's underground mine would be accessed through the SRM's existing open-cut mine void (Bauhinia pit). However, as this void is included in the SRM PRC plan, no final voids are proposed as part of this project. ML1775 overlaps the existing SRM and the project; however, the current EA for SRM does not cater for impacts from the underground mining, nor does the SRM PRC plan incorporate the underground mining impacts. The proponent, therefore, will be required to amend both the EA and the PRC plan for SRM. This commitment has been included in Appendix O-1 (Summary of commitments). I recommend that the proponent clarify where the overlaps occur by providing a map that clearly demonstrates the overlap in their PRC plan.

6.6 Water

6.6.1 Surface water resources

The EIS adequately addressed the TOR with respect to water resources. The EIS investigated and assessed potential impacts in accordance with the relevant guidelines and the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP (Water and Wetlands Biodiversity)). The concerns raised in the EIS submissions were largely addressed in the amended EIS. Where concerns remain for surface waters, I have recommended additional EA conditions to support a risk-based approach to surface water management.

6.6.1.1 Existing environment

Six ephemeral creeks (Boomerang, Hughes, One Mile, Spring, Plumtree and Phillips creeks) are located within the project site. Downstream of the project site these creeks converge into the Hughes Creek main channel, which ultimately flows west to east into the Isaac River. The EIS identified the relevant management intent (classified as moderately disturbed) and applicable regulatory water quality guidelines and objectives, environmental values (EVs) to be protected for waters in the project site and the relevant water quality objectives (WQOs) (DEHP 2011). Specifically, these relate to:

- aquatic ecosystems
- stock watering
- human consumption
- primary recreation
- secondary recreation
- visual appreciation
- drinking water
- cultural and spiritual values.

The EIS presented sufficient information regarding the presence of downstream sensitive receptors and wetlands. The creeks downstream of the project site support aquatic organisms, as discussed further in [section 6.8.2](#) of this assessment report. Other relevant EVs include stock watering and human drinking water supply.

Further upstream of the project site and the adjacent SRM, the creek catchments primarily consist of grazing native vegetation land use. This is also the predominant land use downstream of the project.

The proposed underground mine footprint intersects the catchments, beds and banks of three creeks: Boomerang, Plumtree and Hughes creeks. All three creeks are modified by upstream open-cut coal mine operations or are potentially influenced by coal mines, including via

intermittent wastewater (e.g. MAW and treated effluent) or sediment-basin releases. Most project infrastructure, including the CHPP, product stockpiles, and MIA, is planned for the upper reaches of the Plumtree Creek catchment (Figure 6). To note, Plumtree Creek, which runs above the proposed underground mining area, has been omitted from Figure 6. However, it is depicted in the subsidence mapping (Figure 3) as the creek is subject to subsidence management plan. The PWD is mapped within the Boomerang Creek catchment.

Despite the requirement of the TOR and numerous submissions, the EIS did not include a baseline flow assessment for Boomerang Creek. However, some site-specific water quality data was presented in EIS Appendix E-1 (Surface Water) which was assessed by DETSI and, where suitable, used to develop interim limits and draft EA conditions (as per [Appendix A](#) of this assessment report).

Key contaminants exceeding water quality objectives in upstream reaches of the relevant creeks for the project appear to include nutrients, likely reflecting the impacts of grazing land use upstream. Additionally, turbidity, sulfate and EC are potentially elevated compared to background water quality, likely due to the influence of upstream coal mining activities.

6.6.1.2 Potential impacts

Generally, the EIS adequately assessed the project's potential impacts on surface water resources, by focusing on:

- the release of MAW and other contaminants to surface waters, directly or indirectly
- impacts to the stream beds, banks, and geomorphology from subsidence
- the effects of land subsidence on overland flow yield and subsequent changes to hydrological regimes or water quality in local creeks
- erosion and sedimentation during operations and construction including stream crossings, access roads and mine infrastructure
- the potential for wastewater management failures.

The EIS states that in most years the site would operate with a water deficit as the most likely outcome. The EIS water balance model concludes that no additional water allocation or permit would be required to meet the project's needs. This is because BMA already holds water rights to 10,000 megalitres per year from the Burdekin Pipeline and 6,200 megalitres per year from the Eungella Dam. Hence, raw water from BMA's existing surface water allocations would be piped to the project site to meet potable, underground operational, CHPP, and, if required, dust suppression water demands.

6.6.1.3 MAW management/ contaminant releases

As shown in Figure 6, key project water infrastructure proposed in the EIS includes:

- a RWD to receive clean water inflows on the overlapping MLA70383 with SRM
- a clay-lined turkey's nest PWD to receive mine affected waters (MAW)
- a gas dewatering storage area to store saline water separated from the underground gas waste stream
- a mine affected stormwater drainage and WMS
- a sewage treatment plant and associated infrastructure.

Initially, the EIS proposed controlled releases of MAW into Boomerang Creek, supported by an instream water quality monitoring program and a minimum stream flow trigger to ensure sufficient contaminant dilution. However, following EIS submissions requesting further details on the receiving waters' baseline condition, planned releases, and the assimilative capacity of local waterways, the proponent revised its wastewater management approach. The EIS did not

present an updated model, however, the EIS stated that their water balance model had already indicated that they would not have excess water for release.

As outlined in EIS Attachment 1 (Supplementary Information), the updated strategy proposes re-using all MAW on-site (primarily for dust suppression or as CHPP processing water) or transferring it to the neighbouring SRM MAW infrastructure for storage, re-use and possible releases to waterways under the existing SRM EA conditions.

I consider this approach is appropriate for the following reasons:

- Modelling presented in the EIS supported the updated strategy, concluding that controlled environmental releases of MAW would not be required under most modelled climatic scenarios.
- It aligns with EP Regulation objectives and outcomes by prioritising the avoidance of direct MAW or contaminant releases into local ephemeral creeks.
- It would likely reduce the overall water balance take requirements.
- It would lower the risk of cumulative water quality impacts on Boomerang Creek from multiple potential concurrent releases.
- It supports the long-term plan to amalgamate the Saraji East and Saraji projects under one integrated EA.

I support the re-use of MAW for dust suppression, as outlined in the EIS. However, as the EIS failed to present a risk assessment of the impacts of using MAW for repeated dust suppression activities, I consider that further risk assessment of repeated use is needed and recommend regular monitoring of the water quality to ensure its suitability for this purpose. The on-site MAW dams should be monitored to provide valuable knowledge and insights of water quality, and to ensure that the associated risks are identified and managed.

To ensure these mitigation measures are enforceable, I recommend that draft EA conditions F8 to F11 in [Appendix A](#) of this assessment report be applied to the EA.

6.6.1.4 Receiving water

I recommend that the proponent monitor both upstream and downstream of the project site, either as part of a monitoring network, receiving environment monitoring program (REMP), or Fitzroy regional receiving environment monitoring program (FRREMP). I consider monitoring important as it can identify potential issues and assess impacts from diffuse sources of contaminants, subsidence, sediment run off or uncontrolled releases/incidents, whether from planned operations or unintentional events. Proposed monitoring sites are shown in Figure 7.

To ensure these mitigation and management measures are enforceable, I recommend that draft EA conditions F3 to F8 in [Appendix A](#) of this assessment report be applied to the EA.

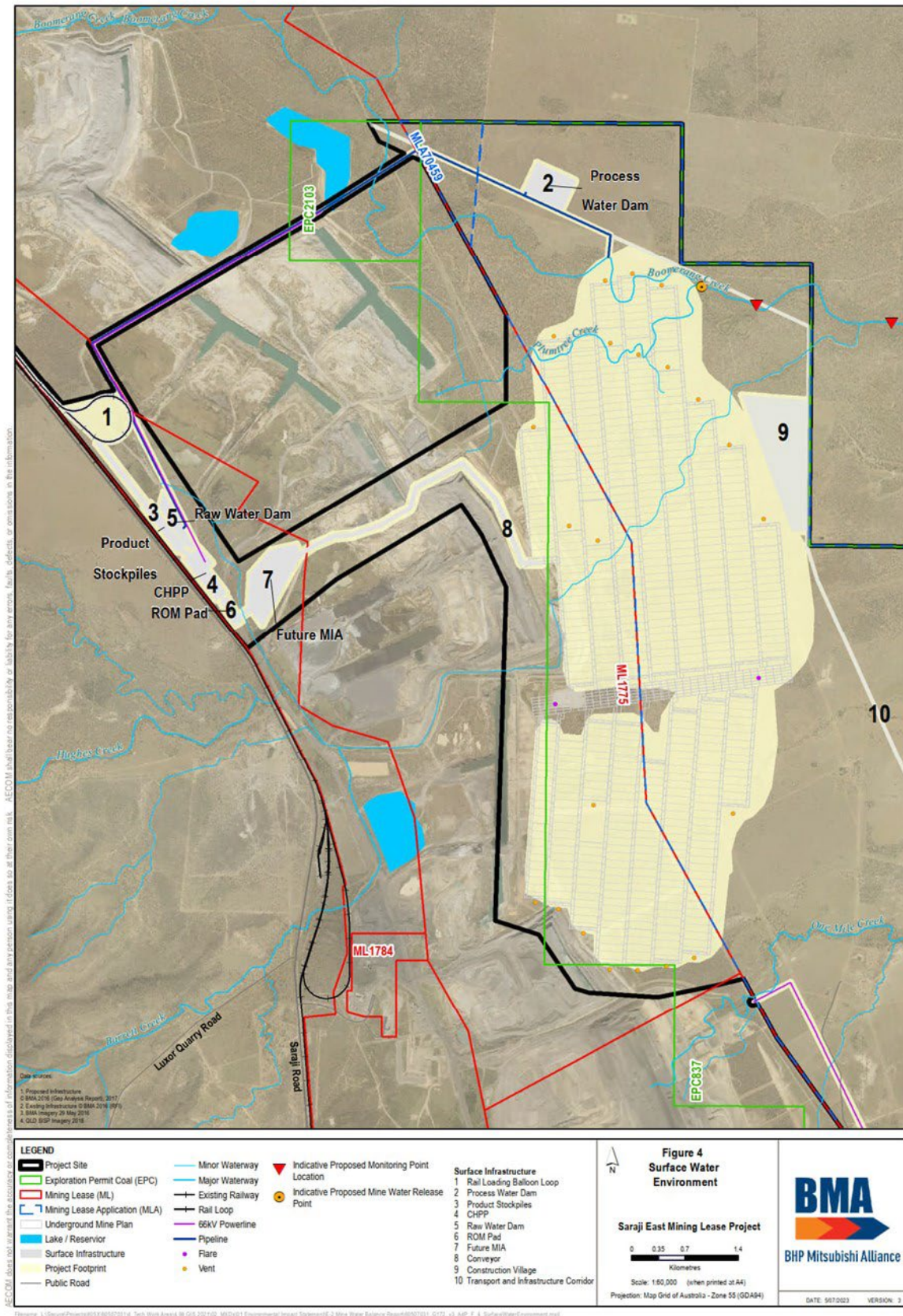


Figure 6 Surface water environment and infrastructure. Source: EIS Appendix E-2 (Mine Water Balance Report), Figure 4

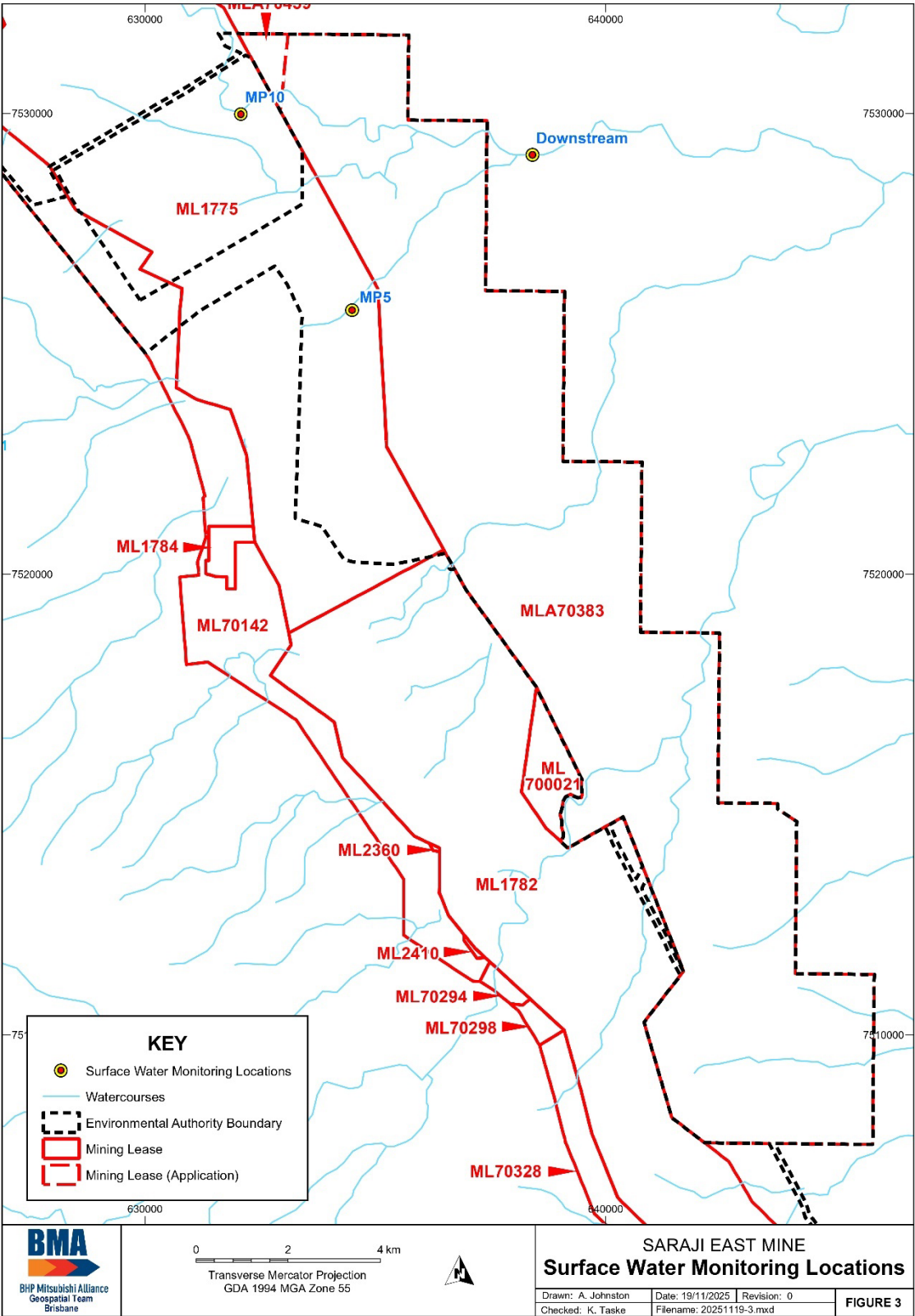


Figure 7 Surface water monitoring points. Provided by BMA (unpublished work)

6.6.1.5 Subsidence

Project-related subsidence is predicted to potentially impact the catchments, stream beds, and banks of Boomerang, Plumtree, and Hughes creeks, with Hughes Creek expected to experience the greatest impacts (Figure 3). Identified impacts included depressions, surface cracking, altered flows, ponding, and increased erosion, all of which are assessed in the EIS.

The EIS provides a quantitative assessment of the worst-case impacts to stream flow volumes. The underground mining operations and related subsidence, once mitigated, are expected to have minimal impacts to natural water overland flow or run-off flows and creek flows within the project site.

Subsidence impact assessment and mitigations are further discussed in [sections 6.4.5](#) of this report. To summarise, some of these potential impacts would diminish over time as sediments fill the depressions of the creek beds. Responsive and adaptive drainage management measures are proposed to minimise impacts to surface water quality and quantities. The EIS has committed to implementing a subsidence management plan for the local creeks.

To ensure these mitigation and management measures are enforceable, I recommend that draft EA conditions K1 to K13 in [Appendix A](#) of this assessment report be applied to the EA.

6.6.1.6 Sediment control

To mitigate potential erosion and sedimentation impacts, the EIS has committed to implementing best practice management and controls during construction and mining operations. This includes applying the *International Erosion Control Association Best Practice Erosion and Sediment Control guidelines*. As there has been updated version of this guideline, I recommend that the proponent refer to the latest version of these guidelines, published in September 2025 (IECA 2025) when implementing erosion and sediment controls during construction and operations. To ensure the mitigation and management controls are enforceable, I recommend that draft EA conditions F14 to F18 in [Appendix A](#) of this assessment report be applied to the EA.

6.6.2 Flooding

The EIS adequately described the history of flooding at the site and assessed its vulnerability to future flooding with particular focus on the project infrastructure. Flood modelling was undertaken to determine the extent of flooding under existing conditions. The maximum predicted flood level was mapped for 2, 50, 100 and 1000 year ARI events.

Floodwaters are expected to exceed the creek channels in the northeast corner of the project, resulting in floodplain inundation at the confluence of Hughes and Boomerang creeks. However, the peak flood level is not anticipated to impact the mine infrastructure, with water depths predicted to reach only 10–35mm at the conveyor and 0–15mm at the mine entrance. The construction village is expected to remain free from flooding.

The EIS states that although peak flood levels are unlikely, where required, mitigation measures such as bunding and barriers would reduce the risk of flooding impacts on mine infrastructure and operation.

The potential changes to flooding behaviour caused by subsidence were assessed using 2D hydraulic modelling. While subsidence is expected to affect surface water flow volumes due to ponding, adaptive drainage management measures would minimise the duration of ponding and mitigate losses to surface water resources. Further details are provided in [section 6.4.5](#) of this assessment report.

6.6.3 Groundwater

The EIS adequately addressed the TOR relating to groundwater, including the information requirements for the IESC set out in the IESC information guidelines dated October 2015. A hydrogeological conceptualisation presented for the project incorporated sporadic alluvial, basal Tertiary and Permian coal seam aquifers with limited connectivity. Groundwater flow direction was to the east, with increasing complexity of flows eastward due to faulting.

6.6.3.1 Groundwater model

A numerical model was developed to predict groundwater ingress, drawdown and recovery as well as to identify areas at risk from changes in groundwater levels and flows. The model objectives were aligned with the TOR requirements (including the IESC guidelines). The model accounted for concurrent underground mining at Saraji East until 2042 and open-cut mining at the SRM to 2031. It incorporated activities such as backfilling, dewatering of open-cut pits and longwall mining. Key assumptions included:

- groundwater recharge occurring primarily through rainfall infiltration
- zero recharge from minor tributaries and drainage lines
- exclusion of non-mining groundwater abstraction due to limited usage.

During the 2021 public submission stage, the IESC, DETSI, and DRDMW identified shortcomings in the initial model, including limited calibration data, unvalidated assumptions on vertical fracturing, insufficient sensitivity analysis, and absence of independent peer review. A revised regional model, presented in the 2023 AEIS, addressed these issues with updates to model cell sizes, fracture zone depth, hydraulic properties, geological layers, faults and surface features. Peer review findings included:

- agreement with the authors of the model report that the model can be classified as primarily class 3 model with some aspects meeting the lower (medium confidence) class 2 level.
- that the groundwater modelling is best practice, with generally good calibration described in the vicinity of the Saraji East site.
- that a rigorous Monte Carlo uncertainty analysis offset much of the uncertainty that is inherent in a groundwater model.
- assumptions about the extent and effect of subsurface fracturing and surface cracking were considered conservative.

The model predicted 8,857 megalitres of groundwater ingress over the 20-year mine life, averaging 183 megalitres per year (0.5 megalitres per day) and peaking at 500 megalitres per year (1.4 megalitres per day). Dewatering would involve gravity feeding or pumping inflows to a portal area sump, then transferring to the project PWD (125 megalitres capacity) to contain MAW without releases. The project would require an Associated Water Licence under the *Water Act 2000* for groundwater take.

6.6.3.2 Groundwater drawdown

The model predicted groundwater drawdown from the project mining activities, presented as incremental drawdown (project scenario) beyond current mine impacts (approved scenario) at the site. The EIS concluded no incremental drawdown in Quaternary alluvium but noted incremental drawdown beyond the mining lease in Tertiary and Permian strata. Drawdown in the Tertiary is predicted to extend off lease to the east. Drawdown in the Moranbah Coal

Measures (Permian) coal seams is predicted to extend north–south, influenced by geological structures and extents.

Maximum cumulative groundwater drawdown was also modelled, combining impacts from Saraji East and existing mines. The project drawdown connects with impacts from Peak Downs (to the northwest) and Saraji (to the west) mines, in the Tertiary sediments and Permian target D seam.

The EIS identified 24 groundwater bores within the project drawdown area: 22 on proponent-owned land, none used for water supply. The two privately owned bores, screened below the target coal measures, are not expected to be impacted, so no make good agreements were proposed.

Post-mining groundwater recovery was modelled, predicting equilibrium in longwall panels 1,800 years post-mining, with adjacent SRM voids acting as permanent groundwater sinks.

6.6.3.3 Groundwater dependent ecosystems

The EIS concluded limited surface-groundwater interaction within the drawdown extent, citing zero drawdown in Quaternary alluvium and limited connectivity between the alluvium and Tertiary sediments. However, it recognised potential seasonal links between Tertiary aquifers and creek alluvium on incised sections of Phillips, Hughes, and Boomerang creeks. Drawdown from the project may impact the frequency and duration of this interface. While project field surveys did not discover GDEs intersecting with Tertiary drawdown, the EIS did conclude that there may be GDEs along the eastern extent of Hughes Creek within the project site, linking up to GDEs on the adjacent Lake Vermont Meadowbrook proposed mine site. The Hughes Creek channel and riparian zone is subject to Tertiary drawdown where it crosses the project site. Potential cumulative drawdown impacts on GDEs from this project and adjacent projects, were acknowledged. The EIS concluded low overall risks to GDEs due to their facultative nature and reliance on surface flows. However, given the potential presence of GDEs within the predicted Tertiary drawdown area (including beyond the project lease) and potential cumulative impacts, I support recommendations in EIS Appendix D-2 (Groundwater Dependent Ecosystems Report) for additional baseline GDE data collection and monitoring, to validate these conclusions. I further recommend monitoring of GDEs under a Groundwater Dependent Ecosystem Monitoring and Management Plan (GDEMMP) as per draft EA condition I25 in [Appendix A](#) of this assessment report.

I note that no water level triggers are proposed for alluvial bores in the monitoring network (see below) to validate GDE impact conclusions. I recommend incorporating data from alluvial bores—that are located within predicted incremental Tertiary drawdown extent—into the review of the groundwater model to confirm the zero drawdown estimates for the alluvium. To ensure this is enforceable, I recommend draft EA conditions I10 and I11 in [Appendix A](#) of this assessment report be applied to the EA.

6.6.3.4 Groundwater monitoring

The SRM's existing groundwater monitoring network includes several bores within the project site, though historical data collection has been sporadic. These bores were included in the Saraji East monitoring network. The EIS also committed to installing four additional monitoring bores beyond underground workings to verify drawdown and recovery in Tertiary and Permian sediments and assess vertical flow impacts (see commitment 54 of EIS Appendix O-1 (Summary of commitments)). The locations of these bores were modified during the EIS assessment process, to ensure they would not be impacted by the proposed mining activities. While the

target seam for coal extraction is the D seam, the proponent confirmed that the new Permian monitoring bores would be drilled to the P seam due to the greater depth of the D seam at the new bore locations. I accept this approach, as the monitoring results from the P seam would still be suitable for model validation during model reviews (as demonstrated by the model-predicted significant drawdowns in the P seam) and would also provide data on vertical impacts from the dewatering of the target D seam.

The EIS initially proposed a fixed 2m water level fluctuation trigger for all Saraji East compliance bores, consistent with the SRM EA conditions, and no water level triggers for Permian bores. I did not consider this approach suitable for the project given trends in the recent groundwater data and requested bore-specific water level triggers based on historical and modelled data. Subsequent EIS revisions addressed this and other discrepancies, including dry alluvial bores, incorrect screened depths, and geological unit mismatches. A new Tertiary bore was also committed to, replacing MB20SRM02T, which was screened in both Permian and Tertiary sediments. Additionally, monitoring bores MB33 and MB34, predicted to run dry due to mining, will need to be replaced, with trigger levels established for the replacement bores.

I therefore recommend:

- Four additional bores are constructed down dip of the mining (as per Figure 9-19, EIS Chapter 9 (Groundwater) to monitor groundwater impacts:
 - two bores targeting the Tertiary
 - two bores targeting the Moranbah Coal Measures (P seam) sediments.
- An additional Tertiary monitoring bore is constructed to replace bore MB20SRM02T within the proposed mine footprint.
- All new bores are monitored for a minimum of 18 samples over two years prior to the commencement of the project to ensure sufficient baseline data is collected and water quality and water level triggers are established before any disturbance occurs.
- Compliance bores MB33 and MB34 are replaced, and water quality and water level trigger levels established as above, prior to the screened levels going dry.

I further recommend that ongoing, regular monitoring is conducted at existing bores identified in the Saraji East groundwater monitoring network to ensure a minimum of 18 samples over two years are collected. This Groundwater Monitoring Program would provide robust baseline data for comparison and the establishment of water quality and water level triggers prior to project commencement. I have incorporated these matters into draft EA conditions I3, I4, I6-I9, I14-I15 and EA tables I1, I2 and I3 in [Appendix A](#) of this assessment report which I recommend are applied to the EA .

6.6.3.5 Groundwater quality

The March 2021 EIS assessment of groundwater quality at the site was supplemented in the November 2023 EIS with additional data. The EIS recommended adopting SRM EA water quality indicators and limits.

Based on this, I recommend water quality indicators and limits in Table I2 in [Appendix A](#) of this assessment report are applied. The recommended limits are based on the SRM EA, with additional metalloids that I consider relevant, where ANZG guideline limits have been applied. I note the following:

- Historically, the limits of reporting (LOR) for dissolved selenium and silver have been too high for the ANZG values. I recommend that the proponent ensures adequate LOR to apply the ANZG values in their analyses.

- There are gaps in the trigger levels for some indicators in Table I2 due to insufficient or absent data from the bores, with indicator values considered site-specific. These values must be provided by the proponent, along with supporting information on their derivation, before project commencement. Sufficient samples must be collected in accordance with relevant guidelines, including Queensland Monitoring and Sampling Manual (DES 2018) and Using monitoring data to assess groundwater quality and potential environmental impacts (DES 2021) as well as draft EA conditions I3 and I4 in [Appendix A](#) of this assessment report.
- Where contaminants are demonstrated to be not applicable through monitoring data, the table may be amended.

I note that no limits are proposed for alluvial monitoring bores at the Saraji East site. However, as per [section 6.6.3.4](#), I recommend that water quality monitoring is still undertaken for interpretative purposes at the alluvial bores identified in Table I2 in [Appendix A](#) of this assessment report.

6.7 Regulated structures

The EIS provided an adequate description of all potential regulated structures and assessed their potential impacts in accordance with the relevant current guidelines. This included a preliminary consequence category assessment (CCA) for each project dam.

The preliminary CCA identified the PWD as a regulated structure, as it contains the highest volumes of MAW and has the most receptors in the downstream receiving environment. It was classified as 'significant' and would be managed in accordance with specific design and operational requirements applicable to regulated structures.

The EIS proposed measures to avoid, minimise, or mitigate risks associated with the potential failure of dam embankments, seepage through the dam floor, and overtopping of the structure. To protect people, property, and the environment, the proponent has outlined the following measures:

- incorporating a clay or high-density polyethylene system into the design of the dam floor and embankments
- conducting regular visual inspections of embankments
- monitoring downstream waterways and groundwater bores on a regular basis
- ensuring sufficient capacity to meet the design storage allowance for the PWD
- providing a spillway overflow and maintaining sufficient crest embankment levels.

In Appendix O-1 (Summary of commitments), the proponent has committed to completing a comprehensive CCA following detailed design of the structures. Should the rating of mine dams change during detailed design, their associated performance and management criteria may also change.

To ensure these mitigation measures are enforceable, I recommend that draft EA conditions G1 to G10 in [Appendix A](#) be applied to the EA.

6.8 Ecology

The EIS conducted a desktop assessment of the project site's ecology, utilising records from a 10km search radius.

Field surveys, existing species records, regional ecosystem (RE) mapping and a likelihood of occurrence assessment informed threatened species mapping for the project site. Habitat categories (preferred, suitable and marginal) were assigned based on the methodology prescribed in EIS Appendix C-3 (Central Queensland Threatened Species Habitat Descriptions) (Kerswell et al. 2020).

The EIS undertook field surveys of the terrestrial flora and fauna of the project site exclusively within the two MLAs. Detailed terrestrial flora and fauna field surveys included:

- Flora surveys of 14 secondary sites, 41 tertiary sites and 130 quaternary sites from 2007 to 2020. Vegetation communities within the project site were surveyed in accordance with the Queensland herbarium's survey methodology (Neldner et al. 2012).
- Terrestrial fauna surveys were conducted across the project site in 2007, 2010, 2011, 2016, 2017 and 2020. Targeted fauna surveys for the ornamental snake, koala, greater glider, Australian painted snipe and squatter pigeon were conducted in March 2020.

Aquatic ecology was surveyed at 13 sites on four creek systems and the Isaac River within, upstream and downstream of the project site over December 2021 (early wet season) and February 2022 (late wet season). Many of the surveyed sites were dry at the time of surveys. The control site for Hughes Creek had insufficient water for sampling water quality, macro-invertebrates and fish over both survey periods.

Field surveys of GDEs were undertaken on 13 sites between 7-12 August 2020 and were informed by desktop assessment of BoM GDE Atlas mapping. This included sites on the major watercourses and floodplains of the project site and downstream areas located offsite.

Stygofauna surveys were conducted in September and December 2011, sampling from seven groundwater monitoring bores within the Triassic and Permian sediments. No stygofauna species were detected.

6.8.1 Terrestrial ecology

6.8.1.1 Existing environmental values

The project is located in the northern Brigalow Belt bioregion and is within the Isaac – Comet subregion and the Isaac Connors sub-catchment of the Fitzroy Basin. Six ephemeral creeks (Boomerang, Hughes, One Mile, Spring, Plumtree and Phillips creeks) are located within the project site and the watercourses run west to east draining to the Isaac River. No HEV wetlands or aquatic GDEs were identified in the project site.

Remnant vegetation consists of brigalow woodlands, eucalypt woodlands and vegetation associated with the watercourses and gilgai/ wetlands in the northern half of the project site. The southern half of the project site is dominated by cleared grazing land predominantly mapped as non-remnant vegetation. Extensive grazing pressure and past land-clearing practices have resulted in highly disturbed and fragmented habitats in this region.

The EIS identified the following 10 remnant regional ecosystems within the project site listed in Table 3.

Table 3 Remnant regional ecosystems within the project footprint

Regional ecosystem	Description	VM Act status	Biodiversity status	Project footprint extent (ha)
RE 11.3.1	<i>Acacia harpophylla</i> open forest on alluvial plains	Endangered	Endangered	6.58
RE 11.3.2	<i>Eucalyptus populnea</i> woodland on alluvial plains	Of concern	Of concern	65.51
RE 11.3.4	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. woodland on alluvial plains	Of concern	Of concern	0.01
RE 11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	Least concern	Of concern	73.42
RE 11.3.27b	Freshwater wetlands. Vegetation ranges from open water +/- aquatics and emergents such as <i>Potamogeton crispus</i> , <i>Myriophyllum verrucosum</i> , <i>Chara</i> spp., <i>Nitella</i> spp. <i>Nymphaea violacea</i> , <i>Ottelia ovalifolia</i> , <i>Nymphoides indica</i> , <i>N. crenata</i> , <i>Potamogeton tricarlinatus</i> , <i>Cyperus difformis</i> , <i>Vallisneria caulescens</i> and <i>Hydrilla verticillata</i>	Least concern	Of concern	3.04
RE 11.4.4	<i>Dichanthium</i> spp., <i>Astrelba</i> spp. grassland on Cainozoic clay plains	Least concern	Of concern	0.08
RE 11.4.8	<i>Eucalyptus cambageana</i> woodland to open forest with <i>Acacia harpophylla</i> on Cainozoic clay plains	Endangered	Endangered	222.45
RE 11.4.9	<i>Acacia harpophylla</i> shrubby woodland with <i>Terminalia oblongata</i> on Cainozoic clay plains	Endangered	Endangered	32.56
RE 11.4.13	<i>Eucalyptus orgadophila</i> open woodland on Cainozoic clay plains	Least concern	Of concern	38.03
RE 11.5.3	<i>Eucalyptus populnea</i> ± <i>E. melanophloia</i> ± <i>Corymbia clarksoniana</i> on Cainozoic sand plains/remnant surfaces	Least concern	No concern at present	778.66
Total area				1,220.33

Adapted from Table 6-3, EIS Chapter 6 (Terrestrial ecology).

Two threatened ecological communities (TECs) defined under the EPBC Act were identified within the project site – Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC (Brigalow TEC) and Natural grasslands of the Queensland Central Highlands and the Northern Fitzroy Basin TEC (Grassland TEC). The Brigalow TEC is comprised of RE 11.3.1, RE 11.4.8 and 11.4.9 and has an extent of 210.31ha in the project footprint. The three Brigalow REs are also mapped as Category B Environmentally Sensitive Areas. The Grasslands TEC is comprised of RE 11.4.4 and has a less than 1ha extent within the project footprint. These communities are discussed in the [section 6.17](#) of this assessment report.

Minor extents of high-value regrowth (HVR) vegetation corresponding to eight REs are mapped but were not subject to field verification.

Terrestrial vertebrate fauna surveys conducted between 2007 and 2020 identified 188 fauna species occurring on the project site including 14 amphibian, 24 reptile, 33 mammal and 117 bird species. Eleven threatened species were identified within the project site consisting of the koala, greater glider, short-beaked echidna, squatter pigeon (southern), Australian painted snipe, grey falcon, ornamental snake, and four migratory birds – white-throated needletail, Caspian tern, fork-tailed swift and Latham's snipe.

Terrestrial flora surveys recorded only one threatened species listed by the EPBC Act – bluegrass, *Dichanthium setosum* – from the seven species identified from a likelihood of occurrence assessment. This species was recorded south of Phillips Creek and forms part of the Grassland TEC. King bluegrass, *Dichanthium queenslandicum*, listed as vulnerable under the NC Act, was considered likely to occur within this TEC.

The EIS adequately identified the existing terrestrial ecological values of the project site. The following sections expand on the adequacy of the EIS's assessment of environmental values and impacts on ecology.

6.8.1.2 Impacts on terrestrial ecosystem values

The EIS states that vegetation communities and wildlife habitat would be subject to impacts occurring in the construction and operational phases of the project. The total area of the project footprint subject to disturbance is 3,348.08ha.

Construction phase

Direct impacts from the construction phase include disturbance from clearing for:

- surface infrastructure such as the MIA, product stockpiles, the CHPP, powerline, dams and the worker's accommodation village), and
- the in-mine gas (IMG) drainage network (clearing pads for the gas wells, and 100m wide pipeline and access tracks).

The total area of the project footprint subject to direct impacts from the construction phase is 1,149.60ha consisting of 799.65ha for surface infrastructure and 349.95ha for the IMG drainage network.

Indirect impacts from the construction phase relate to erosion and soil loss particularly to the riparian areas of the six creeks and associated floodplains, traffic, dust, noise and light, weeds and fragmentation and edge effects (primarily from the IMG infrastructure).

The total area of the project footprint subject to indirect impacts from the construction phase has not been quantified. The EIS stated that fauna subjected to light and noise are expected to habituate to the changes. Other indirect impacts would be appropriately mitigated such as dust via an Air Management Plan, and pest species introductions via a Weed and Pest Management Plan (WPMP).

Operational phase

Direct impacts from the operational phase include:

- subsided areas consisting of troughs from depressions and slopes from the longwall panel edges leading to ponded areas and conversion of habitat
- changed hydrological conditions reducing surface water drainage
- cracking of the surface form that may impact the root zone of individual trees
- groundwater drawdown from underground mine dewatering leading to changed

surface flows and reducing the source of water for riparian vegetation.

Indirect impacts from the operational phase include:

- noise and light from surface facilities and the gas wells potentially altering the behaviour of fauna
- operational traffic movements increasing the risk of injury or mortality to fauna
- introduction of weeds and pests.

Longwall mining results in surface subsidence that is modelled to be between 2m to 3.4m below the ground level for the southern panels and 0.75m to 2.25m for the northern panels. Impacts on flora and fauna were stated by the EIS to be fourth order impacts relating to the subsided topography, the geomorphic response and the resulting changes to water quality, water quantity and the flood regime. Substantially depressed areas would lead to the formation of 36 ponds on 145.66ha of land and within the creeks. Without adequate drainage, these areas are predicted to result in senescence and potential death of vegetation, particularly large trees. The conversion of these habitats would lead to a consequential loss of breeding, shelter, foraging and dispersal habitat for fauna. Significant residual impacts on MSES protected wildlife habitat for both construction and operational stages are described below.

Surface cracking is predicted to lead to localised loss of individual mature and semi-mature trees due to the subsurface stresses and shearing of roots. It may also result in the gradual reduction in the health and vigour of vegetation. This is more likely to occur within the riparian corridors where moisture is more limiting. The EIS stated that the cracking clay soils associated with gilgai and the Brigalow TEC are more likely to be resilient to surface cracking impacts. Significant impacts to the composition and structure of REs are not predicted due to the nature of the localised impacts.

The EIS stated that potential drawdown of the alluvium would be minor to insignificant due to the discontinuous nature of the alluvium in Hughes Creek combined with the resilience of riparian vegetation. A GDE field survey concluded that terrestrial GDEs are not within the area of subsidence affecting Hughes or Boomerang creeks. However, the EIS stated there may be GDEs beyond the survey sites at the eastern extent of Hughes Creek within the site and subject to groundwater drawdown by the project (see [section 6.6.3.3](#) of this assessment report).

Impacts to MSES have been assessed against the Queensland Environmental Offsets Policy Significant Residual Impact Guideline (DEHP, 2014).

MSES – Protected wildlife habitat

Where areas of direct clearing and residual ponding intersect with the MSES protected wildlife habitat, the EIS has determined that a significant impact is likely to occur. Periodic ponding can deleteriously impact the extant vegetation's health and over decadal periods alter the structure and composition of vegetation communities. Additionally, ponded areas are predicted to accumulate high levels of salt due to evapoconcentration in the absence of rain events.

Four protected wildlife species listed under the NC Act were recognised as being subject to significant residual impacts – the koala, *Phascolarctos cinereus*, greater glider, *Petauroides volans*, the ornamental snake, *Denisonia maculata*, and the squatter pigeon, *Geophaps scripta scripta*.

As these four species are also listed as MNES under the EPBC Act, the impact and mitigation assessment is provided in [section 6.17](#) of this assessment report.

No significant residual impacts were predicted for the Australian painted snipe, *Rostratula australis*, listed as endangered under the NC Act or the grey falcon, *Falco hypoleucos*, listed as vulnerable under the NC Act. Suitable habitat for the Australian painted snipe was stated to

exist on the project site. The impact assessment considered that the lack of preferred habitat for the Australian painted snipe would mean the species would likely only use the site occasionally. Preferred, suitable and marginal habitat for the grey falcon was stated to exist on the project site. However, this habitat was recognised as being widely distributed across a much broader geographic extent and the species is highly mobile with a large home range.

One protected wildlife species that is not dual listed as MNES was the short-beaked echidna, *Tachyglossus aculeatus*. It was recorded in the study area in 2007. The EIS stated that 1,854.87ha of suitable habitat for the echidna was within the project footprint. However, as the species is widespread and found in a range of modified habitats, no significant impact was determined.

One protected plant – bluegrass, *Dichanthium setosum*, was recorded which was a dominant species within the tussock grassland community RE 11.4.4. Less than 1ha is proposed to be significantly impacted due to clearing for surface works. One other protected plant species – king bluegrass, *Dichanthium queenslandicum*, was considered likely to occur in this community as well.

MSES – Regulated vegetation

Four classes of MSES regulated vegetation were determined by the EIS to be subject to significant residual impacts and are provided in Table 4. Essential habitat, a class of regulated vegetation, is mapped over 724.23ha of the project footprint for the squatter pigeon and ornamental snake. To avoid duplication of offset conditions, significant impacts to these species are assessed in the [section 6.17](#) of this assessment report.

Table 4 MSES regulated vegetation - significant residual impacts

Regulated vegetation	Description	Total significant residual impact (ha)
Endangered REs	RE 11.3.1	1.32
	RE 11.4.8	36.84
	RE 11.4.9	3.47
Of Concern REs	RE 11.3.2	8.18
	RE 11.3.4	6.95
	RE 11.4.2	13.30
Wetland RE	RE 11.3.27f	2.08
Watercourse REs	RE 11.3.25	11.58

Adapted from Table 6-25, EIS Chapter 6 (Terrestrial Ecology).

MSES – Connectivity areas

The Landscape Fragmentation and Connectivity Tool has been used to assess the significance of impact to the MSES connectivity areas. The core remnant areas in the project site would be reduced from 15 to 10 due to project activities. A total significant residual impact of 161.96ha was calculated.

MSES – Waterway providing for fish passage

While the waterways within the project site are ephemeral and only flow after rain events, they are shown as moderate, high or major risk of impact to fish passage under the Queensland waterways for waterway barrier works mapping (Fisheries Queensland 2024). The potential for a significant residual impact on these waterways was assessed, including from the dewatering

associated with installation of waterway crossing infrastructure and from ponded areas of creeks that may restrict the ability for fish movement. In periods of low flow, fish may also be subject to stranding and mortality in both ponds and any channels installed to drain the ponds. In their submissions, DPI considered that mitigation measures proposed in the EIS were sufficient to avoid a significant residual impact on this matter ([section 6.8.1.3](#)).

6.8.1.3 Proposed mitigation measures

The following measures are proposed to mitigate direct impacts from clearing vegetation:

- project design that has incorporated avoidance to environmental values when siting project infrastructure such as gas drainage wells, and alignments for infrastructure corridors
- the retention of habitat trees and habitat features such as felled trees and logs to be relocated for maintenance of fauna use
- the use of fauna spotter catchers to monitor clearance activities.

The following measures are proposed to mitigate direct and indirect impacts of subsidence:

- an SMP is proposed to monitor, manage and mitigate potential subsidence impacts
- minor remedial drainage earthworks would be undertaken to establish a free-draining landform. The objective is to reduce the area and length of time of ponding such that vegetation and associated habitat is not adversely impacted. For more significant ponding impacts, the installation of drainage channels is proposed to drain pond flows to nearby natural drainage paths
- vegetation health would be monitored for foliar discolouration or loss, increased incidence of pathogenic attacks, and tree senescence and death. Tree mortality is proposed to be managed via natural regeneration processes or replanting
- drainage channel design principles include the use of gentle gradients, regrading or rock armouring to reduce erosion impacts, and the use of natural non-dispersive construction material
- ongoing monitoring would require the development of a TARP to identify corrective actions if water quality objectives are exceeded or stream health is adversely changed. Proposed post-subsidence remediation measures include:
 - targeted bank revegetation works
 - creek bed reshaping works and lower bank works to install rock armouring
- surface crack repairs would include mechanical stripping, ripping or ploughing in areas of high erosion risk to stabilise cracks and re-establish drainage.

I note that the accretion of sediments is predicted to partially or fully infill land-based ponds over a timeframe of hundreds of years, while the creek-based ponds are likely to infill within the life of the mine.

Additional mitigation measures include vehicle restrictions to remain on established tracks to reduce the incidence of vehicle strikes with wildlife, the implementation of a High-Risk Species Management Program under the NC Act in the construction phase, and a WPMP to respond to the increased risk of exotic species introductions.

I support the proposed monitoring of the occurrence and impacts of subsidence and proposed mitigation measures in the SMP. Changes to vegetation condition and health and any structural changes to the composition of affected regional ecosystems are proposed to be managed via surface crack repairs as detailed in a preliminary TARP in the SMP.

Additional management plans are proposed to reduce the risk of impacting terrestrial ecology values. This includes development of an Emergency Response Plan that would include

measures to prevent and manage the risk of bushfires. Specific management measures to address impacts to GDEs, fish passage, and water quality and habitat for aquatic species are discussed in [sections 6.8.2](#) and [6.17](#) of this assessment report.

To ensure these mitigation measures are enforceable, I recommend that draft EA conditions J1 to J8 in [Appendix A](#) of this assessment report are applied to the EA.

6.8.2 Aquatic ecology

6.8.2.1 Existing environmental values

The project site includes the watercourses and floodplains of six ephemeral creek systems which run into the Isaac River to the east of the site. Plumtree Creek was not surveyed due to the loss of catchment from the development of the existing SRM. The creeks experience lengthy periods of no flow and retain short-lived shallow pool habitats following rain events.

A desktop assessment provided data for some of the target creeks from the existing SRM REMP program undertaken between 2011 and 2021 but also identified outdated, limited or no data for freshwater fish and macrocrustaceans, freshwater turtles and the platypus, *Ornithorhynchus anatinus*.

The four creeks the EIS considered likely to experience impacts from the project – Boomerang, Hughes, One Mile and Phillips creeks – were surveyed both upstream (west of the existing SRM as control sites) within the project site and two sites on Boomerang Creek were surveyed downstream. Additionally, the Isaac River, that receives the waters was also surveyed. Aquatic surveys were conducted in the early wet season (December 2021) and late wet season (February 2022) conforming to AusRivAS protocols for Queensland streams. Sampling followed seasonal flow events in November, December and January. The timing of the surveys coincided with higher activity periods for turtles in the nesting and breeding periods, and the migration and spawning periods for potamodromous fish species.

The aquatic surveys were undertaken at 13 sites with many of the sites dry at the sampling times. There was insufficient water at the Hughes Creek control site in both sampling periods to record water quality, macroinvertebrates and fish. Aquatic habitat condition of the bed, banks and riparian zones of the creek's survey sites were undertaken. Bioassessment scores were then calculated for all sites and the total habitat scores for the creek systems resulted in a rating of "fair" to "good".

Potential aquatic GDEs were assessed based on GDE Atlas mapping indicating a medium potential presence of GDEs for Boomerang and Hughes creeks. The EIS stated that aquatic GDEs were unlikely to occur and a separate GDE field survey found no aquatic GDEs within the project site.

Water quality physicochemical parameters were measured at each site and samples were subject to laboratory analysis. The EC and pH were within WQO values (DEHP 2011). Turbidity was generally elevated at all sites, especially evident in periods of high flow. Dissolved oxygen was within or above WQOs except for low measurements at Hughes Creek described as potentially the result of small pool size, shade and high levels of decaying organic matter.

Macroinvertebrates were dominated by species tolerant of the highly variable stream flows and turbid conditions. A lack of habitat and available pools limited the abundance and diversity of macroinvertebrate communities. Higher diversity indices recorded at the Isaac River sites reflected increased water flow, larger pools and diverse microhabitat features.

Nine native fish species were recorded across the study area. The fish species were described as being resilient to highly variable flow conditions and stated to be common, widespread and

tolerant of the existing environmental conditions. Macrocrustaceans were dominated by the freshwater prawn, *Macrobrachium sp.*, also considered to be tolerant of a wide range of conditions associated with ephemeral systems.

Aquatic plants were dominated by *Cyperus spp.*, *Eleocharis sp.* and *Carex sp.* of shallow water margins and adjacent dry areas. No listed threatened plants or protected plants were recorded or considered likely to occur.

An overflow wetland on the Boomerang Creek floodplain of approximately 2ha, identified as RE 11.3.27f, was included as GDE survey site 13. Several small palustrine wetlands are located on the floodplain, but no high ecological significance wetlands or wetland protection areas are located within the project site.

Freshwater turtle surveys employed the use of fyke netting and cathedral traps. No turtle species or platypus, *Ornithorhynchus anatinus*, were recorded. The threatened freshwater turtles – white-throated snapping turtle, *Elseya albagula*, and the Fitzroy River turtle, *Rheodytes leukops*, were considered not to be present within the study area. The EIS stated that the highly ephemeral nature of the watercourses within the project site likely limits the suitability of habitat needed for the species persistence. It was noted that the nearest records of these species were respectively 70km and 80km east of the project site on the Connors River. The nearest record of the platypus was stated to be 80km from the study area.

6.8.2.2 Impacts on aquatic ecosystem values

Clearing for construction and stockpiling soil was identified as a high risk of erosion and increasing sediment loads to the receiving watercourses leading to poor water quality and smothering of in-stream habitats. This is particularly the case for the transport and infrastructure corridors that would cross riparian and in-stream habitats. The aquatic ecology surveys noted that all observed macrophytes were emergent and located on the mid to upper bank margins and therefore less susceptible to smothering by sedimentation. High turbidity levels resulting from increased sedimentation were stated to be within the turbidity resilience of four common species of native fish, the Agassizi's glassfish, bony bream, purple-spotted gudgeon and sleepy cod, recorded from the site and found throughout the Fitzroy Basin.

Subsidence impacts have been modelled showing that surface water would flow into areas of subsidence and create 36 ponds – three of which would be located within Hughes Creek. The EIS stated that subsidence would lead to riparian vegetation loss, increased bank and bed erosion, bank instability, downstream aggradation, increased sedimentation and degraded water quality.

Pool formation of 0.5-1km in extent is modelled for Hughes and One Mile creeks. The deeper pools are likely to persist for longer periods than the existing shallow pools but may act to trap fish, disrupt movement, and lead to fish mortality if affected reaches are not subject to overflow. The perceived benefit of the creation of aquatic habitat associated with these pools would likely be short-lived as the elevated sediment supply would partially or completely infill these ponds over the life of the mine. Additionally, high salinity values are modelled for larger, deeper ponds that are not subject to sufficient overflows and flushing of salts.

The EIS stated that aquatic habitat changes resulting from the impacts of subsidence posed a negligible to low residual risk to aquatic ecosystem values, provided that mitigation measures were successfully implemented.

Barriers to fish passage as a result of waterway crossings installed for project infrastructure were recognised as potentially impeding fish access to feeding, spawning and nesting resources. Waterway crossings are proposed for six road crossings, four powerline and pipeline

crossings, and three IMG drainage network crossings. While the IMG crossings would be removed progressively as mining panels proceed and some of the pipeline/powerline crossings would not be permanent, it is less clear which, if any, road crossings would be removed at the end of mining. In the RMP, I recommend clarifying that rehabilitation of the site to a self-sustaining PMLU includes removal or ongoing maintenance of project waterway crossings for long-term aquatic fauna passage.

Contaminants such as MAW, chemicals, fuels, oils and treated effluent have the potential, if not managed properly, to enter receiving waters via leaks, seepage and spills. There is also the potential under extreme rainfall events for overflows of the water management dams. The MAW is not proposed to be released to the receiving environment but contained within the PWD. The impact of contaminants entering the receiving waters has the potential to alter the physical and chemical properties of the creek waters and resultant acute or chronic toxicity impacts on aquatic flora and fauna.

6.8.2.3 Proposed mitigation measures

The following measures are proposed to mitigate impacts:

- The design and construction of the infrastructure crossings of waterways would:
 - implement a hierarchy of fish passage design considerations, prioritising the installation of bridges where feasible
 - be in accordance with the relevant Waterway barrier works accepted development requirements, to minimise impacts on fish habitat and passage
 - limit the number of crossings and the clearing widths would be reduced to minimise the potential for erosion impacts
 - conduct works outside of the likely periods of flow – December to April – to avoid potential impacts to fish movement and feeding
 - comply with the *Fish salvage guidelines (Queensland Government 2024)* and undertake fish salvage if needed during dewatering activities
 - undertake regular inspections and maintenance to remove debris and sediment build-up at the crossing infrastructure in the operational period.
- Implementation of erosion and sediment control measures to minimise the release of sediment and to meet pollution load reduction requirements. An Erosion and Sediment Control Plan (ESCP) would be required by the EA and is to be consistent with the latest version of the *International Erosion Control Association Best Practice Erosion and Sediment Control guidelines* (IECA 2025). It is noted that implementation of a RMP would also address mitigation of sediment transport from disturbed areas and fulfil requirements associated with a PRC Plan.
- Implementation of a REMP and/or a FRREMP monitoring and associated mitigation measures.
- Implementation of an SMP to monitor subsidence-induced impacts on aquatic ecosystems and to implement management measures such as:
 - bank stabilisation to reduce erosion risk
 - creek channel mitigation works that facilitate fish passage, such as remediating drops in elevation, maintaining stream bed slopes of less than 5% where waterways are regraded, and fish-friendly erosion control structures
 - ponding remedial drainage works to ensure catchment flows are maintained that span approximately 16.2km of overland flow paths for the 36 ponds over the life of the mine
 - remediation of surface cracking to maintain vegetation health
 - amelioration works are to be conducted in the dry season to reduce impacts to aquatic ecological processes and reduce the risk of erosion.

- Implementation of a Water Management Plan (WMP) to:
 - manage and contain project MAW
 - manage downstream water quality impacts by diverting runoff from undisturbed areas around disturbed areas using drains and diversion bunds
 - monitor and assess trends in groundwater and surface water.
- Implementation of a GDEMMP and collection of an additional two years of baseline data on GDE extent, function and condition to validate the EIS ecohydrological characterisation of riparian and wetland vegetation at the site.

To ensure these mitigation measures are enforceable, I recommend that draft EA conditions F3 to F11, F14 to F19, I25 and K3 to K13 in [Appendix A](#) of this assessment report be applied to the EA. Additional conditions for MSES and MNES are discussed below.

6.8.3 Biosecurity

The EIS adequately surveyed and described the current distribution and abundance of pest animals, weeds, and disease vectors on the project site. It also adequately assessed the potential impacts from the project's construction and operation on the spread of pest animals, weed species and disease.

The EIS identified 40 exotic flora species including 11 considered as a 'Restricted Matter' under the Queensland *Biosecurity Act 2014* and 15 species identified within the Isaac Regional Biosecurity Plan 2020-2023. These species are listed in Table 21 of EIS Appendix C-1 (Terrestrial Ecology Report).

The terrestrial fauna ecology assessment survey identified nine introduced vertebrate fauna species, consisting of eight mammals and one amphibian species. Of these, wild dogs, *Canis lupus dingolfamiliaris*, feral cats, *Felis catus* and feral pigs, *Sus scrofa* are considered as restricted matters under the *Biosecurity Act 2014* and priority pests under the Isaac Region Biosecurity Plan, and European rabbit, *Oryctolagus cuniculus* and fox, *Vulpes vulpes* are also listed under the *Biosecurity Act 2014*. The other pest species identified within the project site are domesticated cattle, *Bos Taurus*, house mouse, *Mus musculus* and the cane toad, *Bufo marinus*. These species are listed in Table 33 of EIS Appendix C-1 (Terrestrial Ecology Report).

The construction and operation of the project has the potential to introduce pest fauna species. It is likely that underground mining would result in subsidence, which may create new habitat opportunities for pest fauna species such as cane toads and feral pigs. There is a risk with delivering construction materials to the site of introducing exotic ants, such as yellow crazy ants, *Anoplolepis gracilipes* and fire ants, *Solenopsis invicta*. In addition, construction of water storages and dams has the potential to create ideal breeding conditions for biting insects such as mosquitoes.

The EIS has committed to prepare a WPMP which is consistent with the Biosecurity Queensland methods and the Isaac Regional Council Biosecurity Plan 2020-2023. The plan would include the following:

- maps showing distribution and abundance of weeds
- measures to remove and control any new weeds
- ongoing monitoring and identifying of pest species
- site-specific induction on weed management for the workers
- undertake vehicle hygiene protocols
- control and minimising the spread of weeds from all rehabilitation material.

The EIS does not specifically address how the spread of pests from ponding and water storages would be managed. I recommend that this is considered by the proponent as part of their General Biosecurity Obligation under the *Biosecurity Act 2014* when updating the WPMP.

6.8.4 Summary of the project's relevant impacts

The construction, operation and decommissioning of the project would have the potential to cause the following significant impacts on MSES listed in Table 5.

Table 5 Summary of MSES significant residual impacts

Prescribed environmental matters		Total impact (ha)
Regulated vegetation*		
Endangered RE	RE 11.3.1	1.32
	RE 11.4.8	36.84
	RE 11.4.9	3.47
Of Concern RE	RE 11.3.2	8.18
	RE 11.3.4	6.95
	RE 11.4.2	13.3
RE intersecting an area shown as a wetland on the vegetation management wetlands map	RE 11.3.27f	2.08
REs occurring within the defined distance from the defining banks of a relevant watercourse	RE 11.3.25	11.58
Connectivity areas		
Connectivity areas	Remnant vegetation in an area of land required for ecosystem functioning	161.96
Protected wildlife habitat**		
Ornamental snake, <i>Denisonia maculata</i> , V		386.2
Squatter pigeon (southern), <i>Geophaps scripta scripta</i> , V		113.6
Koala, <i>Phascolarctos cinereus</i> , E		TBA
Greater glider, (southern and central) <i>Petauroides volans</i>		38.6

Adapted from Table 6-25, EIS Chapter 6 (Terrestrial Ecology).

* Significant residual impacts were calculated based on certified mapping amendments approved by the Queensland Herbarium on 8 August 2024.

** The four species that are MSES Protected wildlife habitat are also MNES listed threatened species. See the assessment of MNES in [section 6.17](#).

6.8.4.1 Proposed offsets

MSES offsets were assessed under the Queensland environmental offsets framework. The *Environmental Offsets Act 2014* (EO Act) effectively restricts the state from imposing an offset condition if the same, or substantially the same, impact has been assessed under the EPBC Act. As the EIS for the project was accredited under the Bilateral Agreement, s.15 of the EO Act applies.

The EIS presented an Offset Strategy that provides basic details on the predicted significant residual impacts for MSES in the impact area and the estimated potential offset areas for acquitting those impacts. Indicative offset liabilities for MSES offsets were based on the offset ratios of the Queensland Environmental Offsets Policy v1.3 2017. However, the proposed offset

for connectivity areas has incorrectly used the ratio of 4:1. The offset liability for this MSES is a 1:1 ratio and must be composed of regrowth vegetation.

The proponent proposes direct land-based offsets as their offset delivery mechanism. There were no field surveys of potential offset sites and associated habitat quality assessments for MSES. The Offset Strategy provided habitat quality survey data for locations only within the impact area that are associated with impacts to MNES. Overall habitat quality scores for the four listed threatened species (also recognised as the MSES for protected wildlife habitat) – ornamental snake, squatter pigeon, koala and greater glider – and one threatened ecological community, Brigalow TEC, were generally moderate reflecting historical land clearing and fragmentation, current grazing land use, the high cover of pest plants and low densities of large trees and coarse woody debris.

Offset delivery is proposed to align with a staged approach such that stage 1 offsets acquit impacts associated with the construction phase and stage 2 offsets acquit operational impacts. Habitat quality assessments for the impact area and offset area are proposed to be undertaken at a later date post-approval of the EIS. An Offset Area Management Plan (OAMP) has been committed to be developed prior to construction. It would require assessment and approval from DCCEE in relation to MNES and from DETSI in relation to MSES.

The Offset Strategy provides some preliminary measures that aim to deliver a conservation outcome in order to satisfy requirements of MNES in the Commonwealth Offsets Policy 2012. However, no equivalent assessment was provided for MSES in relation to the Queensland Environmental Offsets Policy 2014.

A desktop survey of four potential offset properties that are owned by the proponent stated the offset availability for the MSES regulated vegetation classes of endangered, of concern, wetland and watercourse, and for the four MNES listed threatened species and one TEC. A combination of using the four offset properties indicated three of the four MSES values could be acquitted. The availability of regulated vegetation – wetland (RE 11.3.27f) is yet to be confirmed on those properties or on five additional properties. Additionally, it is noted that landholder negotiations have yet to commence and there is a risk that an identified offset property may not be subject to landholder agreement.

I consider that the EIS has largely addressed the TOR requirement for MSES offsets to be consistent with the Queensland Environmental Offsets Policy. However, I note that the offset assessment is preliminary, high-level and would require significant detail to be provided in a subsequent OAMP in order to satisfy the requirements of the Queensland environmental offsets framework.

I recommend that draft EA conditions J1 to J9 in [Appendix A](#) of this assessment report, addressing significant residual impacts to MSES, are applied to the environmental authority.

6.9 Air quality

The EIS adequately described the existing air environment for the project and the surrounding region in EIS Chapter 11 (Air Quality and Greenhouse Gas) and EIS Appendix H-1 (Air Quality Technical Report). All potential sources of air emissions from the project, including point, diffuse and, fugitive emission sources, were identified as required by the TOR. The emissions inventory provided in the EIS was satisfactory and included a description of the characteristics of contaminants or materials likely to be released. Appropriate modelling was undertaken to assess contaminant dispersal and dust deposition from the project, in accordance with the TOR. The EIS also identified the relevant air quality objectives from Schedule 1 of the EP Regulation. For the existing SRM, these objectives relate to indicators for total suspended particles,

particulate matter with an aerodynamic diameter of 10 micrometres or less (PM₁₀) and 2.5 micrometre or less (PM_{2.5}), and dust deposition.

The primary pollutant of concern during construction is dust, which is expected to be generated by heavy vehicle movements, land clearing, and wind erosion. However, as the construction of the mine entry portal, conveyor, and CHPP would occur within already disturbed areas of the existing SRM ML, the dust generated by these activities is predicted in the EIS to be minimal compared to other localised activities or the existing SRM open-pit operations.

During project operations, the key sources of dust emissions are predicted to be associated with the material handling and coal processing at the proposed on-site CHPP, as well as the transport of any excess coal via haul trucks to the neighbouring SRM CHPP for processing.

In response to EIS submissions, the proponent compared the dust emissions from the project to that of the existing mines— SRM, Peak Downs Mine and Lake Vermont Mine. I consider the modelling presented adequate to broadly assess the potential impacts to nearby sensitive receptors. The EIS did not explicitly model cumulative impacts during the construction phase; however, I consider this acceptable due to the relatively low risk associated with construction-related activities when compared to existing operational sources.

The air quality modelling presented in the EIS was adequate to assess potential impacts on the health and wellbeing of people in the surrounding area. As required by the TOR, the potential impacts were assessed in accordance with relevant guidelines, the Environmental Protection (Air) Policy 2019 (EPP (Air)), EP Regulation, and the National Environmental Protection (Ambient Air Quality) Measure. The EIS also adequately considered the sensitivity and assimilative capacity of the receiving environment. The modelling showed that air quality objectives would generally be met at all seven assessed sensitive receptors located off-site. Modelling for the project in isolation predicted compliance with all air quality objectives. However, potential concerns were identified for the closest receptors (Saraji Homestead 2 and Saraji Homestead 3) when considering background, cumulative and project specific impacts combined. The unmitigated cumulative impact assessment indicated exceedances of EPP (Air) objectives at the sensitive receptors.

The modelling was generally adequate for informing the development of management measures to meet air quality objectives. The cumulative assessment highlighted that, during adverse weather conditions, additional dust management strategies (i.e., more than business as usual) may occasionally be required to manage project-related dust impacts.

Section 6.2 of Appendix H-1 (Table 19) presents the proposed mitigation measures to reduce dust emissions. The key mitigation measures include:

- minimising vehicle speed on unsealed roads
- limiting vehicle movement and dozer activities between sites (CHPP, stockpiles and construction sites)
- watering haul roads, exposed areas and stockpiles as required
- transporting ROM coal by conveyor from the mine portal to the proposed on-site CHPP
- reducing dumping of ROM coal at the existing SRM ROM dump
- adhering strictly to plant and equipment maintenance schedules and promptly addressing any underperformance of dust control measures
- implementing additional dust management strategies during adverse conditions (for example during dry windy conditions) or when real time monitoring suggests that dust impacts at nearby sensitive receptors (Saraji Homestead 2 and Saraji Homestead 3).

- progressively revegetating topsoil stockpiles.

In addition, the EIS has committed to developing and implementing an Air Management Plan. This would include an air quality monitoring program, which would feature an on-site continuous dust monitoring station at the CHPP (for PM₁₀ only).

The EIS states in various sections that routine licensed monitoring requirements are unnecessary, and that detailed conditions may be developed post-EIS. Appendix H-1 (Air Quality Technical Report) proposes that a complaints-based dust monitoring program would suffice. The rationale provided, centres on existing co-existence agreements between the proponent and the private landholders at Saraji Homestead 2 and Saraji Homestead 3, and that Meadowbrook Homestead has been vacated. The EIS indicates that discussions have also been held between the proponent and the private landholders at Saraji Homestead 1. Given the EIS identified the potential for exceedances of health-based air quality guidelines at some of these sensitive receptors, I consider a complaints-based dust monitoring program, by itself, would be insufficient.

I recommend an ambient air monitoring program of dust deposition and continuous PM₁₀ and PM_{2.5} monitoring with compliance-based conditions. To ensure these mitigation measures are enforceable, I recommend that draft EA conditions B6 and B13 in [Appendix A](#) of this assessment report be applied to the EA.

6.9.1 Greenhouse gas emissions

The EIS addressed the greenhouse gas (GHG) emissions component of the final 2017 TOR, which largely predates more contemporary GHG assessment methodology expectations for the EIS. The EIS provided estimates of Scope 1, 2 and 3 emissions for the life of the project and broadly committed to complying with the Safeguard Mechanism in all respects. The Scope 1 emissions were estimated on the assumptions that all drainage gas would be flared. Total emissions over the 20-year period were estimated to be 18Mt CO₂-e for Scope 1 and 2, and 437Mt for Scope 3.

The amended EIS included an adjusted emission inventory but did not account for vegetation clearing emissions or provide sufficient supporting information, such as a gas contour map, to justify the estimates of fugitive emissions. For Scope 2 emissions, the EIS used a Scope 2 emissions factor of 0 kg CO₂-e/kWh and estimated zero lifetime Scope 2 emissions, as they expect to have eliminated these emissions by 2027 with renewable power purchase agreements with CleanCo. However, the EIS did not address the evidence requirements for the use of renewable power, as outlined in section 7.4(5) of the National Greenhouse and Energy Reporting (NGER) Measurement Determination 2008.

During the public submission of the EIS, six submissions were received relating to GHG emissions and climate change. The submissions raised concerns that the project's GHG emissions could contribute to climate change impacts impinging on rights under the *Human Rights Act 2019* (HR Act). To assist in addressing these concerns, DETSI requested that the proponent develop a site-specific GHG abatement plan in keeping with the current GHG Emissions guideline, to provide details of GHG emissions and abatement measures, despite it not being a specific requirement of the dated TOR. The decision to request an abatement plan was also consistent with my human rights assessment which is further discussed in [Appendix D](#) of this assessment report.

In response, the EIS provided an overarching, corporate-wide BHP decarbonisation plan rather than a site-specific detailed plan with project-specific Scope 1 emission reduction targets,

stating that DETSI's GHG Emissions guideline abatement plan requirements duplicate the Australian Safeguard Mechanism requirements. While DETSI acknowledges that the operational Scope 1 emissions from the project would be subject to the Safeguard Mechanism, this reporting emissions scheme does not provide all information required to inform assessment under the EP Act and HR Act. It is also unclear how the project would contribute to Queensland's emission reduction targets, given that carbon offsets generated under the BHP-wide emissions abatement plan in other state/territory jurisdictions would not be counted as a contribution to Queensland's emissions reduction under the current carbon accounting framework. Further information on the project's estimated baseline profile, and emission reduction measures would enable the Queensland Government to better understand how project environmental and human rights impacts would be minimised.

I consider that the proponent's choice of a broad-brush corporate-level plan fails to sufficiently detail project emissions and abatement measures or demonstrate a hierarchy approach for reducing impacts to the greatest extent practicable. It also fails to evaluate the availability of carbon offsets in the market and the source of carbon credits within Queensland, posing risks to the project's viability as it does not provide certainty that the excess emissions can be offset.

To ensure greenhouse gas mitigation measures are suitably addressed and enforceable, I recommend that the following requirements are applied to the EA:

- Require the decarbonisation plan be updated in accordance with the *Guideline Greenhouse Gas Emissions* (DESI 2024), prior to the commencement of the project.
- The updated plan is to include:
 - an estimate of site-specific Scope 1 emission reduction targets in accordance with the Safeguard Mechanism
 - a program to regularly review and update the plan to capture the latest technological developments
 - a detailed description to demonstrate the project would have access to sufficient offsets within Queensland.
- Address the evidence requirements for the use of renewable power to reduce Scope 2 emissions, as outlined in section 7.4(5) of the NGER Measurement Determination 2008.

The EIS did describe how gas flaring would be used as an abatement mechanism during the commissioning and operational stages of the project and assessed the potential mitigation of the flaring. The EIS Appendix P (Draft Decarbonation Plan) stated that flaring would occur when it is feasible, safe and technically practical; however, did not commit to flaring in Appendix O-1 (Summary of commitments) within the EIS. If flaring is not implemented, DETSI calculated that the direct venting of drainage gas would increase the lifetime Scope 1 emissions significantly from 18 to approximately 46.7Mt CO₂-e.

I recommend imposing a condition to require a Drainage Gas Management Plan be developed by a suitably qualified person and implemented. The Drainage Gas Management Plan must ensure that:

- flaring is implemented for the lifetime of the project as a minimum abatement measure for drainage gas destruction
- enclosed flares are prioritised where practicable due to their higher destruction efficiency
- flare downtime is minimized to reduce methane venting through measures such as self-ignition functionality and a rectification program to address potential self-ignition failures
- methane leakage is minimised through measures such as a periodic leak detection and

- repair program
- a review program is established to reassess the Gas Drainage Management Plan every two years to ensure the implementation of best available practices for drainage gas abatement, including power generation where feasible.

To implement those measures, I recommend that draft EA conditions B16 to B22 in [Appendix A](#) of this assessment report are applied to the EA.

6.10 Noise and vibration

The EIS adequately identified all potential sources of noise and vibration from the project. As required by the TOR, this included low-frequency noise and cumulative impacts. The project noise assessment was prepared in consideration of the Environmental Protection (Noise) Policy 2019 (EPP (Noise)); the model conditions contained in DETSI's Guideline *Model Mining Conditions* (ESR/2016/1936) (DETSI 2024); and the World Health Organisation's (WHO) *Guidelines for Community Noise* (Berglund et al. 1999).

I note that vibration is not discussed in the EIS because blasting is not proposed as part of the project. The EIS states that construction and operation are not expected to produce perceptible levels of vibration at nearby sensitive receptors.

The EIS adequately identified seven sensitive receptors surrounding the project site. Lake Vermont and Meadowbrook Homesteads are the closest sensitive receptors, located within the project site. Kyewong Homestead and Saraji Homesteads 2 and 3 are located 1km from the site, and Saraji Homestead 1 and Tay Glen Homestead are located 4km and 7km west of the project site, respectively. Given that these receptors are residential dwellings, the EIS identified *human health and wellbeing, including the ability to sleep*, as environmental values of the acoustic environment under the EPP Noise that may be impacted by the project.

Unattended noise monitoring was undertaken by SLR Consulting in 2011 and by AECOM in 2016 for six of the seven sensitive receptors. The Rating Background Levels for Saraji Homestead 2 are taken by the EIS to also apply to Saraji Homestead 3, as these receptors are located approximately 550m apart. I consider the noise monitoring presented adequate, to broadly assess the potential impacts to sensitive receptors. Background noise levels were predominantly influenced by industrial noise impacts from mining operations including Saraji Coal Mine and nearby Lake Vermont Mine.

The EIS proposes adequate project specific noise criteria which have been developed with the goal of protecting the amenity of surrounding areas, as well as the health and wellbeing of nearby residents. The external noise criteria are consistent with levels recommended in the EPP (Noise) acoustic quality objectives and the WHO *Guidelines for Community Noise* (Berglund et al. 1999).

The noise modelling reported in the EIS was adequate for assessing potential noise impacts. The acoustic model assessed noise emissions from mining plant and equipment at representative locations within mine landforms under neutral and worst-case weather conditions. The model adopted five assessment scenarios, spanning the life of the mine from Year 1 to Year 22. These scenarios reflect key phases in the construction and operation of the project.

The project is close to several existing and proposed mining operations which have the potential to contribute to noise levels experienced at sensitive receptors. The EIS considered

cumulative impacts and concluded that the overall increase in operational mine noise levels as a result of the project is predicted to be “clearly perceptible” to “twice as loud” (5-10 decibel (dB) increase) at Saraji Homesteads 2 and 3, “just perceptible” (3dB increase) at the Meadowbrook Homestead, and “not perceptible” to most people (up to 2dB increase) at the other receptors. Both Saraji Homesteads 2 and 3 have co-existence agreements currently in place with BMA and Meadowbrook Homestead is vacant but owned by BMA. The increase in noise levels associated with increased road traffic on public roads and rail movement on the local rail network is not predicted to be perceptible to most people, with the exception of Saraji Road during Year 1 when the increase would be “just perceptible” (3dB increase).

The EIS adequately assessed low frequency noise in accordance with the *Guideline for the Assessment of Low Frequency Noise* (Roberts 2004). The initial screening assessment detailed in this guideline was adopted, with the EIS further assuming a 5dB reduction through open windows to obtain the equivalent external noise criterion. The modelling and assessment predicted that the project would generate low frequency noise. Predicted noise levels are anticipated to comply with the conditions of the initial low frequency noise assessment at three of the sensitive receptors. There is a likelihood of increased low frequency noise annoyance at the remaining four receptors.

Mitigation and management measures proposed for the project consist of standard noise control measures, community and complaint management, monitoring, and responding to noise exceedances with corrective actions. The EIS states that the proponent would also consider the current or pending agreements with potentially affected landholders when finalising mitigation measures prior to the construction phase. During the public notification period of the EIS, DETSI advised that, despite agreements with landholders, the proponent is still required to take all reasonable actions to minimise environmental nuisance and harm associated with noise. DETSI further recommended that the proponent develop a Noise Management Plan with specific noise triggers and mitigation responses. In response, the amended EIS Appendix O-1 (Summary of commitments) includes a commitment to develop and implement a Noise Management Plan.

To ensure that the mitigation measures and limits for noise and vibration are enforceable, I further recommend that draft EA conditions C1 to C7 in [Appendix A](#) of this assessment report are included in the EA for the project.

6.11 Waste

The EIS adequately identified the main waste streams that would be produced by the project during both construction and operation.

An estimated 150Mt ROM coal is proposed to be extracted over the 20-year mine life, with an estimated 110Mt product coal. The EIS predicted that 5t of waste rock would be produced during construction and 40Mt of rejects from the CHPP would be produced over the life of mine (LOM). The coal rejects would be transported to the Bauhinia Pit at the SRM for disposal. Table 6 Wastes produced over the life of mine, summarises the predicted waste streams and volumes for the LOM.

Table 6 Wastes produced over the life of mine

Waste stream	Construction (total)	Operation (per annum)	Decommissioning (total)
Waste rock	5t		
Rejects		40Mt (over LOM)	
Mine affected water			
Wastewater (treated effluent and sludge)	25 megalitre effluent and 5,000t sludge	8 megalitre effluent and 2t sludge	
Tyres	2,000t	480t	
Batteries	4t		
Electrical equipment	<1t	<1t	3t
Waste oil	12t	110 kilolitre	130t
Waste oil containers	130t	20t	
Hydrocarbon contaminated waste	24t	440t	440t
Grease trap	2.5t	35 kilolitre	
Oil sludge absorbent and filters		110t	
Scrap metals	20t	8.5t	20t
Paints and resins	2t	3t	3t
Timber pallets	200t	10t	
General waste	160t	3,750t	
Recyclable waste	8t	1,660m ³	
Concrete bricks	35t		3t

Adapted from EIS Chapter 10 (Geochemistry and Mine Waste) and EIS Chapter 15 (Waste).

The EIS also adequately described methods for the disposal of wastes and proposed satisfactory mitigation measures to avoid or minimise impacts from waste disposal. The following subsections expand on those methods and mitigation measures. To ensure the proper management of wastes, I recommend the conditions D1 to D8 in [Appendix A](#) of this assessment report be applied to the draft EA.

6.11.1 Waste rock

There are no waste rock dumps planned for this project as any construction waste rock would be immediately transported to the existing SRM. The EIS is proposing to utilise the existing open-cut pit from SRM as the access portal for the underground mining operation, minimising the waste rock being generated. The portal waste rock is estimated to be 5t of mudstone, siltstone and fine-grained sandstone. Waste rock would be temporarily stored within existing disturbance areas that are categorised as overburden dumps and active mining areas. Where geotechnically suitable, the waste rock would be used for bulk fill, road sub-base and laydown areas. Waste that is not considered suitable would be disposed of within the in-pit spoil dump in Bauhinia pit, as part of the existing SRM waste management system.

The EIS included adequate preliminary sampling and analysis to assess the composition of waste rock. It also included a commitment to undertake more detailed sampling and analysis of

waste rock as overburden removal and mining progress. Preliminary analysis indicated that overburden from the sandstone layer is likely to have a high factor of safety and very low probability of acid generation. It is expected to produce alkaline, low salinity runoff once it is placed in the pit.

The mine operator will need to regularly and frequently review the waste rock analyses to determine whether the disposal plan should be amended during operations and mine closure.

6.11.2 Rejects

Coal rejects from the CHPP would include dense medium coarse rejects, fine rejects, reflux classifier rejects and dewatered flotation tailings. These materials are expected to generate pH-neutral to mildly alkaline, low salinity runoff when exposed to the surface. The geochemistry study showed low sulphur concentration in coarse reject samples. It also showed that rejects classified as having potential acid forming properties make up less than 10% of the total reject material.

During the public submission period, concerns were raised regarding the high levels of selenium in the coal rejects. In response, the EIS included further work that revealed that 15 out of 83 samples contained leachable selenium concentrations, between 0.05 to 0.08mg/L, exceeding the NEPM guideline level of 0.02mg/L, with one outlier of 0.16mg/L from the H15 coal seam. In response to the submission, the proponent explained that ongoing operational geochemical characterisation of mineral waste materials will be undertaken ahead of mining to confirm the geochemical characteristics. In addition, the EIS explained that the coal rejects would be mixed, which would dilute elevated concentrations of soluble metals. Considering the homogenisation of coarse rejects, the EIS concluded that environmental risks are considered low.

6.11.3 Mine affected water

The proposed management of mine affected water is addressed in [section 6.6](#) of this assessment report.

6.11.4 Wastewater and treated effluent

The EIS adequately addressed the expected production of 180L per day effluent based on a workforce of 125 equivalent persons. There would be 500 full time employees; however, based on a 4-week roster rotation, an average of 125 workers is expected at any one time. The effluent would be treated to eliminate residual pathogens to achieve a Class B standard. The EIS is proposing to discharge the treated effluent from STP and wastewater treatment plant into the PWD. As discussed in [section 6.6](#) of this assessment report, MAW from the PWD would be reused to supply the CHPP process and for dust suppression in active mining areas.

To ensure that the water quality of the treated effluent meets the Class B standards, I recommend that the quality and quantity of the water being pumped into the PWD, from the STP, be monitored accordingly. This is reflected in draft EA conditions H1 to H10 in [Appendix A](#) of this assessment report.

The proponent indicated that they prefer to have some flexibility for the location of the STP, thus the EIS has been silent on the actual placement of the STP. The proponent has no plans to use the treated wastewater for irrigation. Additionally, the waste sludge is proposed to be pumped to storage tanks and transported offsite by a licenced contractor to a licenced disposal facility.

6.11.5 Plant and equipment waste

Mining operations would produce a variety of wastes from the maintenance of plant and equipment, including vehicles. Some of those wastes (such as tyres, batteries, and used oil) are regulated wastes listed in Schedule 9 of the EP Regulation. The proponent would seek to amend the existing SRM approval to enable disposal of 480t per annum scrap tyres into the SRM pits.

The EIS proposed a waste management system that would identify all waste types, track regulated wastes, and use licensed waste transport contractors for offsite disposal of regulated wastes at an appropriately licensed facility. The proposed waste management system for the project is adequate.

6.11.6 General waste

The general waste streams would be managed either onsite or through waste management facilities available in the region, except for tyres. These would be transported to SRM spoil dumps under the existing SRM EA and within the current authorised extent. The EIS states that as the project is located within the IRC LGA, they would follow IRC's policies to manage their waste stream. The EIS is proposing to include a waste management plan which would detail the locations of regulated waste facilities and offsite recycling facilities. They are committed to include the transportation routes for each waste stream and the operational capacities for the types of waste facilities.

6.12 Hazards and safety

The EIS adequately addressed the TOR regarding hazards and safety. Issues addressed in the EIS included:

- identification of potential hazards, particularly those that might impact on human health and safety
- hazard analysis and risk assessment in accordance with relevant standards and guidelines
- hazards and risks associated with climate change
- extreme weather and flooding, including events with at least a 1% annual exceedance probability
- natural disasters, such as bush fires
- factors that might promote the breeding of pest animals and disease vectors
- storage, transportation and use of hazardous materials, including explosives.

The preliminary risk assessment included in the EIS adequately identified and assessed 21 unique risks. After mitigation controls were applied, two extreme residual risks and four high residual risks were identified. The extreme risks are as follows:

- traffic incidents including collision with another vehicle, person or fauna
- mine collapse.

The high risks are as follows:

- underground fire
- natural disasters (e.g. cyclone and surface flooding)
- mine gas explosion
- mine gas asphyxiation/poisoning.

The EIS considered the impacts of potential natural hazards, particularly flooding and bushfire. It stated that natural hazards and risks would be managed in accordance with an Emergency Management Plan, engineering procedures, and relevant Australian Standards to ensure compliance with the legislative requirements. The EIS also considered the impact of climate change on natural hazards, with the greatest identified potential impacts being the increased risk of flooding and heatwave, and the potential for increased soil erosion due to an increase in rainfall intensity.

The EIS proposed adequate measures to address all hazards and safety matters, including:

- reducing the risk of land contamination from project activities through design and construction of the facilities and post-mining rehabilitation
- reducing the risk of mine collapse through geotechnical investigation, design, management planning, controls and surveillance
- storing of waste hydrocarbons and miscellaneous chemicals in separate sealed and bunded areas to prevent soil contamination
- handling of waste hydrocarbons and miscellaneous chemicals in accordance with standard operating procedures to minimise potential for spillage and leakage
- training of key staff in spills prevention and clean up
- provision of oil spill clean-up kits at strategic locations as part of site emergency planning
- using screens, enclosures, and/or an exclusion zone around the work area
- controlling fine coal material using engineering controls, such as the use of water sprays, and enclosing the crushing area
- gas monitoring systems and appropriate design of gas ventilation systems
- developing a detailed standard for emergency preparedness and response
- developing an Emergency Response Management Incident Plan—in consultation with the emergency services—addressing major emergencies and incidents that could impact upon surrounding land uses. This would include reference to disaster management techniques and the following preparedness measures including emergency response plans:
 - first response and mine rescue plan
 - risk assessments
 - detailed evacuation and site access plans
 - emergency drills and responses
 - fire management.

6.13 Cultural heritage

6.13.1 Aboriginal cultural heritage

The EIS adequately addressed the TOR with respect to Indigenous cultural heritage. A new CHMP for the project was not needed due to an existing agreement with the Barada Barna People, which has been in place since 28 October 2011. This agreement triggered an exemption under s. 86 of the *Aboriginal Cultural Heritage Act 2003*. Currently, there are seven CHMP agreements between the proponent and the Barada Barna People, with CLH012020 covering the entirety of the proposed development footprint. A desktop assessment identified 54 Indigenous heritage sites across the project site. There is potential for additional sites to be identified, particularly along the watercourse margins. Potential impacts to Indigenous cultural heritage sites are proposed to be managed under the existing CHMP (CLH012020) in collaboration with the Barada Barna People.

Public submissions raised concerns about potential impacts on Indigenous cultural heritage sites due to undermining of watercourses. Subsidence could potentially impact heritage sites by inducing surface cracking and erosion within waterways. However, I consider that the project has adequately addressed subsidence-induced erosion risks, as outlined in EIS Appendix K-2 (Subsidence Management Plan). Further, the EIS includes a commitment to operate in accordance with the *Best Practice Erosion & Sediment Control guidelines* (IECA 2008).

In EIS Appendix O-1 (Summary of commitments), the proponent also committed to providing cultural awareness training to their staff, installing signage to recognise and promote awareness of cultural heritage values and implementing an SMP to monitor and mitigate impacts from subsidence.

6.13.2 Non-Indigenous cultural heritage

A search of the Queensland Heritage Register found no listing of any heritage places within the project site or adjacent to the project site. The assessment of historical records has identified a potential historical site, a camp established by explorer Leichhardt on 11 February 1845. The risk of impacts from the project is considered low, as the site is located within the previously disturbed SRM footprint.

Field surveys undertaken for the EIS also found no places of historical or archaeological significance within the boundaries of the project site. Nonetheless, there remained the potential for unidentified sub-surface deposits to exist across the area.

If any places or items of potential historical or archaeological significance are discovered during construction, the EIS proposed that the following 'stop works' procedures to be implemented: cease all work and secure the site; avoid further disturbance of the material or site; report the findings to DETSI as required under the *Queensland Heritage Act 1992*.

To ensure staff are prepared, site personnel would receive training on how to identify historical cultural heritage items and instructions on the steps to take if any material is discovered.

EIS Appendix O-1 (Summary of commitments) outlined the proponent commitments and procedures in case of unexpected items of cultural heritage significance.

6.14 Social

The EIS included a social impact assessment (SIA) for the project that was consistent with the requirements of the SSRC Act and the Coordinator-General's SIA guideline (DSDIP 2025). The SIA was developed in consultation with the Office of the Coordinator-General, Department of State Development, Infrastructure and Planning.

The Coordinator-General has undertaken an evaluation of the social impacts of the project, which is available at: [Social impact assessments for resource projects | State Development and Infrastructure](#).

As part of the evaluation, the Coordinator-General decided to state conditions under section 11 of the SSRC Act. Further, the Coordinator-General decided, under section 12 of the SSRC Act, to nominate the project as a large resource project for which the 100 per cent fly-in, fly-out prohibition and anti-discrimination provisions of the SSRC Act apply to the project's construction workforce. These decisions have been considered in the Coordinator-General's evaluation of the project.

The SIA has adequately addressed the impacts, and provided mitigation measures, to address the five key matters as defined by the SIA Guideline:

- community and stakeholder engagement
- workforce management
- housing and accommodation
- local business and industry procurement
- health and community wellbeing.

6.14.1 Key Matters

The project involves development of a greenfield single-seam underground coal mine and supporting infrastructure. The project is located approximately 30km north of Dysart and approximately 60km south of Moranbah in the Bowen Basin, in Central Queensland. Located in the IRCLGA and is approximately 170km southwest of Mackay.

In line with SSRC Act definitions, eight communities are defined as nearby regional communities (NRCs), with Dysart, Middlemount and Moranbah within a 1 hour driving distance, and therefore able to provide local workforce to the project. Dysart and Moranbah are considered to be the key communities with the capacity to support the project, with Dysart likely to experience the majority of social impacts.

The town of Dysart was originally developed to accommodate the workers at the SRM. Dysart was established in 1973 by the Utah Development Company as a purpose-built mining community to support operation of the Saraji and Norwich Park Mines (both subsequently owned by BMA).

BMA has a key role and responsibility in maintaining the sustainability of Dysart. The housing market in Dysart remains heavily influenced by BMA who own 528 houses in the town. Access to BMA owned housing in Dysart and Moranbah would be a key element for the project to support an operational local workforce of 40% without undue impact on the local housing market. The SIA confirms BMA would provide local housing for operational workers who are existing local residents (and may require new housing arrangements) or who wish to move locally.

The Barada Barna People are the native title holders for the general project region. Native title has been extinguished over the proposed mine area; however, BMA is negotiating with the Barada Barna People for a portfolio wide comprehensive Indigenous Land Use Agreement (ILUA). The project site will fall within the proposed agreement area. BMA will develop a Cultural Heritage Management Plan (CHMP) in consultation with the Barada Barna Aboriginal Corporation (BBAC). SIA consultation with the Barada Barna People did not identify any specific impacts on cultural or social values, with the exception that they will be unable to access parts of the site for workplace health and safety reasons. However, BMA has committed to support Barada Barna People to seek employment throughout the project's lifespan.

The SIA has adequately outlined the community consultation and engagement undertaken to inform the impact assessment. The consultation included all relevant stakeholders and fostered collaborative relationships with council, Traditional Owners, local industry groups and service providers. This initial engagement occurred in 2018-19 when the SIA was being prepared. The EIS was publicly notified in July 2021 and submissions of relevance to the SIA included those from IRC, Department of Senior Disability Services and Aboriginal and Torres Strait Islander Partnerships (now Department of Communities, Child Safety and Disability Services), Queensland Police Service and Queensland Fire and Emergency Services. Following public notification there was further consultation on the project in 2022-23 with key stakeholders (primarily IRC). BMA undertakes regular engagement with residents, Traditional Owners, community organisations and other stakeholders in the Isaac LGA. The updated SIA has been

informed by the Smart Transformation Advisory Councils, supported by BMA, representing a broad range of community, agency, business and industry representatives. To ensure that ongoing community engagement informs the proactive management and monitoring of potential impacts is undertaken during both construction and operational phases of the project, the Coordinator-General requires the proponent to prepare an updated Community and Stakeholder Engagement Plan prior to the commencement of construction.

The SIA has identified the intended workforce profile. Project construction will be undertaken over a 2-year period and require up to 1000 construction workers, which are anticipated to work on a 12-hour shift, 21 days on, 7 days off roster. Operations are estimated to last for 22 years and require up to 406 full time equivalents. BMA has set a local employment target of 10% during construction and 40% during operation. The SIA expects the majority of the operational workforce to be sourced from local and regional communities, with an approximate 50/50 split between local (Dysart and Moranbah) and regional (other NRCs and close regional centres) employment. Additionally, BMA aims to have an overall target of 8% indigenous employment and a portfolio wide target of 40% female staff. The latter is a commitment across all operations of BMA and is regarded as industry-leading in the resources sector. Both local and regional communities are well-versed in mining operations and are capable of supplying the required workforce. The Coordinator-General will require the development of an updated Workforce Management Plan, which addresses potential competitive risks for workforce with other local industries and associated mitigation measures to be monitored and adjusted where necessary.

The SIA has adequately identified workforce accommodation for the construction and operational workforce for the project. BMA's current SRM is recognised as primarily a 'residential' mine with many of its workers residing in Dysart and Moranbah. There is an expectation with the new Saraji East Mine that this arrangement would continue with access to BMA stock of local housing. The workforce, for operations, would be accommodated either in an existing workers' accommodation village or in company housing in Dysart or Moranbah. People who live more than an hour's drive from the project would be required to stay in a workforce accommodation village during their rostered on-shifts. BMA is committed to the continuation of a rehoming assistance program for new workforce to be resettled in Dysart or Moranbah if they choose to do so. Given the uncertainty of when the project would commence construction, the Coordinator-General requires the proponent to update the Housing and Accommodation Plan prior to construction, with a particular investigation into the status of the Dysart housing market and current workforce residential preferences.

The SIA has adequately identified strategies to enable local business and industry involvement, including additional opportunities for Indigenous owned businesses throughout all stages of the projects. The SIA included a profile of the skills and services needed for the project, including an analysis of local and regional supplier capability and capacity relevant to the project, existing local procurement opportunities and an assessment of potential social impacts on local and regional suppliers. The SIA states that the extensive mining activities in the region mean there are well established networks and supply chains for project procurement. This would likely result in overall benefits for local businesses.

BMA has an extensive supplier network in the region from their other operations. BMA's Local Buy Register, which has 209 participating businesses, is an existing register that lists the services and goods that can be sourced in the region. The existing SRM's supplier base engages 142 businesses from across Isaac (43%), Central Highlands (10%) and Mackay LGAs (43%). The SIA states that BMA complies with the Queensland Resources and Energy Sector Code of Practice for Local Content 2013 (the Code), which includes the 'full, fair and reasonable' opportunity for local businesses. The SIA states that the project would continue to comply with the Code and uphold the 'full, fair and reasonable' principle. Although the project is anticipated

to deliver benefits to local and regional businesses, the SIA indicates that project demands may drive skill shortages in the region. The SIA also states that several other mines are proposed for construction within a similar timeframe to the project. Should the projects all align in construction periods, there would be an even greater labour draw, which would significantly impact local business recruitment.

The SIA states that BMA's Local Buying Foundation will be important in offsetting these impacts by developing capacity of local businesses to diversify and support other industries. The Local Buying Foundation focuses on workforce and economic development projects, regional promotion awareness, industry training analysis and education and skills development for businesses. To ensure this, the Coordinator-General requires the proponent to develop an updated Local Business and Industry Procurement Plan (LBIP) as part of an updated Social Impact Management Plan (SIMP) for both the construction and operational phases of the project. The updated LBIP will be required to review identified local businesses, identify potential for labour draw and competition with other essential industries in the region and propose appropriate management measures.

The SIA has adequately identified the impacts and opportunities for community health and wellbeing, including emergency services, health services, childcare services and road safety. The SIA notes that the increase in workforce, both local and transient, is likely to have an impact on all these matters. In particular, local childcare centres in Dysart and Moranbah have limited capacity, and local General Practitioners experience high demand. Additionally, increased commuting from Dysart and Moranbah is likely to impact road safety and maintenance intervals. The SIA also notes that given the cultural identity of Dysart as a mining town, the project is likely to have a positive and enduring benefit to the local social cohesion, by providing employment, workforce opportunities and future perspectives for associated local industry. To ensure any impacts are monitored consistently, the Coordinator-General requires the proponent to update the Health and Community Wellbeing Plan ensuring that management measures identified by the proponent remain adequate and address real community needs.

The Coordinator-General is satisfied the potential social impacts of the project can be adequately managed and minimised and has conditioned the proponent that all proposed management measures and proponent commitments are captured in the SIMP and implemented accordingly. If the stated outcomes are not achieved, the SIMP is to be amended to appropriately mitigate impacts. The Coordinator-General requires that conditions 1 to 8 in [Appendix B](#) are applied to the project to address social impacts.

6.15 Economic

The EIS adequately addressed the TOR with respect to economic impacts of the project on the local and regional area and the state. The economic assessment was in accordance with the Coordinator-General's *Economic impact assessment guideline* (DSDI 2021) employing both regional impact analysis and cost-benefit analysis (CBA) of the construction and operational stages of the project.

The Economic Assessment Area was defined to include the Isaac LGA as the local economy and the Mackay-Isaac-Whitsunday Statistical Area Level 4 (MIW SA4) as the regional economy. The assessment was informed by a detailed economic baseline review, which described the existing economic environment using data from the Australian Bureau of Statistics (ABS) Census (2006, 2011, and 2016), Queensland Government Statistician's Office population projections rebased to 2016, and Queensland Treasury and Trade estimates from 2013. I note that the most recent version of the amended EIS did not include any updates to the economic impact assessment utilising more recent ABS census data.

The regional impact analysis assessed the direct and indirect economic impacts by examining key economic indicators such as output, household incomes, employment, and value added. An input-output modelling approach was used to capture the flow-on effects of the project across the local, regional, and state economies. The estimated economic stimulus from the construction and operation phases of the project on the regional, state and national economies is presented in Table 7 and Table 8.

Table 7 Impacts of construction (total contribution)

	Output (\$)	Household income (\$)	Employment (average yearly contribution (FTE))	Value added (\$)
MIW SA4	\$674.7 M	\$140.3 M	445	\$258.8
Rest of Queensland	\$1,013.7 M	\$213.7 M	719	\$389.6
Rest of Australia	\$185.3 M	\$40.6 M	143	\$72.4

Table 8 Impacts of operation (total contribution)

	Output (\$)	Household income (\$)	Employment (average yearly contribution (FTE))	Value added (\$)
MIW SA4	\$258.8 M	\$1,207.4 M	683	\$2,313.9 M
Rest of Queensland	\$389.6 M	\$658.3 M	407	\$1,122.0 M
Rest of Australia	\$72.4 M	\$809.2 M	508	\$1,352.4 M

In addition to the economic stimulus generated by capital and operating expenditure, the project is anticipated to deliver a range of significant benefits. At the time of the first draft EIS submission in 2019, the substantial export revenues from coal production were estimated to be approximately \$14.9 billion. Based on the royalty rates at the time of the draft EIS submission in 2019, this would result in royalties of around \$1.3 billion, providing a significant revenue stream for the Queensland Government. The project is also expected to create increased employment opportunities within Central Queensland and provide opportunities for suppliers in the region to support both the construction and operational phases of the project, fostering local business growth and strengthening the regional economy.

Adverse economic impacts identified and considered in the assessment included opportunity cost of alternative land use, loss of ecosystem services, tightening of labour markets, short-term worsening of skills shortages in the construction sector, localised inflation and increased burden on local and regional infrastructure (i.e. transport networks). Loss of alternative land uses, such as cattle grazing is estimated to have an annual foregone output of \$0.71 million. Loss of ecosystem services based on 1,261ha of impacts to forestry, woodland, wetland and grassland habitats is estimated to have a value of \$4.20 million per annum.

The CBA quantified the costs and benefits of the project over its lifecycle, presenting results in real dollar values. The analysis considered a range of discount rates and reported key decision

criteria, including net present value (NPV) and benefit-cost ratio (BCR). Results showed positive net benefits under all discount rates, with BCRs between 1.4 at 10% and 1.7 at 4%. Scenario and sensitivity testing, including variations in coal prices, labour costs and environmental offsets, found the NPV to remain positive under all scenarios and discount rates.

The EIS proposes several measures to mitigate potential adverse economic impacts from the project. Appendix O-1 of the EIS includes commitments to promote purchasing opportunities to Local Buy Program registered businesses and delivering training and education programs to upskill the workforce and reduce skill shortages.

From an economic perspective, the project is considered justified with an expected net benefit to regional, state and national economies.

6.16 Transport

The EIS adequately described the total transport task for the project, including supplies, products, and workforce inputs and outputs, during the construction and operational phases of the project. The EIS also adequately assessed the choices for modes of transport that would ensure efficiency and minimise impacts on the community.

Road, rail, sea and air transport modes were considered in the EIS assessment to determine how existing transport infrastructure would be affected by project transport at the local and regional level.

The EIS assessment of potential transport impacts was undertaken in accordance with the following relevant guidelines:

- *Transport—EIS information guideline* (ESR/2020/5310) (DETSI 2024), and
- *Guide to traffic impact assessment (GTIA)* (TMR 2019).

The major mode of transport expected to be impacted by the project is the Queensland road network. The EIS utilised the *Signalised and unsignalised Intersection Design and Research Aid* (Ausroads 2017) to analyse intersection performance and predicted that all intersections, including the new proposed intersection A, are expected to operate within capacity without significant impacts to vehicle delay and queuing.

The traffic on the regional road network is expected to exceed 5% of the background traffic due to the project. Despite this, the assessment concluded that delay and congestion on road links are unlikely to occur, and the network should continue to operate within acceptable Level of Service.

A preliminary pavement impact assessment (PIA) was undertaken to inform the EIS; however, a full PIA is required to determine extent of impacts and appropriate mitigation.

The EIS proposed that mitigation measures would be finalised during the detailed design phase and that the proponent would work with road authorities to confirm the extent of predicted road impacts. It stated that mitigation measures would likely to be in the form of compensation contributions to be agreed between the proponent and the road authority. Further investigations and preparation of plans as required by the GTIA would also be undertaken during detailed design to inform secondary approvals as detailed in the summary of commitments in EIS Appendix O-1 (Summary of commitments) including:

- Pavement Impact Assessment (commitment 83)
- Traffic Management Plan (commitment 84)
- updated Traffic Impact Assessment including a Road Use Management Plan (commitment 85)
- Road Safety Audit (commitment 86).

The Goonyella rail system consists of 477km of track length servicing the coal mining area in the Bowen Basin, carrying coal to several port locations, including Hay Point Coal Terminal and Abbot Point Coal Terminal. Three level crossings are relevant to the project, two existing, one proposed.

The proposed level crossing requires a horizontal alignment shift of Saraji Road to increase short-stacking capacity to meet minimum requirements. Even with this alignment shift, the proposed crossing may still not have sufficient queue length to contain the long vehicles expected during peak hours in Year 3 when the construction phase and operation phase overlap. BMA has proposed the following mitigation measures and highlighted that these would be further considered during the detailed design phase:

- design auxiliary turn lanes on Saraji Road to include appropriate storage lengths considering the potential overflow queue from the level crossing
- where practical stagger shift changeover times to occur at different hours of the day to reduce the number of vehicles using the crossing during peak hour periods
- provide safety education for heavy vehicle drivers in relation to the use of the level crossings during site induction procedures.

The EIS did not assess impacts on rail level crossings in accordance with the Australian Level Crossing Assessment Model (ALCAM). The proponent has committed to arrange for ALCAM assessments to be undertaken by the railway manager (Aurizon) where necessary (as per EIS Appendix O-1 (Summary of commitments)).

TMR and the Office of the National Rail Safety Regulator (ONRSR) advised that new rail level crossings are not generally supported. However, the proposed crossing is within private land as is the rail corridor and is not on a public road. DETSI facilitated discussions between the proponent and TMR during the response to submissions stage, where the proponent provided testimony of their ongoing relationship with the railway manager and expressed confidence in obtaining formal approval for the proposed crossing. In the EIS, the proponent committed to securing an agreement with Aurizon prior to the commencement of the project. If they are unable to secure the agreement, alternative locations would be used to access the existing railway crossings. TMR indicated that they were satisfied with this approach. The proponent would seek to formalise arrangements with the railway manager during the detailed design phase of the project and have committed to engaging with the ONRSR regarding registration of rail infrastructure for the project (as per EIS Appendix O-1 (Summary of commitments)).

Sea transport impacts are expected to be minimal as the coal shipped would be within the approved port and shipping capacity and throughput limits. Air transport of workers would result in up to 15 additional round trips per week; however, the EIS demonstrated that this can be accommodated within the existing capacity of the Moranbah airport. The EIS also assessed project traffic impacts on emergency vehicles and concluded that the project would not impede emergency services operations.

Transport-related approvals for the project are not granted through the EIS process. However, the commitments made by the proponent (80–91) in EIS Appendix O-1 (Summary of

commitments) are required to inform the assessment of secondary approvals by other government regulators. I consider that the information and commitments relating to transport in the EIS are adequate for assessing anticipated transport impacts and associated mitigation.

6.17 Matters of national environmental significance

This section of the EIS assessment report assesses the following requirements:

- a description of the environment
- matters of national environmental significance (MNES) controlling provisions
- feasible alternatives for the project
- summary of the relevant impacts
- measures to avoid, mitigate or manage impacts
- environmental offsets
- recommended conditions of approval.

In accordance with the Bilateral Agreement, this section addresses the matters protected under the EPBC Act and prescribed in s.9 of the EP Regulation. The Bilateral Agreement enables the EIS to meet the impact assessment requirements of both the EP Act and EPBC Act.

In relation to the economic and social matters of the action as required by the TOR, refer to [section 6.14 Social Impact Assessment](#), and [section 6.15 Economic](#) of this assessment report.

This information has been prepared for the Australian Minister for the Environment and Water to help the Minister make an informed decision under s 133 of the EPBC Act about the identified and potential impacts on MNES from the project, whether the project should proceed, and if so, relevant conditions of approval.

6.17.1 Description of the environment

The project is located in the Isaac-Comet Downs sub-region of the northern Brigalow Belt bioregion. The site is predominantly on land zone 4, gently undulating clay plains, mainly vertosols with gilgai microrelief. The site is within the Bowen Basin, an area that contains the largest coal reserves in Australia and is located directly adjacent to the existing SRM. On the eastern boundary is the proposed Lake Vermont Meadowbrook coal mine.

The project is within the Isaac Connors sub-catchment of the Fitzroy Basin. Six ephemeral creeks (Boomerang, Plumtree, Spring, Hughes, One Mile and Phillips creeks) are located within the site and the watercourses run west to east, draining to the Isaac River. The Isaac River joins the Fitzroy River which discharges to the ocean approximately 260km from the site. The aquatic ecosystems associated with the project's watercourses are impacted by current mining and grazing activities and are rated as "moderately disturbed" under the EPP (Water and Wetland Biodiversity) 2020.

The project site of 11,427ha consists largely of grazing land with 8,666ha mapped as non-remnant vegetation, dominated by the exotic grass species Buffel grass, *Cenchrus ciliaris*. Remnant vegetation consists of brigalow woodlands, eucalypt woodlands and riparian vegetation generally associated with the watercourses. Twelve remnant REs are mapped on site, with an additional 10 REs also mapped as HVR.

Within the project site is a smaller project footprint of 3,348ha consisting of the mining area and associated infrastructure. Baseline desktop and field environmental surveys of the site and the adjacent SRM have been undertaken since 2007. The most recent field surveys conducted for the EIS were for the winter and spring seasons of 2016, summer of 2017, and autumn of 2020.

Flora surveys using the Queensland Herbarium methodology and standards have been conducted over 185 sites since 2007. The majority of surveys (70%) undertook quaternary assessments which are used to verify RE mapping and standardly recorded from a vehicle. One threatened flora species was recorded – bluegrass, *Dichanthium setosum*, which was a dominant species within the tussock grassland community RE 11.4.4. King bluegrass, *Dichanthium queenslandicum*, was considered likely to occur in this community as well.

Fauna surveys identified 188 species over the period 2007 to 2020. This comprised 33 mammals, 117 birds, 24 reptiles and 14 amphibians. Eight of these species were exotic.

6.17.2 MNES controlling provisions

The proposed action is to develop and operate an underground coal mine (EPBC 2016/7791). The relevant controlling provisions for the project were determined on 18 November 2016 and are:

- sections 18 and 18A (Listed threatened species and communities)
- section 24D and 24E (A water resource, in relation to coal seam gas development and large coal mining development).

The project has the potential to significantly impact the following environmental values that are covered by the controlling provisions:

- Brigalow TEC – Endangered
- Grassland TEC – Endangered
- ornamental snake, *Denisonia maculata* – Vulnerable
- squatter pigeon (southern), *Geophaps scripta scripta* – Vulnerable
- koala, *Phascolarctos cinereus* – Endangered
- greater glider, *Petauroides volans* – Endangered

6.17.3 Summary of feasible alternatives

This section provides a summary of feasible alternatives to the project identified in the assessment process.

A maximised mine proposal was reduced in size based on the modelled greater adverse impacts from subsidence to watercourses, surface flows and associated riparian vegetation. By comparison, the current proposal was considered by the EIS to have lower capital costs and lesser environmental impacts.

The EIS stated that there is no feasible alternative to the general location of the project, and in particular the underground mine, which is dictated by the location of the target resource – the Dysart Lower Seam – and the proximity to the existing SRM and its supporting infrastructure. The location in the northern portion of the project site largely avoids mining impacts to One Mile and Spring creeks, and Phillips Creek to the south.

The need for new infrastructure has been avoided in many cases by design considerations that use the existing SRM infrastructure such as haul roads, the water pipeline and power network, and disposal of dewatered tailings within the in-pit spoil dumps. Even with the use of the existing CHPP, a new CHPP would still need to be constructed on the project site.

6.17.4 Summary of the project's relevant impacts

The construction, operation, and decommissioning of the project have the potential to cause the following significant impacts on MNES:

6.17.4.1 Listed threatened species and ecological communities

Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC

The Brigalow TEC occurs in small, fragmented patches across the project site and is composed of RE 11.3.1, RE 11.4.8 and RE 11.4.9. An assessment in accordance with key diagnostic and condition thresholds of the Brigalow TEC Conservation Advice (Department of Environment 2013) identified 396.54ha of Brigalow TEC within the project site. Queensland RE mapping identified a total of 526.88ha of remnant Brigalow REs and 88.91ha of HVR Brigalow REs within the project site.

A total of 210.31ha of Brigalow TEC is within the project footprint, of which 63.33ha is proposed to be significantly impacted. Approximately 53.49ha is proposed to be impacted in stage 1 (33.92ha relating to direct impacts associated with construction activities and 19.57ha indirect impacts from fragmentation) and 9.84ha in stage 2 (relating to direct impacts associated with operational activities, which equates to the maximum modelled extent of ponded areas).

The balance of the Brigalow TEC within the project footprint includes 146.98ha within the modelled subsidence area and which may potentially be subject to indirect impacts. The SMP proposes to monitor the actual area of subsidence for each panel over a period likely to be 2-10 years compared to a pre-disturbance baseline. This would require aerial LiDAR-derived surface level data to validate subsidence modelling predictions and follow-up ground survey verification.

Earth works (ripping or ploughing, or stripping of topsoil, excavating and placing clean fill) are proposed for the filling in and stabilisation of significant surface cracking. Ponding impacts will be assessed using surface water quality parameters and water level measurements to determine appropriate remedial actions, such as installing drains to channel water away. Without adequate drainage, the Brigalow TEC within these areas is expected to die back.

The significant impact assessment concluded that the loss of habitat is likely to adversely affect habitat critical to the survival of the ecological community. An offset is proposed to compensate for the significant impact.

Proposed avoidance and mitigation measures include avoiding Brigalow TEC to the greatest extent possible when siting infrastructure (such as IMG extraction wells), reducing clearing widths for IMG drainage access tracks and pipelines, implementing a weed management plan to limit weed invasions into the Brigalow TEC, and using dust suppression measures to reduce the impacts of dust settling on vegetation.

Conclusion

I am satisfied that the EIS has adequately considered the potential impacts that the project could have on the Brigalow TEC. Project design has incorporated remedial drainage of areas subject to ponding. Modelling indicates 166.55ha of Brigalow TEC would likely be subject to subsidence and I note that ongoing monitoring of the impacts of subsidence and appropriate ecology-related adaptive management measures are required in the SMP.

I have recommended conditions stating clearance limits and an environmental offset for the residual significant impact to 63.33ha of Brigalow TEC habitat to the Australian Minister for the Environment and Water.

Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin TEC

The Grasslands TEC within the study area is comprised of RE 11.4.4, *Dichanthium* spp., *Astrebla* spp. grassland on Cainozoic clay plains. It exists in a small patch in the middle of the site. A total of 1.73ha of the TEC, listed as endangered under the EPBC Act, was recorded in the study area. One small patch of the Grasslands TEC totalling 0.08ha is proposed to be directly impacted due to clearing for surface works. Bluegrass, *Dichanthium setosum*, listed as vulnerable under the EPBC Act, was identified within this community. King bluegrass, *Dichanthium queenslandicum*, listed as endangered under the EPBC Act, was not observed but is considered by the EIS as likely to occur within this community.

The two small patches of Grassland TEC habitat are within and adjacent to a proposed overhead power transmission line that is likely to span the patches. The assessment has conservatively assumed those areas as subject to direct impacts. The Grassland TEC is outside the area proposed to be impacted by subsidence. The significant impact assessment concluded that the Grassland TEC is unlikely to be significantly impacted. This is due to undertaking proposed mitigation measures and that the limited disturbance was considered unlikely to reduce the extent of the ecological community. Therefore, an offset is not proposed.

Proposed avoidance and mitigation measures consist of avoiding placement of powerline infrastructure and construction access roads within the Grassland TEC, installation of erosion and control measures, development of a weed management strategy, and dust suppression measures.

Conclusion

I am satisfied that the EIS has adequately considered the potential impacts that the project could have on the Natural grasslands TEC. I note that the community is subject to a range of existing threats and that these small patches are surrounded by cleared and highly modified grazing areas that are dominated by the exotic weed Buffel grass, *Cenchrus ciliaris*. Project design has largely avoided the potential for direct clearing to patches of the Grassland TEC by locating power transmission infrastructure outside the area of disturbance. I recognise that any clearing that may occur would only be of a minor and temporary nature. I consider that an offset condition is not required for the Grassland TEC.

To ensure that significant impacts on the Grassland TEC are avoided, I have recommended to the Australian Minister for the Environment and Water conditions, requiring clearance limits and mitigation measures.

Squatter pigeon (southern), *Geophaps scripta scripta*

The survey timing, methodology and effort largely met regulatory guideline standards. Squatter pigeons, listed as vulnerable under the EPBC Act, were recorded in surveys in the project site in 2012 and 2017.

The EIS determined potential habitat categories for threatened species used the *Habitat descriptions for 12 threatened species, specific to central Queensland - Report commissioned by BHP* (Kerswell et al. 2020). This document, also submitted as EIS Appendix C-3, classifies threatened species habitat of 12 species frequently encountered in the Bowen Basin region into three categories – preferred habitat, suitable habitat, and marginal habitat. These categories somewhat align with habitat definitions found in DCCEW's Species Profile and Threats Database for the squatter pigeon.

Preferred habitat for the squatter pigeon was mapped predominantly in the northern part of the project site associated with the convergence of Boomerang, Plumtree and Hughes creeks.

There is 631.24ha of preferred habitat (equivalent to breeding and foraging habitat) within the project footprint.

Suitable habitat for the squatter pigeon was described as a large patch between Plumtree and Hughes creeks, as well as in smaller patches scattered between One Mile and Hughes creeks. There is 289.87ha of suitable habitat (equivalent to foraging habitat) within the project footprint.

Marginal habitat for the squatter pigeon was described as being concentrated within the centre of the project footprint. There is 941.22ha of marginal habitat (equivalent to dispersal habitat) within the project footprint.

DCCEEW provided submission comments in relation to the marginal habitat classification stating that the EIS significant impact assessments did not appropriately recognise the importance of dispersal opportunities using marginal habitat between breeding and foraging habitats. Additionally, DCCEEW stated that insufficient justification had been provided to exclude this as a significant habitat type. Consequently, DCCEEW considered the assessment is likely to have underestimated the area subject to significant impacts and that this therefore led to a lower offset liability.

The EIS stated that habitat critical to the survival of the species consisted of both preferred habitat and suitable habitat. A total of 73.06ha of preferred and suitable habitat is proposed to be cleared for surface infrastructure and the IMG drainage network. A further 40.52ha would be subject to a significant impact due to ponding inundation. A total of 777.09ha of habitat critical to the survival of the species is located within the area of modelled subsidence. However, the EIS concluded that subsidence is unlikely to significantly impact the composition and structure of the existing native vegetation. Proposed monitoring of vegetation to determine whether subsidence is adversely impacting vegetation condition are detailed in the SMP.

The significant impact assessment concluded that the project is likely to result in a significant impact to the squatter pigeon of 113.58ha of habitat critical to the survival of the species. The EIS stated that marginal habitat may provide dispersal opportunities but does not provide important foraging or breeding resources.

Proposed avoidance and mitigation measures include standard sequential clearing protocols, the use of fauna spotter-catchers, restrictions of vehicles to access tracks and roads, and the development of a weed and pest management plan.

Conclusion

I am generally satisfied that the EIS has adequately considered the potential impacts that the project could have on the squatter pigeon. I accept the conclusions reached in the EIS that the habitat loss resulting from construction of surface infrastructure and the IMG drainage network, and the operational impacts from ponding/inundation would be likely to significantly impact the squatter pigeon. I note that monitoring and calculating any indirect impacts from subsidence may lead to future offset conditions.

I have recommended conditions stating clearance limits and an environmental offset for the significant impact to 113.58ha of squatter pigeon habitat to the Australian Minister for the Environment and Water. I have also recommended conditions for specific mitigation measures related to the clearing of squatter pigeon habitat.

Ornamental snake, *Denisonia maculata*

Surveys detected the presence of ornamental snake on the project site within shrubby Brigalow regrowth vegetation containing well developed gilgai in 2012 and 2020. Records of ornamental

snake, which is listed as vulnerable under the EPBC Act, exist in adjacent mining tenements and the wider landscape. A total of 2,276.31ha of suitable habitat was mapped within the study area but the EIS excluded 29.67ha of this total that it considered were areas subject to isolation and disconnection. Suitable habitat for ornamental snake was defined as per Kerswell et al. 2020. No 'preferred habitat' or 'marginal habitat' was mapped for the site. Suitable habitat was considered by the EIS to meet the definition of habitat critical to the survival of the species.

A total of 386.18ha of suitable habitat is proposed to be cleared for project infrastructure (comprised of 213.19ha for surface infrastructure and 118.77ha for the IMG drainage network), and a further 54.22ha which would be significantly impacted by operational ponding.

The significant impact assessment concluded that the loss of suitable habitat is considered likely to adversely affect habitat critical to the survival of the ornamental snake. An offset is proposed to compensate for the significant impact.

The EIS stated that a further 496.58ha of suitable habitat impacted by subsidence is unlikely to be significantly impacted. I note that ponding impacts in the absence of drains may lead to surface water quality changes and hydrological changes to gilgai habitats leading to potential senescence of impacted vegetation. The EIS stated that much of the habitat subject to subsidence would retain habitat functionality due to the cracking clay soils, the extent and depth of subsidence and the resilience of native vegetation.

The EIS stated that the ponded areas may provide wetland habitat for frogs that are the main prey of ornamental snakes. However, the high salt content of six large ponds subject to evapoconcentration is likely to render these ponds uninhabitable for frogs during consecutive dry years.

Proposed avoidance and mitigation measures include locating project infrastructure and temporary lay down areas and stockpiling of equipment on cleared land that is not mapped as ornamental snake habitat, undertaking pre-clearance surveys by suitable qualified fauna spotter catchers, using those spotter catchers to monitor clearance procedures, and the implementation of pest management controls to reduce the impact of cane toads and feral pigs on ornamental snake habitat. The EIS also considers that remedial actions such as the use of drains to channel water away from troughs would reduce the loss of ornamental snake habitat from potentially longer residence ponds and lower the risk of soil compaction and changes to soil composition.

The proponent has committed to develop a Threatened Species and Communities Management Plan prior to construction that would detail species-specific mitigation measures for the construction period only. The management and monitoring of ponded areas in the operational phase would be through the measures stated within the SMP. For instance, proposed pond drainage mitigation works are intended to minimise hydrological changes to gilgai habitats and to reduce the potential senescence of vegetation. Additionally, the retention of micro-habitat features such as coarse woody debris, and the revegetation of areas subject to ponding or erosion impacts, such as watercourses, would be subject to adaptive control measures as per the RMP and the PRCP.

Conclusion

I am generally satisfied that the EIS has adequately considered the potential impacts that the project could have on the ornamental snake. I accept the conclusions reached in the EIS that the habitat loss resulting from construction of surface infrastructure and the IMG drainage network, and the operational impacts from ponding/inundation would be likely to significantly impact the ornamental snake. I note that conditions may be drafted to require offsets for unexpected impacts identified through monitoring.

I have recommended conditions stating clearance limits and an environmental offset for the significant impact to 386.18ha of ornamental snake habitat to the Australian Minister for the Environment and Water. I have also recommended conditions for specific mitigation measures related to the clearing of ornamental snake habitat.

Koala, *Phascolarctos cinereus*

The EPBC Act conservation status of the koala was vulnerable at the date of the controlled action decision in 2017. The EPBC Act conservation status of the koala was uplisted from vulnerable to endangered in 2022. An updated Conservation Advice (DCCEEW

2022a) states that human activities including mining have resulted in habitat loss, fragmentation, and degradation. The conservation advice recognises that where habitat is used to meet essential life cycle requirements such as foraging, breeding and dispersal along corridors, it should constitute habitat critical to the survival of the species. The Australian Minister for the Environment and Water, in making approval decisions, must have regard to the current Conservation Advice. The EIS concluded that the project site may support an important population for breeding and dispersal.

Surveys in 2020 detected the presence of two koalas in the project site, associated with eucalypt woodland habitat. Records of koalas also exist in adjacent mining tenements and the wider landscape. Habitat categories for koala were defined as per Kerswell et al., 2020. The EIS stated that there was 362.03ha of preferred habitat, 1,748.51ha of suitable habitat and 386.67ha of marginal habitat for the koala within the project site. DCCEEW in submission, review comments, and in meetings with the proponent, has noted that the definitions as per Kerswell et al., 2020 are not endorsed by the Commonwealth government.

A total of 136.33ha of preferred and suitable koala habitat is proposed to be cleared/significantly impacted within the project footprint which includes 84ha of remnant vegetation to be cleared for project infrastructure, and 52.33ha that is within the maximum extent of ponding due to subsidence.

Ponding impacts that lead to dieback and loss of koala habitat trees were not considered by the EIS to further fragment habitat connectivity. The EIS depicts preferred habitat and suitable habitat for koala as being regularly fragmented by successive ponded/inundated areas above the subsided panels. DCCEEW in submission and review comments believes this fragmentation is likely to result in a significant impact to koalas as the intervening areas are unlikely to be usable for the species, for example along the area of Hughes Creek subject to subsidence.

A further 934.77ha would potentially be indirectly impacted by subsidence surface cracking within the project footprint. The EIS stated that this area would be unlikely to experience significant impacts from subsidence that would alter the structure and composition of native vegetation.

I note that the design and layout of the IMG drainage infrastructure has yet to be finalised which raises the risk that all potential impacts have not been accounted for. However, I note and support that the EIS has committed to minimising direct impacts on riparian corridors, trenching pipelines that require crossing watercourses and reinstating the beds and banks of any impacted watercourses. I also note that the proponent has conservatively proposed to offset the maximum modelled impact.

Proposed avoidance and mitigation measures include remedial drainage works to reduce the extent of ponding, vegetation clearance protocols which include retaining trees occupied by a koala until the koala moves of its own volition, the use of fauna spotter/catchers, project site

speed limits, and pest control measures such as the control and mitigation of wild dogs detailed in a WPMP.

The significant impact assessment concluded that the loss of habitat is considered likely to adversely affect habitat critical to the survival of the koala. However, the EIS has only concluded preferred habitat and suitable habitat as requiring offsetting. The EIS considers the habitat meeting the marginal habitat criterion to be isolated from refuge habitat and sufficient koala food trees to support a local population. DCCEEW has consistently challenged this position in submission and review comments, noting that the *Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory* (DCCEEW 2022a) describes koalas' use of non-food trees, i.e. for refuge and rest while traversing the landscape between patches, as habitat critical to the survival of the species.

DCCEEW provided submission and review comments in relation to the marginal habitat classification stating that the EIS significant impact assessments did not appropriately recognise the importance of dispersal opportunities using marginal habitat. Additionally, DCCEEW stated that insufficient justification had been provided to exclude this as a significant habitat type. Consequently, DCCEEW considered the assessment is likely to have underestimated the area subject to significant impacts and therefore led to a lower offset liability.

Conclusion

I am largely satisfied that the EIS has adequately considered the potential impacts that the project would have on the koala. However, I note the concerns expressed by DCCEEW that the marginal koala habitat area to be impacted must be included in habitat area value calculations and mapping. Additionally, DCCEEW requires further justification as to why the small areas of koala habitat that may be lost to fragmentation due to subsidence are not included in impact calculations. DCCEEW and DETSI require this information to adequately assess potential impacts on this species, calculate disturbance limits and ensure offset calculations are correct. I have recommended an offset condition to the Australian Minister for the Environment and Water for the significant impact to 136.33ha of koala habitat and a yet to be determined area of marginal habitat and habitat functionally impacted by subsidence.

I have also recommended a condition for specific mitigation measures related to the clearing of koala habitat.

Australian painted snipe, *Rostratula australis*

The Australian painted snipe is a cryptic wading bird that inhabits shallow freshwater wetlands. It is highly dispersive with movements responding to rainfall and availability of food. Prolonged and widespread declines in the estimated population have resulted in its conservation status of endangered under the EPBC Act.

The species was recorded in the project site in a previous survey for the SRM conducted in 2007. The EIS stated that 1,932ha of suitable habitat occur on the project site, of which approximately 713ha is within the project footprint. The EIS stated that this habitat only consists of foraging resources when inundated. No wetland areas containing suitable breeding habitat or refuge habitat were identified. Ephemeral wetlands were considered by the EIS to only provide intermittent foraging habitat. Based on these factors, and the lack of current records for the species, the EIS concluded that the suitable habitat did not meet the definition of habitat critical to the survival of the species.

A total of 387.13ha of foraging habitat is proposed to be directly impacted via clearing and ponding impacts from subsidence. A further 325.84ha would be indirectly impacted by subsidence.

Proposed avoidance and mitigation measures include minimising disturbance to wetland habitats, providing information to workers about the species, and directing artificial lighting away from wetland habitats.

The EIS stated that ponding resulting from subsidence may improve and increase the area of suitable foraging habitat if the pools retain their habitat values. The EIS also stated that subsidence ponding may provide artificial wetland environments for waterbird species. The Australian painted snipe forages on insects, worms, molluscs, crustaceans and other invertebrates in natural wetland environments. However, it is unlikely that the ecosystem requirements to sustain these prey species will develop in the artificial ponds in the short or medium term. The ponds would also be subject to successive sediment infill and water quality changes. DETSI notes that the high salt content of six large ponds subject to evapoconcentration is likely to render those ponds uninhabitable for wading birds and their prey.

Conclusion

I note the significant potential foraging habitat for the Australian painted snipe that is proposed to be cleared. However, I recognise that the gilgai habitat areas are predominantly small in area, fragmented from larger patches and subject to historic and current grazing impacts that have lowered their condition. I also note and accept that the EIS considers no habitat critical to the survival of the species exists on the site. I conclude that the project is unlikely to significantly impact the species and I have not recommended an offset condition.

Greater glider, *Petauroides volans*

Targeted fauna surveys in 2020 detected 19 greater gliders within the riparian vegetation associated with Boomerang and Hughes creeks, and the surrounding woodlands. One record from 2012 exists in the south of the project site and numerous records occur in the region.

The EPBC Act conservation status of the greater glider was vulnerable at the date of the controlled action decision in 2017. The conservation status of the greater glider was uplisted from vulnerable to endangered in 2022. An updated Conservation Advice (DCCEEW 2022b) states that smaller or fragmented habitat patches connected to larger patches of habitat are considered habitat critical to the survival of the species. Additionally, all populations of the greater glider (southern and central) are considered important populations. Greater gliders are known to be particularly sensitive to disturbance such as tree removal and habitat fragmentation (DCCEEW 2022b). The Australian Minister for the Environment and Water, in making approval decisions, must have regard to the current Conservation Advice.

The EIS stated that 190.05ha of preferred habitat (equivalent to breeding and foraging habitat) and 441.82ha of suitable habitat (equivalent to foraging habitat) occur on the project site, of which 267.5ha is within the project footprint. There was 848.95ha of marginal habitat (equivalent to dispersal habitat) identified outside of the riparian corridors and the EIS stated that gliders are rarely detected in this habitat type.

Both preferred habitat and suitable habitat were considered by the EIS to meet the definition of habitat critical to the survival of the species. Of this habitat, 38.55ha was stated to be directly impacted by construction activities and operational ponding. Subsided panels leading to deep depressions would be inundated by overland flow and in some cases where vegetation is intolerant of waterlogging, this may result in tree dieback. The extent of impacts is likely to be most pronounced along the reach of Hughes Creek subject to ponding with longer inundation periods.

A further 228.94ha was stated to be indirectly impacted by subsidence. Surface cracking and localised dieback of potential denning trees were recognised as potential indirect impacts of subsidence. The EIS stated that any localised dieback of canopy trees along the riparian corridor would be unlikely to impede the dispersal of greater gliders. The EIS considers these impacts would not result in structural or compositional changes to native vegetation and associated threatened species habitat.

The EIS depicts preferred habitat and suitable habitat for the greater glider as being regularly fragmented by successive ponded/inundated areas above the subsided panels. DCCEEW in submission and review comments, believes this fragmentation is likely to result in a significant impact to the greater glider as the intervening areas are unlikely to be usable for the species, for example along the area of Hughes Creek subject to subsidence. The EIS stated that floodplain species such as *E. tereticornis* and *E. camaldulensis* are tolerant of periodic inundation and that ponding impacts close to greater glider habitat trees would be unlikely to result in tree death.

The indirect impacts from subsidence induced ponding would be monitored by the SMP. Proposed mitigation measures within the SMP include the monitoring of remnant vegetation and habitat subject to subsidence and the replanting of trees to replace dead trees. I note this would only benefit the greater glider in the long-term. It is important to ensure that any localised tree deaths do not result in a volplane distance that would impede glider movement. To this end I have recommended specific greater glider mitigation measures.

Proposed avoidance and mitigation measures include sequential clearing of vegetation, limiting the clearing distance between large Eucalypts to ensure glider movement is still possible, strategic installation of glider poles or rope bridges, retention of large trees with large hollows, and limiting riparian clearing at creek crossings.

Conclusion

I am largely satisfied that the EIS has adequately considered the potential impacts that the project would have on the greater glider. I have recommended an offset condition to the Australian Minister for the Environment and Water for the significant impact to 38.55ha of greater glider habitat. I have also recommended a condition for specific mitigation measures related to the clearing and monitoring of greater glider habitat.

However, I note the concerns expressed by DCCEEW that further justification as to why the small areas of greater glider habitat that may be lost from fragmentation due to subsidence are not included in impact calculations. DCCEEW and DETSI require this information to adequately assess potential impacts on this species, calculate disturbance limits and ensure offset calculations are correct. This significant impact area figure may be amended with the provision of further assessment on this issue from the proponent, or through adequate justification and measures proposed to mitigate fragmentation impacts.

A water resource, in relation to coal seam gas development and large coal mining development

The TOR required the EIS to address the EPBC Act controlling provision – a water resource, in relation to coal seam gas and large coal mining developments (s 24 D & E) – to assess whether the proposed project will have or is likely to have a significant impact on the hydrology or water quality of a water resource.

The IESC was requested by DCCEEW and DETSI to provide best available scientific advice on the project's potential impacts to water resources. The submitted IESC advice assessed the project's potential impacts against the IESC Information Guidelines (IESC 2018).

1. Surface water

Existing environmental values

The project site includes the watercourses and floodplains of six ephemeral creek systems which run into the Isaac River to the east of the site. Three ephemeral watercourses – Boomerang, Hughes and Plumtree creeks have been subject to modification by open-cut mining operations within the existing SRM. Existing environmental water quality monitoring data revealed highly variable physico-chemical water quality parameters and deviations from guideline values of WQOs. The watercourses are rated as moderately disturbed in the *EPP (Water) Isaac River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part), including all waters of the Isaac River Sub-basin (including Connors River) 2011* (DEHP 2011).

The receiving aquatic environment was seasonally surveyed, and a range of environmental values were assessed. The EIS stated that the ephemeral nature of the watercourses provides generally shallow, small, and isolated pools that are short-lived. Habitat condition ranges from 'fair' to good' with nine species of common native fish recorded but no threatened freshwater turtles were observed. The riparian habitats provide an important ecological corridor for east-west wildlife movement and dispersal, particularly for the koala and greater glider.

Impact assessment

The EIS identified that construction earthworks would likely alter flow and augment sediment regimes in Boomerang, Hughes and Plumtree creeks and that this would potentially impact water quality and aquatic and riparian environmental values. Clearing for watercourse crossings for access roads, pipelines and powerlines were identified by the EIS as presenting a potential barrier to the movement of aquatic fauna if not well-designed. Impacts are predicted to be temporary in nature and low-risk due to works being undertaken in the dry season when the creeks are not flowing. Impacts to four species of native fish from increased sedimentation were stated to be within their normal tolerance levels for these disturbed aquatic ecosystems.

The sources of MAW generated by the project have been identified as process area runoff, runoff that may be impacted by subsidence over the underground mine, groundwater from underground mine dewatering, and process return water from underground mining operations. Significant rainfall events that lead to flooding of the mine area were considered in the original EIS to be managed via emergency releases of MAW from a release point on Boomerang Creek to the receiving environment. MAW has the potential, if not adequately managed, to impact receiving waters and aquatic biota via toxicants, altered pH and high sediment and salinity loads. Supplementary Information was provided by the proponent to DETSI in August 2025 stating that the EIS is now not seeking authorisation for a proposed mine water release point. The EIS now considers that the project's WMS has sufficient capacity for managing water volumes and that a release point is not a critical operational element.

Proposed mitigation measures

A Site WMP is proposed to be developed in the detailed design phase that would incorporate the WMS, measures to manage and avoid acid rock drainage and saline drainage, containment of MAW and development of an ESCP.

Ongoing monitoring would require the development of a TARP to identify corrective actions if water quality objectives are exceeded or stream health is adversely changed.

2. Subsidence

Impact assessment

Potential impacts resulting from subsidence include subsidence pooling from surface runoff, increased bank and bed erosion, bank instability, downstream aggradation, and degraded water quality. Increased sedimentation of the at-risk watercourses Boomerang, Hughes and Plumtree creeks could adversely impact aquatic habitats. Erosion of downstream reaches of Hughes Creek are modelled to continue until subsided upstream reaches are infilled – a process that could take decades.

Hughes, Plumtree and Boomerang creeks are located within the area of subsidence. Those watercourses are heavily impacted by the existing open-cut mining operations of the SRM immediately adjacent to the project site. Both Hughes and Boomerang creeks have diversion reaches, while Plumtree Creek does not have an upper catchment as it has been cleared for the SRM. The most pronounced subsidence impacts are modelled over the two most western panels beneath Hughes Creek.

The EIS stated that the total subsidence impact area is 2,530ha. Subsidence impacts would be more pronounced in the southern panels with modelled predicted subsidence ranging from 2m to 3.4m over most longwalls. Maximum surface subsidence for the northern panels would range from 0.75m to 2.25m. The subsided landform would result in surface water flowing into these areas and leading to ponding. Thirty-six ponded areas are modelled to form, comprising a total area of 139ha. The largest of the ponds would have a maximum depth of 2.9m, a maximum volume of 176ML, and span an area of approximately 17ha. Three of the ponds would be located within Hughes Creek. Modelling predicts that ponds would be created progressively over the life of the mine and subject to repeated filling and emptying over the 20-year period of mining.

Evapoconcentration of salts is predicted to occur in the four largest ponds that are rarely subject to overflow, leading to very high levels of salts for prolonged periods. Six of the ponds would exceed the livestock drinking EC limits for >50% of the time. Significant rainfall events are predicted to reduce EC to relatively fresh levels in the majority of the ponds. The largest pond is modelled to maintain high salinities exceeding the adopted “Livestock Drinking EC Limit” of 7,462 $\mu\text{S}/\text{cm}$ derived from the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000) for greater than 80% of the time. The pond is modelled to have a 0% annual overflow probability, thereby contributing to the high EC concentration.

The ponding areas would also reduce the annual surface water volume flowing to Boomerang, Hughes and One Mile creeks by up to 6.6% after 20 years of operational mining.

The ponded areas on land have the potential to lead to dieback of vegetation that is intolerant of periodic inundation. The GDE assessment did not consider that GDEs were present within the ponded areas. The ponded areas would drain into Plumtree, Hughes and One Mile creeks but downstream terrestrial GDEs on Hughes Creek are not expected to be impacted.

The EIS stated that the ponded areas may provide ecological benefits with the creation of wetland pools providing aquatic habitat. However, benefits may be short-lived as evidence from Bowen Basin longwall mines indicates elevated sediments from infilling will eventually overtop the pools.

Surface cracking due to subsidence was also identified as a potential source of rill or gully formation and increased erosion. Cracks have the potential to enlarge in finer textured soils associated with *E. populnea* woodland (RE 11.3.2) and this may lead to isolated tree deaths due to increased stress and shearing of roots.

Proposed mitigation measures

The project's WMS proposes a range of mitigation measures to manage the sources of MAW. No new watercourse diversions are proposed; instead, clean runoff would be diverted around process areas via catch drains. Runoff from process areas such as the CHPP, ROM pad and the product stockpile that generate MAW would be collected at local MAW dams via drains and sumps. Individual MAW dams would then pump MAW to the PWD in order to provide sufficient capacity to contain further inflows.

Impacts from construction works and mining operations that are likely to lead to increased runoff with high sediment loads are proposed to be mitigated by standard erosion and sediment control measures. To ensure ESCP requirements are enforceable, I recommend that draft EA conditions F14 to F18 in [Appendix A](#) of this assessment report be applied to the EA.

The SMP would monitor and manage any subsidence-related impacts impacting water resources including, but not limited to surface cracking, erosion, ponding, and changes to watercourse geomorphology and ecology. Subsidence ponding impacts would be mitigated by the installation of drainage earthworks to reduce significant ponding and encourage free drainage across the local landscape. Drainage channels would be located outside of vegetation communities. Fish or other aquatic fauna stranded in land-based ponds or drainage channels would be relocated by suitably qualified persons subject to approvals under the NC Act 1992.

Surface cracks deemed to require repairing such as areas of high erosion risk would be subject to mechanical ripping, placing clean fill, establishing drainage and seeding. Watercourse bank erosion, incision and/or stream widening impacts are proposed to be mitigated via embankment armouring, the installation of contour banks and erosion control matting, and planting of riparian vegetation to stabilise high energy areas. The SMP has provided a subsidence risk assessment and preliminary TARP.

The SMP would require monitoring of receiving waters of Boomerang, Hughes, One Mile, Phillips and Spring creeks. Monitoring would include surface water flow and water quality baseline data that would establish trigger levels for potential controlled and uncontrolled releases of wastewater and associated contaminants to receiving waters. Baseline measures would be required to characterise the hydrological regime, such as the timing and duration of zero and low-flow periods. Annual results would require reporting of SMP outcomes to evaluate whether EA conditions for water quality have adequately protected the receiving environmental values.

To ensure these mitigation measures and the requirements for the SMP are enforceable, I recommend that draft EA conditions K1 to K13 in [Appendix A](#) of this assessment report be applied to the EA.

3. Groundwater

Existing environmental values

The project site is within the Bowen Basin and the stratigraphy comprises deeper Permian coal measures overlain by unconsolidated to poorly consolidated Tertiary and Quaternary sediments. The alluvium associated with the creeks was mapped for the groundwater model based on bore logs, CSIRO mapping and site-specific auguring within the mine footprint. Historic and existing groundwater monitoring bores have provided monitoring data from 2011 to 2023.

Three main aquifer systems are located within the project area – Quaternary alluvium (associated with Boomerang and Plumtree creeks), Tertiary sediments, and the Coal seams (contained within the Permian coal measures).

Hydrological data indicates that the alluvium aquifers are primarily recharged from creek flow events which is rapidly discharged, predominantly as either base flow or via evapotranspiration from riparian vegetation. A discontinuous perched groundwater layer between 6m to 10m below ground level limits vertical hydraulic connection.

A GDE assessment concluded that terrestrial GDEs are only present on Phillips Creek which is situated to the south of the proposed underground mine, and on Hughes Creek that is contiguous with the adjacent Lake Vermont Meadowbrook Mine project. No pathways for surface expression of regional groundwater were identified. Wetland areas were stated to be recharged by rainfall and floodplain flows only.

Groundwater quality is not suitable for drinking, generally too saline for cattle, and considered by the EIS to be too deep for terrestrial vegetation to access.

Impact assessment

The underground mine would require dewatering of groundwater to ensure the proposed workings are safe and efficient for operation. Dewatering lowers the potentiometric level of the coal seam leading to groundwater drawdown. An average of 183 ML/year of inflow is modelled. Modelled groundwater drawdown predicts cumulative impacts of > 200m in the Permian coal seam beneath reaches of Hughes and Boomerang creeks and extend eastwards into the adjacent Lake Vermont mining tenements. The groundwater drawdown zone would extend 5km to the northwest and 8km northeast of the underground mine. Groundwater drawdown would cause surface flow and pools in the ephemeral creeks within the zone of depressurisation to infiltrate into the groundwater layer. The EIS stated that modelling indicated no loss of water from the alluvium layer of Boomerang Creek and no change in surface water flows to the local creeks. Additionally, 18 existing groundwater bores are within the cone of depression and potentially subject to impacts. None of the bores have been identified as subject to “make good” agreements.

No significant impact to groundwater quality is anticipated as the project impacts are expected to be generally within the existing variable salinity levels of the groundwater.

Subsidence would lead to surface cracking and the potential for vertical connectivity between surface waters and groundwater exists. However, the groundwater modelling identified no significant drawdown in the alluvium layer and no impacts to the surface waters.

Proposed mitigation measures

Four new groundwater monitoring bores are proposed to be installed prior to project commencement to augment the existing network. Monitoring data aims to verify drawdown extents in the groundwater aquifers to assess the influence of the fault in drawdown. A Groundwater Monitoring Program is proposed to provide early detection for changes to groundwater levels and quality and groundwater ingress.

Groundwater quality and quantity trigger level exceedances would trigger an investigation to determine whether the exceedance is a result of the mining activity and whether environmental harm has or may occur.

4. Groundwater dependent ecosystems

Existing environmental values

The GDE surveys were conducted on the project site and identified type 2 GDEs which are terrestrial ecosystems that rely on the subsurface presence of groundwater. The fringing riparian habitats of Phillips Creek were mapped by the EIS as terrestrial GDEs. This was due to the presence of deeply incised creek channels providing access to groundwater from Tertiary aquifers that are closer to the surface, and the presence of perched groundwater in river sands. GDE surveys conducted on the adjacent Lake Vermont Meadowbrook mining tenement identified Hughes Creek as a terrestrial GDE. However, the EIS stated that the four sites assessed on Boomerang and Hughes creeks were not considered to be GDEs.

Hydro-ecological conceptualisation of the GDE sites was undertaken based on the data from the GDE surveys at 13 GDE sites. Parameters for identifying GDEs included leaf water potential, soil moisture potential and stable isotope analysis of soil moisture and xylem water.

A stygofauna survey with two sampling events was conducted on site in 2011 sampling seven groundwater bores representing the Tertiary and Permian sediments aquifers. No stygofauna species were recorded.

Impact assessment

There would be no direct clearing of the 13 surveyed GDE areas. Groundwater drawdown in the alluvium is predicted to be minor due to this system's discontinuous extent along Hughes Creek. Riparian trees such as *E. camaldulensis* and floodplain trees such as *Corymbia clarksoniana* and *C. tessellaris* are stated by the EIS to be facultative phreatophytes whereby they are able to use multiple sources of soil moisture, surface water and groundwater.

Groundwater drawdown in the Tertiary and Quaternary sediments combined with the impacts of subsidence may potentially lead to reduced flows and impact terrestrial GDEs on the downstream reach of Hughes Creek. Similarly, reductions in surface flows resulting from subsidence and resultant ponding has the potential to reduce the capacity for recharge of groundwater in the alluvium. The EIS stated that any increased groundwater drawdown impacts affecting the alluvium layer would be minor to insignificant due to the discontinuous nature of the alluvium in Hughes Creek combined with the resilience of riparian vegetation.

Proposed mitigation measures

Objectives of the WMS that are seen to reduce impacts of poor water quality on environmental values including GDEs include the segregation of waters such as the diversion of clean runoff from MAW dams, the reduction in the volume of MAW held in storage via the use of MAW for suitable operational needs, the containment of MAW in suitably sized storages, and the use of a water transfer network to efficiently move MAW from collection dams to the PWD.

The collection of GDE ecological baseline data would be required to inform GDE management and mitigation measures. This would include an ongoing GDE monitoring program that would form the basis for a draft GDEMMP detailed in conditions I24 to I25 of the recommended conditions in [Appendix A](#) of this assessment report.

Conclusion

The EIS assessment has determined that there would be no significant impact or risk to the GDEs from subsidence-induced ponding or groundwater drawdown. I am satisfied that the proponent has appropriately assessed the risks to water resources from changes to surface flows and water quality.

I note and support the proponent's proposed mitigation and monitoring measures to assess and validate predicted subsidence values, and groundwater drawdown impacts on water resources. This includes a proposed GDEMMP that recommends the collection of two years of GDE monitoring data to develop appropriate triggers and assessment parameters, prior to commencement of construction. A GDEMMP provides protocols for adaptive management actions once thresholds have been triggered. I have recommended several specific GDEMMP conditions to the Australian Minister for the Environment and Water to ensure that EIS commitments and draft management plan requirements are in place.

I note that where impacts from subsidence-induced ponding have been assessed to be significant for listed threatened species and ecological communities, offsets have been proposed that partially recognise the loss of this threatened species habitat. Additionally, the SMP has established specific, measurable, achievable, relevant and time-bound controls for mitigating impacts to surface water, groundwater and associated ecological receptors. I consider the proposed mitigation measures of draining land-based ponds and adherence to erosion and sediment control protocols would adequately ameliorate adverse impacts associated with surface flow changes. I support the monitoring and management actions provided in the draft SMP. I have recommended specific SMP conditions to the Australian Minister for the Environment and Water to ensure that EIS commitments and draft SMP requirements are in place.

The WMS would operate to effectively capture and re-use all inflows to the system including MAW, pit sump, rainfall and runoff. The WMP would also incorporate groundwater quality trigger levels and limits, in addition to erosion and sediment control measures.

6.17.5 Summary of avoidance and mitigation measures

In evaluating the project, I have considered the avoid/mitigate/offset assessment hierarchy. The EIS has proposed to implement the following measures to avoid impacts on MNES:

- targeting the coal resource contiguous with existing SRM operations and minimising the overall mine footprint by using existing infrastructure including the water pipeline, electrical and telecommunications networks.
- avoiding or minimising clearing of remnant vegetation by predominantly locating mine infrastructure and vehicle access routes in previously disturbed areas.

To ensure acceptable ecological outcomes are achieved in line with the EPBC Act's principles of ecologically sustainable development, I have conditioned the following commitments in relation to mitigating impacts on MNES:

- adopting vehicle speed limit controls to reduce vehicle strikes to wildlife; undertaking pre-clearance surveys by a suitably qualified field ecologist; using wildlife spotter-catchers during all habitat clearance activities; and ensuring all lighting is installed and used in accordance with the National Light Pollution Guidelines for Wildlife.
- implementing a Threatened Species and Communities Management Plan prior to construction that would detail species-specific mitigation measures for the construction period.
- implementing the SMP that would monitor subsidence impacts of each panel and implement mitigation measures and adaptive management responses to ensure the surface landform is stable, non-polluting and free draining, as stated in the recommended EA conditions (Schedule K: Subsidence in [Appendix A](#) of this assessment report).
- developing and implementing a GDEMMP to monitor relevant biophysical parameters of GDEs and develop triggers for corrective actions stated in the recommended EA

- conditions (Schedule I: Groundwater in [Appendix A](#) of this assessment report).
- developing and implementing a WMP that would manage downstream water quality impacts by diverting runoff from undisturbed areas around disturbed areas using drains and diversion bunds. Runoff from disturbed areas would be diverted to the process water dam for beneficial reuse in mine operations. Any MAW releases due to large flood events would be subject to MAW release limits and trigger action response plans prescribed in the recommended EA conditions (see Schedule F: Surface Water in [Appendix A](#) of this assessment report).

Where remaining significant residual impacts to MNES are unable to be satisfactorily avoided or mitigated, I have recommended environmental offset conditions.

6.17.6 Environmental Offsets

The significant impacts for stage 1 (construction) and stage 2 (operation) are listed in Table 9.

Table 9 Maximum disturbance limits to habitat for MNES listed threatened species and ecological communities

Listed threatened species or TEC	EPBC Act status	Stage 1	Stage 2	Total impact
Brigalow (Acacia harpophylla dominant and co-dominant) TEC	Endangered	53.49	9.84	63.33
Ornamental Snake (<i>Denisonia maculata</i>)	Vulnerable	331.96	54.22	386.18
Squatter Pigeon (southern) (<i>Geophaps scripta scripta</i>)	Vulnerable	73.06	40.52	113.58
Koala (<i>Phascolarctos cinereus</i>) (combined populations of Qld, NSW and the ACT)	Endangered	TBA	TBA	TBA
Greater Glider (<i>Petauroides volans</i>)	Endangered	34.50	4.05	38.55

6.17.6.1 Offset strategy

An Offset Strategy quantifies significant impacts for MNES and MSES on the impact area for the construction and operation stages. It provides an overview of how the proponent intends to secure and manage land-based offsets to acquit proposed impacts, how offset management actions and offset delivery mechanisms will meet Commonwealth and State environmental offset policy requirements, and how a conservation gain would be monitored and reported over the life of the offset.

The Offsets strategy has provided habitat quality survey data for locations within the impact area that are associated with impacts to MNES. Twenty-nine habitat quality plots were assessed in 2025 across 14 assessment units within the impact area in accordance with the Commonwealth Modified Habitat Quality Assessment method and the Guide to Determining Terrestrial Habitat Quality (V. 1.2) (DEHP 2017). Overall habitat quality scores for MNES were generally moderate, reflecting historical land clearing and fragmentation, current grazing land use, the high cover of pest plants and low densities of large trees and coarse woody debris.

6.17.6.2 Offset area

Indicative potential offsets for each of the five MNES values were calculated by the EIS using the Queensland environmental offsets impact ratio of 4:1. No evidence of using the Commonwealth OAG calculator was presented in the EIS (Table 10).

Table 10 Potential offset availability for MNES listed threatened species and ecological communities

Listed threatened species or TEC	RE status and BVG	Significant impact (ha)	Potential offset required (ha) at 4:1 impact ratio	Offset availability on four properties (ha)
Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant) TEC	Endangered, 25a	63.33	253.32	1,737.7
Ornamental Snake (<i>Denisonia maculata</i>)	Vulnerable, 25a	386.18	1,544.72	1,632.38
Squatter Pigeon (southern) (<i>Geophaps scripta scripta</i>)	Vulnerable, 16a, 17a, 25a	113.58	454.32	7,522.4
Koala (<i>Phascolarctos cinereus</i>) (combined populations of Qld, NSW and the ACT)	Endangered, 16a, 17a, 25a	TBA	TBA	5,007.2
Greater Glider (<i>Petauroides volans</i>)	Endangered, 16a, 17a	38.55	154.2	1,693.8

*Adapted from EIS Table 8 of Appendix C2 – Offset Strategy

Four proposed offset areas owned by the proponent have been identified through desktop assessment as potentially being available to acquit MNES significant impacts. An analysis of the habitats required for each MNES indicated that a combination of the four offset properties would acquit the impact area totals, with the caveat that the impact area totals for the Koala are yet to be confirmed (see 'Offset for Koala' below). However, evidence of habitat quality assessments confirming condition scores for these properties is still required. Five additional properties (not owned by the proponent) were stated as providing additional offset capacity in the event that acquittal could not be met on the four BMA properties.

Limited desktop analysis of potential offset sites to acquit offset obligations was provided. The EIS recognised that site-specific habitat quality assessments would be required on the potential offset properties. This would determine whether the offset was suitable, and the size of the offset area would be informed by use of the EPBC Act offset calculator. However, landholder engagement has not been undertaken and there is a risk that identified properties may not be able to be secured for offset purposes. The EIS stated that an appropriate offset site for stage 1 impacts would be identified post-approval.

No draft OAMP was provided for assessment. The EIS Appendix O-1 committed to developing an OAMP once all approvals have been granted, prior to construction. Potential management measures for achieving a conservation gain were discussed and these are focussed on reducing threatening processes and increasing habitat quality. The EIS recognised that further work would be required in undertaking additional habitat quality assessments for both the impact area and offset areas. Assessment and approval of a future OAMP would be required by DCCEE prior to the start of construction works.

6.17.6.3 Offset for Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC

Brigalow TEC offsets are proposed for a total of 63.33ha of significant impacts associated with the construction stage (53.49ha) and operational stage (9.84ha).

Habitat quality assessments were conducted on the impact area in six locations associated with three assessment units that conformed to the Brigalow TEC. The overall habitat quality score was stated to be moderate at 6.26 out of a maximum score of 10.

No habitat quality assessments were undertaken on the proposed offset area. A desktop assessment presented in the EIS stated that a total of 253.32ha of Brigalow TEC habitat is potentially required to acquit the impact area. Three properties were identified as being potentially available to offset the impact area.

6.17.6.4 Offset for Ornamental snake, *Denisonia maculata*

Offsets are proposed for 386.18ha of significant impact to the ornamental snake associated with the construction stage (331.96ha) and operational stage (54.22ha).

Habitat quality assessments were conducted on the impact area in 14 locations associated with seven assessment units for ornamental snake habitat. The overall habitat quality score was stated to be moderate at 6.13 out of a maximum score of 10.

A desktop assessment presented in the EIS stated that a total of 1,544.72ha of ornamental snake habitat is potentially required to acquit the impact area. Four properties were identified as being potentially available to offset the impact area.

6.17.6.5 Offset for Squatter pigeon (southern), *Geophaps scripta scripta*

Offsets are proposed for 113.58ha of significant impact to the squatter pigeon associated with the construction stage (73.06ha) and operational stage (40.52ha).

Habitat quality assessments were conducted on the impact area in 13 locations associated with six assessment units for squatter pigeon habitat. The overall habitat quality score was stated to be moderate at 6.83 out of a maximum score of 10.

No habitat quality assessments were undertaken on the proposed offset area. A desktop assessment presented in the EIS stated that a total of 454.32ha of squatter pigeon habitat is potentially required to acquit the impact area. Three properties were identified as being potentially available to offset the impact area.

6.17.6.6 Offset for Koala, *Phascolarctos cinereus*

Offsets are proposed for 136.33ha of significant impact to the koala associated with the construction and operational phases. However, this figure has not adequately accounted for the loss of marginal habitat. DCCEEW has requested that the proponent incorporate marginal habitat into the offset requirements and provide additional information on habitat quality assessments for the impacted marginal habitat.

Habitat quality assessments were conducted on the impact area in 14 locations associated with five assessment units for koala habitat. The overall habitat quality score was stated to be moderate at 6.93 out of a maximum score of 10.

No habitat quality assessments were undertaken on the proposed offset area. A desktop assessment presented in the EIS stated that a total of 545.32ha of koala habitat is potentially required to acquit the impact area. Four properties were identified as being potentially available to offset the impact area.

6.17.6.7 Offset for Greater glider, *Petauroides volans*

Offsets are proposed for 38.55ha of significant impact to the greater glider associated with the construction stage (34.5ha) and operational stage (4.05ha).

Habitat quality assessments were conducted on the impact area in 10 locations associated with five assessment units for greater glider habitat. The overall habitat quality score was stated to be moderate at 6.46 out of a maximum score of 10.

No habitat quality assessments were undertaken on the proposed offset area. A desktop assessment presented in the EIS stated that a total of 154.2ha of greater glider habitat is potentially required to acquit the impact area. Three properties were identified as being potentially available to offset the impact area.

7 Recommended conditions and actions

Section 59(d) of the EP Act requires this assessment report to recommend conditions on which any approval required for the project may be given.

The following state approvals administered through the EIS process are required for the project:

- EA under the EP Act
- PRCP schedule under the EP Act
- Social impact assessment under the SSRC Act.

As a declared controlled action, the project also requires an approval from the Australian Government under the EPBC Act.

The following sections of this assessment report discuss the conditions relevant to each of those approvals.

7.1 Environmental authority

Recommended draft EA conditions are provided in [Appendix A](#) of this assessment report. These conditions have been drafted based on the information presented in the EIS and take into account submissions made under section 54 of the EP Act regarding the submitted EIS. Following the proponent's amended EIS submission to DETSI on 29 August 2025, multiple discussions have taken place between DETSI and the proponent to develop updated conditions based on the changes made to the project. These are reflected in the recommended EA conditions and discussed in the assessment report.

The proponent applied for a site-specific EA on 24 May 2013. Since the MLs for the project overlap with the existing SRM, I recommend that the proponent amalgamate the new EA with the SRM's existing EA to enable the proponent to operate under a single, consolidated EA.

7.2 PRCP schedule

The EIS did not include a proposed PRCP schedule for the project as the TOR was finalised prior to this requirement. As discussed in [section 6.5](#) of this assessment report, following the EIS process, the proponent will need to develop a PRC plan for this project and amend the SRM PRC plan to incorporate the rehabilitation information provided in the EIS. Due to this complexity, a draft PRCP schedule has not been included in this assessment report.

7.3 Social impact assessment

[Appendix B](#) of this assessment report includes conditions stated by the Coordinator-General under section 11(2) of the SSRC Act to address social impacts. In accordance with section 11(3)(a) of the SSRC Act, these conditions are enforceable conditions under the SDPWO Act.

7.4 Australian Government approval

The Saraji East Mining Lease project is a controlled action requiring approval under the EPBC Act. The EIS adequately assessed the likelihood of occurrence of MNES, the project's relevant impacts, feasible alternatives to the project, and the feasible mitigation measures.

There are still outstanding matters related to offset calculations for MNES that DCCEE has identified. DCCEE may seek this information from the proponent prior to any decision under the EPBC Act. The proponent will deal directly with DCCEE to address those requirements and develop the necessary conditions. The conditions in [Appendix C](#) of this assessment report have been developed by DETSI and DCCEE from the feasible mitigation measures and are recommended to the Australian Minister for the Environment and Water to consider when deciding whether to grant an approval under the EPBC Act.

8 Suitability of the project

As per section 59(c) of the EP Act, I have considered the TOR, the EIS, all submissions on the EIS, and the standard criteria. The detailed information provided in this EIS process on the project and its potential impacts on the identified environmental values, have been assessed by representatives of the Australian, state and local governments, industry, interest groups and members of the public through an open, public review process.

The EIS has not identified impacts of sufficient magnitude to prevent the project from proceeding. Provided that the recommendations of this assessment report are fully implemented by imposing conditions on the necessary approvals, the project has been determined to be suitable to proceed.

9 Completion of the EIS process

In accordance with s. 60(1) of the Environmental Protection Act, the giving of this assessment report to the proponent completes the EIS process for the Saraji East Mining Lease Project.

This assessment report is given to the proponent by the delegate of the chief executive.

Christopher Loveday

24 November 2025

Signature

Christopher Loveday
Director, Technical and Assessment Services
Environmental Services and Regulation
Department of the Environment, Tourism, Science and Innovation
Delegate of the Chief Executive
Environmental Protection Act 1994

Date

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Appendix A—Recommended conditions for the environmental authority

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML1775, ML1782, ML70142, MLA70383, MLA70459.
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ML1775, ML1782, ML70142, MLA70383, MLA70459.
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML1775, ML1782, ML70142, MLA70383, MLA70459.
Ancillary 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (b) more than 2000t but not more than 5000t	ML1775, ML1782, ML70142, MLA70383, MLA70459.
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML1775, ML1782, ML70142, MLA70383, MLA70459.

Contents

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site-specific conditions of approval. This environmental authority consists of the following Schedules and Appendices:

Schedule A General

Schedule B Air

Schedule C Noise and Vibration

Schedule D Waste

Schedule E Land and Rehabilitation

Schedule F Surface Water

Schedule G Regulated structures

Schedule H Sewage Treatment

Schedule I Groundwater

Schedule J Biodiversity

Schedule K Subsidence

Definitions

Attachment A1: Authorised Disturbance Footprint (Saraji East Project)

Attachment A2: Saraji East Project layout

Attachment E1: Saraji East Project Post-Mining Land Uses

Attachment E2: Saraji East Project Grazing Land Suitability

Attachment E3: Saraji East Project Strategic Cropping Land

Attachment F1: Surface Water Monitoring Locations

Attachment I1: Groundwater Monitoring Locations

Attachment I2: Groundwater Dependent Ecosystem Locations

Attachment J1: Authorised Significant Residual Impacts – Regulated Vegetation

Attachment J2: Authorised Significant Residual Impacts – Squatter Pigeon

Attachment J3: Authorised Significant Residual Impacts – Ornamental Snake

Attachment J4: Authorised Significant Residual Impacts – Greater Glider

Attachment J5: Authorised Significant Residual Impacts – Koala

Conditions of environmental authority

Schedule A: General	
Condition number	Condition
A1	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	Prevent and /or minimise likelihood of environmental harm The environmental authority holder must take all reasonable and practicable measures to prevent and/or minimise environmental harm caused, or likely to be caused, by the activities.
A3	Scope of approval for the Saraji East Project The environmental authority holder is approved for a maximum coal extraction rate of 11 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal for Saraji East Project in accordance with the conditions of this environmental authority.
A4	In carrying out the mining activity, disturbance can only occur in accordance with: a) Table A1: Authorised disturbance areas (Saraji East Project); and b) Attachment A1: Authorised Disturbance Extent (Saraji East Project). For the purposes of this condition only, the following activities are not relevant to this condition: a) installation and operation of monitoring equipment; b) monitoring or sampling under a plan or program required by a condition of this environmental authority; and c) exploration activities conducted on MLA70383 and MLA70459 in accordance with the standard conditions in the '<i>Eligibility criteria and standard conditions for exploration and mineral development projects</i>', and located outside of mapped matters of state environmental significance (MSES) areas.

Table A1: Authorised disturbance areas (Saraji East Project)

MINE DOMAIN	MINE FEATURE NAME	LOCATION	MAXIMUM DISTURBANCE AREA (ha)
Surface Infrastructure (refer Attachment A2: Saraji East Project layout)	Infrastructure – roads, pipelines, powerlines, access roads and rail crossing, water storages, accommodation village	Attachment A1 – Authorised Disturbance Extent (Saraji East Project) - direct impact	783.0
	IMG drainage network (includes overlap with temporary ponded areas)		376.3
Underground mining (refer Attachment A2: Saraji East Project layout)	Temporary ponded areas	Attachment A1: Authorised Disturbance Extent (Saraji East Project) - direct impact	145.8
	Subsidence impacts (includes overlap with IMP drainage network and temporary ponded areas)	Attachment A1: Authorised Disturbance Extent (Saraji East Project) - indirect impact	2,529.8
Total disturbance area			3,356.4

A5	Maintenance of measures, plant and equipment The environmental authority holder must ensure: a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; c) that such measures, plant and equipment are operated in a proper manner; d) that all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated; e) records of installation, calibration and maintenance carried out must be kept in accordance with condition A6.
A6	Monitoring and records Unless otherwise specified by a condition of this environmental authority, records including monitoring results must be: a) kept for the period of five (5) years; and b) provided to the administering authority upon request and in the format requested.
A7	Plans, reports, and programs All plans, reports, and programs required by a condition of this environmental authority must be developed and reviewed by an appropriately qualified person.

A8	Upon request from the administering authority, copies of monitoring results, records, registers, management plans, programs and/or reports required by the conditions of this environmental authority must be made available and provided to the administering authority within ten (10) business days or an alternative timeframe agreed between the administering authority and the environmental authority holder.
A9	Unless otherwise authorised in writing by the administering authority, all laboratory analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) accreditation for such analyses.
A10	Notification of emergencies, incidents and exceptions The environmental authority holder must notify the administering authority by written notification within twenty-four (24) hours after becoming aware of any emergency or incident that results in the release of contaminants not in accordance, or reasonably expected to be not in accordance, with the conditions of this environmental authority.
A11	Within ten (10) business days following the initial notification under condition A10, or the receipt of monitoring results associated with the notification made under condition A10, whichever is the latter, the environmental authority holder must provide further written advice to the administering authority, including the following: a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and c) proposed actions to prevent a recurrence of the emergency or incident.
A12	Complaints The environmental authority holder must record all environmental complaints received about the mining activities, including: a) name, address and contact number for the complainant; b) time and date of complaint; c) reasons for the complaint; d) investigations undertaken; e) conclusions formed; f) actions taken to resolve the complaint, including the use of appropriate dispute resolution if required; g) any abatement measures implemented; and h) person responsible for resolving the complaint.

A13	As soon as reasonably practicable but no later than five (5) business days of receiving a complaint (or a longer period agreed to in writing by the administering authority), an investigation must be commenced to determine: a) the potential circumstances and actions on site that may have contributed to the basis of the complaint; and b) the reasonable and practicable measures that will be, or have been, implemented to address the complaint.
A14	As soon as reasonably practicable but no later than five (5) business days of investigating a complaint under condition A13 (or a longer period agreed to in writing by the administering authority), the reasonable and practicable measures identified in the investigation must be implemented.
A15	The outcome of the investigation carried out under condition A13, and the reasonable and practicable measures implemented under condition A14, must be recorded.
A16	A register of alternative arrangements must be established and maintained by the environmental authority holder. The register must include: a) the location to which the alternative arrangement applies; b) the period of the alternative arrangement; c) details about the particular environmental nuisance impact or impacts the arrangement is for; and d) details about the mitigation measures, where relevant.
A17	Environmental risk management procedures Written procedures must be developed and implemented by an appropriately qualified person that ensure: a) all potential risks to the environment from the carrying out of the activity are identified and assessed, including: i. during routine operations; and ii. outside routine operations (e.g., maintenance, start up and shut down); and iii. during preparation, rehabilitation, and closure; and iv. in an emergency (e.g., fire, flood or other natural disaster); and b) for each potential risk identified, any necessary measures to prevent or minimise the potential for environmental harm are implemented; and c) staff understand their obligations under this environmental authority and the <i>Environmental Protection Act 1994</i>; and d) environmental risk management procedures are continually reviewed and improved, based on a reasonable risk-management approach.
A18	Term Lease This environmental authority also applies to term lease TL 0/233440. No mining is to be undertaken on the part of the term lease that is not also covered by a mining lease.

A19	Commencement of Saraji East project Within forty-eight (48) hours of commencing the Saraji East project, the holder must provide the administering authority with written notification of commencement. For the purposes of this condition only, the following activities are not relevant to this condition: a) Installation and operation of monitoring equipment; b) Monitoring or sampling under a plan or program required by a condition of this environmental authority; and c) Exploration activities conducted in accordance with the standard conditions in the <i>'Eligibility criteria and standard conditions for exploration and mineral development projects'</i> and located outside of mapped matters of state environmental significance (MSES) areas.
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Schedule B: Air	
Condition number	Condition
B1	Odour nuisance The release of noxious or offensive odour or any other noxious or offensive airborne contaminant resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.
B2	If the administering authority determines odour released from the mining activities to constitute an environmental nuisance, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.
B3	Dust nuisance The release of dust or particulate matter or both resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.

B4	Air Quality Monitoring Program Upon commencement of the Saraji East project, the environmental authority holder must monitor air quality for the activity, which must include, but not be limited to: a) Continuous monitoring of PM₁₀ at one location and dust deposition at four locations (representative of the worst affected receptors) during the operation of the activity. b) Continuous monitoring of PM_{2.5} at one location (with PM₁₀ monitoring) for a minimum period of three (3) months. If this period indicates that the measured second highest 24-hour average PM_{2.5} concentration exceeds 20ug/m³, then continuous monitoring of PM_{2.5} will be required. c) The monitoring locations must comply with the Australian Standard AS/NZS 3580.1.1:2016 "Methods for siting and analysis of ambient air. Part 1.1: Guide to siting air monitoring equipment". d) Meteorological monitoring (including at least temperature, wind speed and wind direction) at a single location which demonstrate compliance with the Australia/New Zealand Standards: AS/NZS 3580.14:2014 (Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications). e) Regular reporting of the measured dust deposition rates and PM₁₀ concentrations to a publicly available web site. f) Investigation of all measured exceedances of the relevant limits in Table B1: Air Quality Limits and Monitoring Requirements to determine the influence of emissions from the mining site.
B5	If monitoring, undertaken in accordance with condition B4, indicates exceedance of the relevant limits in condition B4, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.
B6	To ensure that the air quality monitoring program required for condition B4 remains effective and well-targeted through the life of the project, the monitoring locations must be reviewed periodically. The periodic review should consider: a) The frequency and cause of any exceedances of air quality objectives measured by the monitoring program over period of at least 2 years; b) Dust complaints; c) Future progression of the mining activities; d) Locations of sensitive receptors relative to the mining activities; and e) Mining operating modes.
B7	Upon commencement of the Saraji East project, dust and particulate matter generated by mining activity operations must not cause any of the air quality objectives specified in Table B1: Air Quality Limits and Monitoring Requirements to be exceeded at a sensitive place or commercial place.

B8	For monitoring required for condition B4, air emissions for a sensitive place or commercial place must be measured: a) At that place; or b) At the monitoring location representative of the sensitive place or commercial place.
B9	Dust and particulate matter monitoring Upon commencement of Saraji East project, the environmental authority holder must conduct monitoring as per Table B1: Air Quality Limits and Monitoring Requirements at the location(s) detailed in Table B2: Dust and Particulate Matter Monitoring Locations.
B10	Air quality monitoring exceedance If monitoring in accordance with condition B9 indicates the potential for exceedance of the relevant limits in Table B1: Air Quality Limits and Monitoring Requirements, then the environmental authority holder must immediately implement dust abatement measures to avoid exceeding the relevant limits.
B11	Where monitoring in accordance with condition B9 identifies instances where a concentration specified in Table B1: Air Quality Trigger Levels and Monitoring Requirements is exceeded at any sensitive place or commercial place, the environmental authority holder must report to the administering authority within fourteen (14) days: a) the air quality data at the sensitive place or commercial place; b) the description of meteorological conditions recorded in accordance with Table B1: Air Quality Trigger Levels and Monitoring Requirements occurring at the time; c) the air quality data upwind of the mining activities (if known); d) measures taken to reduce the dust generated by the mining activities; and e) the contribution of the mining activities to the dust deposition/TSP/PM_{2.5}/PM₁₀ concentration at the sensitive or commercial place.
B12	Air Emissions Management Plan An Air Emissions Management Plan must be developed by an appropriately qualified person and implemented prior to commencement of the Saraji East project. The Air Emissions Management Plan must incorporate a program for continuous improvement for the management of dust and particulate matter resulting from the mining activities with respect to, but not limited to: a) Control measures to minimise and manage impacts from the operation of the mining activities on local air quality; b) the collection of air quality and meteorological data at the locations and using the monitoring methods described in Table B1: Air Quality Limits and Monitoring Requirements at all locations specified in Table B2: Dust and Particulate Matter Monitoring Locations; c) a system to identify adverse meteorological conditions likely to produce elevated levels of dust including PM₁₀ at a sensitive place or commercial place due to mining activities, d) a dust and particulate matter control strategy which activates a timely implementation of management control actions; and e) event response and reporting, and complaint management procedure.

B13	The Air Emissions Management Plan required by condition B12 must be reviewed every 2 years by an appropriately qualified person and any recommendations considered for incorporation into the Air Emissions Management Plan.
B14	Prior to the commencement of Saraji East project, monitoring locations identified by the Air Emissions Management Plan required by condition B12 must be provided to the administering authority for inclusion in Table B2: Dust and Particulate Matter Monitoring Locations of this environmental authority.

Table B1: Air Quality Limits and Monitoring Requirements

Air Quality Indicator	Frequency	Air Quality Limit	Monitoring Method
PM ₁₀	Continuous	50µg/m ³ (24-hr avg)	AS/NZS 3580.9.6:2015 AS/NZS 3580.9.7:2009 AS/NZS 3580.9.11:2022 AS 3580.9.8:2022 AS 3580.9.9:2017
TSP	Continuous	90 µg/m ³ (annual average)	AS/NZS 3580.9.3:2015 Any alternative methods of monitoring, which may be permitted by the administering authority as acceptable.
PM _{2.5} *	Continuous (refer condition B4b)	25 µg/m ³ (24-hr avg)	AS/NZS 3580.9.10:2017 Any alternative methods of monitoring, which may be permitted by the administering authority as acceptable.
Dust deposition	Continuous	120 mg/m ² /day	AS/NZS 3580.10.1:2003
Wind speed and direction, temperature, precipitation, relative humidity	Continuous	NA	AS/NZS 3580.14:2014

* PM_{2.5} must be measured at one monitoring location at a minimum. The PM_{2.5} must be measured along with PM₁₀ at this location.

Table B2: Dust and Particulate Matter Monitoring Locations

Location	Receiving area	Latitude (decimal degree, GDA2020)	Longitude (decimal degree, GDA2020)	Monitoring description
Representative of Saraji Homestead 1 ¹	TBC ¹	TBC ¹	TBC ¹	PM ₁₀ , PM _{2.5} ² , TSP, dust deposition, meteorological station
Representative of Saraji Homestead 2 & 3 ¹	TBC ¹	TBC ¹	TBC ¹	TBC ¹

NOTES:

- Monitoring locations to be confirmed and established prior to commencement of Saraji East project in accordance with **conditions B6 and B15**.
- Unless **condition B4b** has determined no requirement to continuously monitor for PM_{2.5}.

B15	Greenhouse gas (GHG) abatement plan A greenhouse gas (GHG) abatement plan must be developed to demonstrate decarbonisation, 6 months prior to the commencement of the Saraji East project, and be implemented for the duration of the Saraji East project. The GHG abatement plan must at a minimum address the content requirements of Appendix A of the <i>Guideline: Greenhouse gas emissions (ESR/2024/6819)</i> (or more recent content requirements at the time of development of the GHG abatement plan) and include: a) project details; b) emissions projections and commencing abatement measures; c) GHG emissions reference point and justification for the reference point(s) proposed; d) Facility-level emission reduction targets for Scope 1 and Scope 2 GHG emissions; e) GHG emission reduction program for Scope 1 and Scope 2 GHG emissions; i. If carbon offsets are required to achieve the Scope 1 emissions reduction targets, provide a description to demonstrate how the project will satisfy the requirements for carbon offsets in the Guideline; ii. Address the evidence requirements for the use of renewable power to reduce Scope 2 emissions, as outlined in section 7.4(5) of the <i>NGER Measurement Determination 2008</i>; f) regular review of advancing technologies and opportunities to further reduce emissions and energy efficiency; g) monitoring and auditing; and h) reporting on the progress towards the GHG emission reduction targets outlined in the GHG abatement plan.
B16	Review of GHG abatement plan By 30 June each year following implementation, the environmental authority holder must review the effectiveness of the GHG abatement plan required by condition B15 and update the plan to address any matters identified in the review.
B17	Audit of GHG abatement plan An appropriately qualified person must undertake an annual audit by 30 June each year to determine whether the GHG Abatement Plan has been implemented and complied with during the previous year.
B18	Statement of compliance A statement of compliance must be prepared about the work undertaken to implement and comply with the GHG Abatement Plan. The statement of compliance must: a) be prepared by an appropriately qualified person; b) be submitted to the administering authority within 10 business days of the audit completion under condition B17; c) consider the following compliance criteria: i. whether the emission reduction targets in the GHG Abatement Plan have been met. ii. whether the emission reduction measures in the GHG Emission Reduction Program have been implemented. iii. whether the GHG Abatement Plan has been reviewed in accordance with review provisions in the GHG Abatement Plan.

	iv. whether GHG emissions have been monitored in accordance with the monitoring program in the GHG Abatement Plan. v. whether public reporting on progress toward the emission reduction targets has been carried out in accordance with the reporting program in the GHG Abatement Plan. d) state whether the work complies with the above compliance criteria. e) be supported by methodology, assumptions and input data used to determine GHG emissions.
B19	Public reporting Within 20 business days of the audit being completed under condition B17 the following information must be published on the environmental authority holder's website: a) the statement of compliance required under condition B18; and b) the latest version of the GHG Abatement Plan.
B20	Gas Drainage Management Plan A Drainage Gas Management Plan must be developed by an appropriately qualified person and implemented prior to the commencement of mining activities for Saraji East project. The Drainage Gas Management Plan must ensure that: a) Flaring is implemented for the lifetime of the project as a minimum abatement measure for drainage gas destruction, or alternatives as identified within the GHG abatement plan that would achieve equivalent or greater emissions reductions. b) Enclosed flares are prioritized where practicable due to their higher destruction efficiency. c) Flare downtime is minimised to reduce methane venting through measures such as self-ignition functionality and a rectification program to address potential self-ignition failures. d) Methane leakage is minimised through measures such as a periodic leak detection and repair program. e) A review program is established to reassess the Gas Drainage Management Plan every two (2) years to ensure the implementation of best available practices for drainage gas abatement.
B21	Flare(s) must be designed to demonstrate compliance with the following requirements: a) The flare must be equipped with a flare tip design to provide good mixing with air, flame stability and achieve a minimum methane destruction efficiency of 98% under varied gas flow rate and meteorological conditions; b) The flare must be equipped with a continuously burning pilot or other automatic ignition system that assures gas ignition and provides immediate notification of appropriate personnel when the ignition system ceases to function; c) The flare must be designed to handle large fluctuations in both the volume and the chemical content of gases; and d) visible emissions must not be permitted for more than five minutes in any two-hour period.

Schedule C: Noise and Vibration

Condition number	Condition																															
C1	Noise Limits The holder of this environmental authority must ensure that noise generated from the mining activities does not exceed the limits in Table C1: Noise Limits at any sensitive place or commercial place. Table C1: Noise Limits <table><tr><th rowspan="2">Noise Level dB(A)</th><th colspan="3">Monday to Sunday (including public holidays)</th></tr><tr><th>Day (7am to 6pm)</th><th>Evening (6pm to 10pm)</th><th>Night (10pm to 7am)</th></tr><tr><td colspan="4">Sensitive Place</td></tr><tr><td>LA10, adj, 10 mins</td><td>B/g + 5</td><td>B/g + 5</td><td>B/g + 3</td></tr><tr><td>LA1, adj, 10 mins</td><td>B/g + 10</td><td>B/g + 10</td><td>B/g + 8</td></tr><tr><td colspan="4">Commercial Place</td></tr><tr><td>LA10, adj, 10 mins</td><td>B/g + 10</td><td>B/g + 10</td><td>B/g + 5</td></tr><tr><td>LA1, adj, 10 mins</td><td>B/g + 15</td><td>B/g + 15</td><td>B/g + 10</td></tr></table>	Noise Level dB(A)	Monday to Sunday (including public holidays)			Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)	Sensitive Place				LA10, adj, 10 mins	B/g + 5	B/g + 5	B/g + 3	LA1, adj, 10 mins	B/g + 10	B/g + 10	B/g + 8	Commercial Place				LA10, adj, 10 mins	B/g + 10	B/g + 10	B/g + 5	LA1, adj, 10 mins	B/g + 15	B/g + 15	B/g + 10
Noise Level dB(A)	Monday to Sunday (including public holidays)																															
	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)																													
Sensitive Place																																
LA10, adj, 10 mins	B/g + 5	B/g + 5	B/g + 3																													
LA1, adj, 10 mins	B/g + 10	B/g + 10	B/g + 8																													
Commercial Place																																
LA10, adj, 10 mins	B/g + 10	B/g + 10	B/g + 5																													
LA1, adj, 10 mins	B/g + 15	B/g + 15	B/g + 10																													
C2	Noise monitoring Noise monitoring, undertaken in accordance with condition A12, must comply with the most recent version of the administering authority’s <i>Noise Measurement Manual</i> (ESR/2016/2195), and must include the following descriptors, characteristics and conditions: a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins); b) background noise LA_{90}; c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels; d) atmospheric conditions including temperature, relative humidity, wind speed and direction; e) effects due to extraneous factors such as traffic noise; f) location, date and time of monitoring.																															
C3	If monitoring indicates exceedance of the relevant level in Table C1: Noise Limits, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.																															

C4	Vibration limits Vibration from the mining activities must not exceed the limits specified in Table C2 (Vibration Limits) at any sensitive place or commercial place. Table C2 (Vibration Limits) <table border="1"> <tr> <th>Location</th><th>Vibration Measured</th></tr> <tr> <td>Sensitive place or commercial place</td><td>5 mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/s peak particle velocity at any time.</td></tr> </table>	Location	Vibration Measured	Sensitive place or commercial place	5 mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/s peak particle velocity at any time.
Location	Vibration Measured				
Sensitive place or commercial place	5 mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/s peak particle velocity at any time.				
C5	Airblast overpressure limits The airblast overpressure level from blasting operations must not exceed the levels specified in Table C3 (Airblast Overpressure Level) at any sensitive place or commercial place. Table C3 (Airblast Overpressure Level) <table border="1"> <tr> <th>Location</th><th>Airblast Overpressure Measured</th></tr> <tr> <td>Sensitive place or commercial place</td><td>115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts and not greater than 120 dB (Linear peak) at any time.</td></tr> </table>	Location	Airblast Overpressure Measured	Sensitive place or commercial place	115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts and not greater than 120 dB (Linear peak) at any time.
Location	Airblast Overpressure Measured				
Sensitive place or commercial place	115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts and not greater than 120 dB (Linear peak) at any time.				
C6	Vibration or airblast overpressure monitoring Vibration or airblast overpressure monitoring must comply with the most recent version of the administering authority's <i>Noise Measurement Manual</i> (ESR/2016/2195), and must include the following descriptors, characteristics and conditions: a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; c) location, date and time of recording.				
C7	A Noise Management Plan must be developed by an appropriately qualified person and implemented prior to the commencement of the Saraji East project.				

Schedule D: Waste	
Condition number	Condition
D1.	Waste management A Waste Management Plan must be developed by an appropriately qualified person and implemented prior to the commencement of the Saraji East project.

D2.	The Waste Management Plan required by condition D1 must include, but is not limited to: a) a description of the mining activities that may generate waste; b) a description of all waste activities being carried out; c) the location/s (including GPS coordinates) of where all waste activities are, or have been, carried out, including: i. the type of waste disposed of, treated, or reprocessed; and the volume of waste disposed of, treated, or reprocessed; d) identification of the potential risk to the environment from all waste activities carried out; e) control measures to be implemented to minimise the potential for environmental harm associated with carrying out of waste activities, including but not limited to: - segregation of wastes; - Storage of wastes; - Transport of wastes; - Transport of wastes; and - Monitoring and reporting matters concerning wastes. f) how waste will be managed in accordance with the waste management hierarchy (that is, avoid, reuse, recycling, energy recovery, disposal); g) the hazardous characteristics of wastes generated including disposal procedures for hazardous wastes; h) procedures for reprocessing waste in accordance with condition D4; i) procedures for managing accidents, spills and other incidents; j) the indicators or other criteria on which the performance of the waste management plan will be assessed; and k) staff training.
D3.	The environmental authority holder must submit the Waste Management Plan required by conditions D1 and D2 to the administering authority prior to commencing a new process, or varying an existing process.
D4.	Waste receipt The only waste permitted to be received is: a) the types of waste specified in conditions D5 to D8 (inclusive); and b) sewage and sludge for treatment in accordance with Schedule H: Sewage Treatment; and c) from a BHP Mitsubishi Alliance (BMA) site in Queensland.

D5.	Waste reprocessing The only waste permitted to be reprocessed is: a) spoil or overburden; b) vegetation; c) water or sediment containing hydrocarbons; d) fuels, oils, lubricants and coolants; e) bulk rubber; f) inert waste; g) poly-pipe and other plastic; h) fibreglass; i) treated and untreated timber; and j) asphalt.
D6.	Waste disposal Unless otherwise specified in conditions D7 and D8, waste, other than spoil or overburden or vegetation removed as part of the mining activity, must not be disposed of within the mining leases listed on this environmental authority and must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the <i>Environmental Protection Act 1994</i>.
D7.	The following types of waste are permitted to be disposed of within the specified features for the waste type: a) rejects and sediment containing hydrocarbons: ii. in spoil emplacements; iii. in regulated structures in accordance with Schedule G: Structures of this environmental authority; iv. in pits or voids; and v. in dedicated rejects emplacements; b) tailings and water or sediment containing hydrocarbons: i. in regulated structures in accordance with Schedule G: Structures of this environmental authority; and in pits or voids that are not regulated structures, provided a consequence category assessment in accordance with condition G1 has been completed.

D8.	The following types of waste may be disposed of within the mining leases listed on this environmental authority: a) bulk rubber; b) inert waste; c) poly-pipe and other plastic; d) fibreglass; e) treated and untreated timber; f) asphalt; and g) asbestos. These types of waste may be disposed of: h) in pits or voids; i) in spoil emplacements; and j) left in situ below ground level.
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Schedule E: Land	
Condition number	Condition
E1	Topsoil Topsoil must be strategically managed in accordance with a Topsoil Management Plan.
E2	A topsoil inventory, which identifies the topsoil requirements for rehabilitation and availability of suitable topsoil on site, must be provided with any Estimated Rehabilitation Cost application.
E3	Preventing contaminant release to land Contaminants must not be released to land in manner that constitutes a nuisance, material harm or serious environmental harm.
E4	Storage and handling of chemicals and flammable or combustible liquids All chemicals and flammable or combustible liquids must be stored and handled in accordance with the most recent version of an Australian Standard where such is applicable. Where no relevant Australian Standard exists, store such materials within an effective on-site containment system.
E5	Surrender The holder must meet the conditions of this schedule prior to the surrender of the environmental authority.

E6	Rehabilitation – Saraji East project Land disturbed by the Saraji East project must be rehabilitated to a stable landform with self-sustaining final land use in accordance with Table E1: Post-mining land use for Saraji East project disturbance areas and Attachment E1: Saraji East Project Post-Mining Land Uses.
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Table E1: Post-mining land use for Saraji East project disturbance areas

Disturbance type	Mining domains	Post-Mining Land Use
Surface Infrastructure	Infrastructure – roads, pipelines, powerlines, access roads and rail crossing, water storages, accommodation village	Cattle grazing – same as pre-mining grazing land suitability class (refer Attachment E2: Saraji East Project Grazing Land Suitability) Dryland cropping – in areas identified as Strategic Cropping Land (refer Attachment E3: Saraji East Project Strategic Cropping Land)
	IMG drainage network	Cattle grazing - same as pre-mining grazing land suitability class (refer Attachment E2: Saraji East Project Grazing Land Suitability)
	Water infrastructure	Water storage / Woodland habitat / Cattle grazing
Underground mining	Temporary ponded areas	Woodland habitat - pre-existing regional ecosystems Cattle grazing – same as pre-mining grazing land suitability class (refer Attachment E2: Saraji East Project Grazing Land Suitability)
	Subsidence impacts	Woodland habitat – pre-existing regional ecosystems Cattle grazing – same as pre-mining grazing land suitability class (refer Attachment E2: Saraji East Project Grazing Land Suitability)
Watercourse / drainage lines	Direct/indirect impacts from mining activities	Watercourse

Schedule F: Surface Water

Condition number	Condition
F1	Contaminant Release Contaminants that will or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the mining activities, except as permitted under the conditions of this environmental authority.

F2	Water general All determinations of water quality and biological monitoring must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; b) made in accordance with methods prescribed in the latest edition of the Queensland Government's 'Monitoring and Sampling Manual 2018 – Environmental Protection (Water) Policy 2009'; c) collected from the monitoring locations identified within this environmental authority, within ten hours of each other where possible; d) carried out on representative samples; e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used; f) all water quality monitoring data must be provided to the administering authority via WaTERS / in the specified electronic format as part of the annual return process.
F3	Surface water monitoring Surface waters must be monitored: a) at the monitoring points identified in Table F1: Receiving Waters Upstream Background and Downstream Monitoring Points and Attachment F1: Surface Water Monitoring Locations; and b) for the quality characteristics and monitoring frequency specified in Table F2: Surface water quality objectives.

Table F1: Receiving Waters Upstream Background and Downstream Monitoring Points

Monitoring Point (MP)	Receiving Waters Location Description	Easting (GDA94)	Northing (GDA94)
Upstream Background Monitoring Points			
MP5 (SRM)	Hughes Creek – 5400m downstream of RP2, 1930m downstream of RP3, 2100m downstream of RP6, 6900m downstream of RP9 This is upstream of Saraji East mining activities	634503	7525720
MP10 (PDM)	Boomerang Creek between Saraji Coal Mine and Saraji East Mine	632086	7529980
Downstream Monitoring Points			
To be installed	Hughes Creek downstream of Saraji East mining activities, at the confluence of Hughes and Boomerang Creeks	638482	7529068

Table F2: Surface water quality objectives

Quality Characteristic ¹	Unit	Water quality objectives ²	Monitoring Frequency
pH (pH units)	pH units	>6.5 or <9.0	1. For receiving water monitoring – when there is a release including runoff events and uncontrolled releases from Saraji East Mine 2. For water storage monitoring – as per Table F3
Electrical Conductivity (µS/cm)	µS/cm	<2,000	
Turbidity (NTU)	NTU	Interpretation only	
Flow (m³/s)	m³/s	Interpretation only	
Ammonia ⁷	µg/L	20	

Nitrate ⁸	µg/L	60 (low flow) 288 (high flow)
Aluminium ³	µg/L	416
Antimony ⁴	µg/L	9
Arsenic ⁴	µg/L	13
Chromium ⁴	µg/L	1
Cobalt ⁴	µg/L	1.4
Copper ⁶	µg/L	2
Iron ³	µg/L	1130
Manganese ⁴	µg/L	1900
Mercury ⁴	µg/L	0.2
Molybdenum ⁴	µg/L	34
Nickel ⁴	µg/L	11
Selenium ⁴	µg/L	5
Silver ⁴	µg/L	0.05
Uranium ⁶	µg/L	1
Zinc ⁴	µg/L	8
Fluoride ⁵	µg/L	2000
Petroleum hydrocarbons (C6-C9) ⁶	µg/L	20
Petroleum hydrocarbons (C10-C36) ⁶	µg/L	100

NOTES:

1. For interpretation purposes only
2. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger
3. For aquatic ecosystem protection, based on 80th percentile of background data
4. For aquatic ecosystem protection based on ANZECC & ARM CANZ (2000)
5. For Protection of livestock and short-term irrigation guideline ANZECC and ARM CANZ (2000)
6. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR
7. Upper Isaac River catchment waters WQO
8. Developed sub-regional WQO

F4	Unless otherwise advised by the administering authority, if a water quality characteristic measured at a downstream site specified in Table F1: Receiving Waters Upstream Background and Downstream Monitoring Points exceeds any water quality objective specified in Table F2: Surface water quality objectives, the holder of this environmental authority must compare this result to the applicable upstream site and: a) If the quality measured at a downstream site is equal to or less than the quality measured at the applicable upstream site, no further action is required; or b) If the quality measured at a downstream site is greater than the quality measured at the applicable upstream site, complete an investigation into the cause of the deterioration in water quality and the potential for environmental harm and submit a written report to the administering authority within 20 business days outlining: i) details of the investigation carried out including any assumptions and limitations of the investigation; ii) findings of the investigation including an explanation of the cause identified; iii) recommendations of the investigation; and iv) actions taken to prevent environmental harm.
F5	Receiving Environment Monitoring Program (REMP) The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions). For the purposes of the REMP, the receiving environment refers to the waters of the Boomerang Creek and Hughes Creek and connected or surrounding waterways within five (5) kilometres downstream of the mining activity.

F6	The REMP must at a minimum: a) address and comply with the latest version of the administering authority's guideline <i>Receiving environment monitoring program guideline (ESR/2016/2399)</i>; and b) assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); c) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; d) include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the mining activity (as a minimum, the locations specified in Table F1: Receiving Waters Upstream Background and Downstream Monitoring Points; e) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the Queensland Water Quality Guidelines 2009. This should include monitoring during periods of natural flow irrespective of mine or other discharges; f) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table F2: Surface water quality objectives; g) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); h) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology; i) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; j) describe sampling and analysis methods and quality assurance and control; and k) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
F7	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions F5 and F6 must be prepared annually by an appropriately qualified person. This report must include the following: a) an assessment of background reference water quality; b) the condition of downstream water quality compared against water quality objectives; and c) recommendations for further investigation or actions; d) recommendations for changes or improvements to the monitoring program; and e) all monitoring results; and f) a description of all conclusions formed.

F8	Water storage monitoring The quality of water in all water storages for Saraji East project must be monitored: a) at the location and at the monitoring frequency specified in Table F3: Water storage monitoring; b) for relevant water quality characteristics as identified in Table F2: Surface water quality objectives based on operational use c) including the volume of the water storage in ML at the time of monitoring.
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Table F3: Water storage monitoring

Water Storage	Water Storage Description	Location	Monitoring point	Monitoring frequency
PWD	Process water dam including MAW	TBA <<INSERT location details Name; GDA2020 MGA2020 Zone xx (Eastings and Northings) - (decimal degrees to be provided to a minimum of 3 decimal places) >>	<e.g., Dam spillway>	Annually

F9	Water Management Plan A Water Management Plan must be developed prior to commencement of the Saraji East project by an appropriately qualified person(s) and implemented for all mining activities. The Water Management Plan must address, as a minimum, the following: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) be developed in accordance with administering authority's guideline <i>Preparation of water management plans for mining activities</i> and include: i. a study of the source of contaminants; ii. a water balance model for the site; iii. a water management system for the site; iv. measures to manage and prevent saline drainage; v. measures to manage and prevent acid rock drainage; vi. contingency procedures for emergencies; and vii. a program for monitoring and review of the effectiveness of the Water Management Plan.
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F10	The Water Management Plan must be reviewed each calendar year by an appropriately qualified person(s). The review must be documented and: a) include a statement that the Water Management Plan has been reviewed by an appropriately qualified person; and b) assess the plan against the requirements under condition F9; and c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; and d) provide details and timelines of the actions to be taken; and e) identify any amendments to be made to the Water Management Plan.
F11	A copy of the Water Management Plan must be kept up to date following each annual review and must be provided to the administering authority on request.
F12	Saline drainage The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.
F13	Acid rock drainage The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.
F14	Stormwater and water sediment controls An Erosion and Sediment Control Plan must be developed by an appropriately qualified person for all stages of the mining activities on the site, and must include an Implementation Plan.
F15	The Erosion and Sediment Control Plan, required by condition F14 must demonstrate how erosion and sediment control measures detailed in the plan adequately minimise the release of sediment to receiving waters and must include at least the following: a) an assessment of the size and characteristics of all catchment areas; b) an assessment of relevant properties of soils and waste materials; c) identification of receiving waters environmental values, water quality objectives and management intent; d) specification of minimum design criteria for erosion and sediment control structures to achieve the management intent of receiving waters; e) general locations and descriptions of erosion and sediment control measures; and f) an audit schedule to ensure erosion and sediment control measures are maintained.
F16	The Erosion and Sediment Control Plan required by condition F14 must be reviewed each calendar year by an appropriately qualified person.

F17	The review required by condition F16 must be documented and must: a) include a statement that the Erosion and Sediment Control Plan has been reviewed by an appropriately qualified person; and b) assess the plan against the requirements of condition F15; and c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; and d) provide details and timelines of the actions to be taken; and e) identify any amendments made to the Erosion and Sediment Control Plan.
F18	A copy of the Erosion and Sediment Control Plan must be kept up to date following each annual review and must be provided to the administering authority on request.
F19	Stormwater, other than mine affected water, is permitted to be released to waters from: a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition F14; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions F9 and F10, for the purpose of ensuring water does not become mine affected water; and c) catchments the subject of the current version of the Erosion and Sediment Control Plan required by condition F17.
F20	The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.
F21	Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.
F22	Transfer of water Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as dams or tanks, for the purpose of supplying water to any operation licensed for either ERA13 (mining black coal) or ERA31 (mineral processing). The volume, pH and electrical conductivity of water transferred must be monitored and recorded.
RR1	Conditions F5 to F7 do not apply if the environmental authority holder is a participant of the Fitzroy Regional Receiving Environment Monitoring Program (FRREMP).
RR2	The environmental authority holder must notify the administering authority in a written statement within twenty (20) business days of ceasing to be a participant of the FRREMP. The written statement must detail how the environmental authority holder is going to fulfil the requirements of conditions F5 to F7.

Schedule G: Structures	
Condition number	Condition
G1	Assessment of consequence category The consequence category of any structure must be assessed by a suitably qualified and experienced person, in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.4, 7 July 2025) (ESR/2016/1933), at the following times: a) prior to the design and construction of the structure; or b) prior to any change in its purpose or the nature of its stored contents.
G2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.4, 7 July 2025) (ESR/2016/1933).
G4	Design and construction of a regulated structure All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.4, 7 July 2025) (ESR/2016/1933). <i>NOTE: Certification of design and construction may be undertaken by different persons.</i>
G5	Construction of a regulated structure is prohibited unless the environmental authority holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this environmental authority.
G6	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.4, 7 July 2025) (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.

G7	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.4, 7 July 2025) (ESR/2016/1933)</i>; b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i. floodwaters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line; c) for regulated dams associated with a failure to contain – seepage, have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
G8	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and b) construction of the regulated structure is in accordance with the design plan.
G9	Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the environmental authority holder has submitted to the administering authority: a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with conditions G5 and G6; b) a set of 'as constructed' drawings and specifications; c) certification of those 'as constructed drawings and specifications' in accordance with condition G8; d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; e) the requirements of this environmental authority relating to the construction of the regulated structure have been met; f) the environmental authority holder has entered the details, required under this environmental authority, into the Register of Regulated Structures; and g) there is a current operational plan for the regulated structures.
G10	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

G11	Mandatory Reporting Level Conditions G12 to G15 inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G12	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that, during routine inspections of that dam, it is clearly observable.
G13	The environmental authority holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
G14	The environmental authority holder must immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
G15	The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures.
G16	Design Storage Allowance The environmental authority holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
G17	By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
G18	The environmental authority holder must notify the administering authority as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year.
G19	The environmental authority holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G20	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G21	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
G22	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i> .

G23	The environmental authority holder must: a) within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: i. the recommendations section of the annual inspection report; if applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the environmental authority holder, provide this to the administering authority within ten (10) business days of receipt of the request.
G24	Transfer arrangements The environmental authority holder must provide a copy of any reports, documentation and certifications prepared under this environmental authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
G25	Register of Regulated Structures A Register of Regulated Structures must be established and maintained by the environmental authority holder for each regulated structure.
G26	The environmental authority holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated structure is submitted to the administering authority.
G27	The environmental authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with conditions G8 and G9 has been achieved.
G28	The environmental authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
G29	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the environmental authority holder, or their delegate, as being accurate and correct.

Schedule H: Sewage Treatment

Condition number	Condition
H1	Treated sewage effluent The cumulative total daily peak design capacity of the sewage treatment plant/s must not exceed 125 equivalent persons (EP) at Saraji East project. <i>Note: Small package plants and/or septic systems, each with a daily peak design capacity less than 21EP, are not included in the cumulative total daily peak design capacity.</i>

H2	Treated sewage effluent must not be directly released from the sewage treatment plant/s to any waters. <i>Note: 'waters' does not include structures associated with the mine affected water management system.</i>
H3	Treated sewage effluent must not be used for any purpose, other than: a) removed as waste; or b) released to the mine affected water management system for mixing with other mine affected water, and potential further reuse for dust suppression or firefighting.
H4	Treated sewage effluent that is released in accordance with condition H3(a) and has mixed with other mine affected water must be managed as mine affected water in accordance with the conditions of this environmental authority.
H5	Treated sewage effluent that is released in accordance with condition H3(b) must be carried out in a manner such that: a) vegetation is not damaged; b) there is no surface ponding of effluent; c) there is no run-off of treated sewage effluent to waters; d) there is no risk to human health.
H6	Treated sewage effluent released in accordance with condition H3(b) from any sewage treatment plant that has a daily peak design capacity of greater than 21EP must be monitored: a) at the point where the treated sewage effluent is released from the sewage treatment plant/s; b) for the quality characteristics and frequency specified in Table H1: Treated Sewage Effluent Monitoring Requirements and Release Limits for Saraji East project.

Table H1: Treated Sewage Effluent Monitoring Requirements and Release Limits for Saraji East project

Quality Characteristic	Units	Monitoring Frequency	Release Limit	Limit Type
5-day Biochemical Oxygen Demand (uninhibited)	mg/L	Monthly	50	Maximum
pH	pH units	Monthly	6.0 to 9.0	Range
E.Coli	Colonies per 100mL	Monthly	100	Maximum
Total suspended solids (TSS)	mg/L	Monthly	30	Maximum
Total nitrogen (TN)	mg/L	Monthly	30	Maximum
Total phosphorus (TP)	mg/L	Monthly	15	Maximum

H7	If treated sewage effluent is being released in accordance with condition H3(b): a) the results of monitoring in accordance with condition H6 must not exceed the release limits specified in Table H1: Treated Sewage Effluent Monitoring Requirements and Release Limits for Saraji East project; and b) the release must not cause spray drift or over spray to any sensitive place or commercial place.
H8	If the release limits specified in Table H1: Treated Sewage Effluent Monitoring Requirements and Release Limits for Saraji East project are exceeded in accordance with condition H7(a), the environmental authority holder must notify the administering authority in accordance with conditions A10 and A11.
H9	For the Saraji East project sewage treatment plant, the following requirements must also be met: a) The flow must be measured and must not exceed 23 kL/day (averaged over the calendar month) to the process water dam (PWD); and b) The treated sewage effluent meets standard 'Class B' recycled water and is managed as per the latest version of the Guideline for low-exposure recycled water schemes (Queensland Health).
H10	All sewage treatment monitoring data must be provided to the administering authority via WaTERS as part of the annual return.

Schedule I: Groundwater	
Condition number	Condition
I1	The holder of this environmental authority must not release contaminants to groundwater.
I2	For existing bores identified as to be confirmed (TBC⁴) in Table I3: Groundwater standing water level trigger threshold, the Groundwater Trigger Level (m below top of casing) and supporting information on their calculation, must be provided to the administering authority for inclusion prior to the commencement of the Saraji East project.
I3	For bores identified in Table I1: Groundwater Monitoring Locations and Frequencies the holder must: a) install new bores with sufficient time prior to the commencement of Saraji East project, to inform the Groundwater Monitoring and Management Plan required by condition I7; and b) monitor bores with TBC values in Table I2: Groundwater Quality Limits and Table I3: Groundwater standing water level trigger threshold to achieve a minimum 18 data points in a 24-month period; and c) provide proposed trigger levels (quality characteristics and water levels) for inclusion in Table I2: Groundwater Quality Limits and Table I3: Groundwater standing water level trigger threshold and supporting information on their calculation to the administering authority twelve (12) months prior to the commencement of the Saraji East project.

14	The Saraji East project must not commence until all information to be confirmed (TBC) within tables Table I1: Groundwater Monitoring Locations and Frequencies ; Table I2: Groundwater Quality Limits and Table I3: Groundwater standing water level trigger threshold are resolved.
15	Bore construction The construction, management, maintenance and decommissioning of groundwater monitoring bores must be undertaken in a manner that: a) prevents contaminants entering the groundwater; ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and maintains the hydrogeological environment within the hydrogeological unit.
16	A bore report must be kept for each monitoring bore which includes: a) a unique identification reference number and geographic coordinate location; and b) construction information including but not limited to the depth of bore, depth, length and height of casing, depth and length of screening and bore sealing details; and c) stratigraphy and target hydrogeological unit of the bore; and depth at which groundwater was intercepted and the final standing water level (SWL) after bore development.
17	Groundwater Monitoring and Management Program A Groundwater Monitoring and Management Program (GMMP) must be: a) developed by an appropriately qualified person prior to commencement of the Saraji East project; and b) implemented and maintained by the environmental authority holder for all stages of the mining activities.

I8	The GMMP required by condition I7 must describe a program of data collection and analysis which achieves the following: a) provide a hydrogeological conceptual and an updated numerical groundwater model; b) identify all potential sources of contamination to groundwater from the activities; c) identify all environmental values that may be impacted; d) identify hydrogeological units present across and adjacent to the site to confirm existing groundwater flow paths and levels; e) identify how all potential groundwater impacts due to the activities authorised under this environmental authority are identified, monitored and where required mitigated within expected timeframes and with actions documented; f) ensure adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives: i. detect any impacts to groundwater quality due to the activities authorised under this environmental authority; ii. detect any changes to groundwater level due to the activities authorised under this environmental authority; iii. determine compliance with condition I10; iv. determine trends in groundwater quality; v. determine any interaction or impact from groundwater on surface water; g) document groundwater management and monitoring methodologies to be undertaken for the duration of all the activities authorised under this environmental authority; h) document groundwater bore Ground Level surface RL (m), Top of Casing elevation (m AHD), Screen Interval; i) document an appropriate quality assurance and quality control program; j) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.
I9	The GMMP must be reviewed every two (2) years by an appropriately qualified person to determine if it continues to meet the requirements stated in condition I8, and the GMMP must be updated as required by the outcomes of the review.
I10	Groundwater Models The groundwater models required by condition I8(a), must be reviewed and consequently updated by an appropriately qualified person at least every 5 years. Other intervals may be requested by the administering authority in writing, if the observed groundwater levels are not consistent with those predicted by the groundwater model.
I11	The groundwater models review required by condition I10 must: a) include all hydrogeological units potentially impacted by the activities authorised under this environmental authority; b) be undertaken in accordance with the most recent version of the 'Australian Groundwater Modelling Guidelines' (2012); c) be validated and recalibrated with all recent monitoring data; and d) be documented and recorded.

I12	Within 90 days of completion of the review under condition I10, the environmental authority holder must submit a report to the administering authority that includes the following details: a) changes to predicted end of mine life; and post-mining standing water level (SWL) in all major hydrogeological units; b) changes to the model predictions of impacts to environmental values; c) where residual voids are proposed, the changes to predicted post-mining void water levels and water quality; and d) recommended amendments to EA conditions.
I13	Upon submission of the report required by condition I12, all comments given by the administering authority must be incorporated into the groundwater models required by condition I8(a).
I14	Groundwater monitoring Groundwater quality and standing water levels must be monitored: a) at the locations and at the frequencies specified in Table I1: Groundwater Monitoring Locations and Frequency and as shown in Attachment I1: Groundwater Monitoring Locations; and b) for the quality characteristics specified in Table I2: Groundwater Quality Limits.
I15	Groundwater quality Groundwater quality measured from a compliance bore specified in Table I1: Groundwater Monitoring Locations and Frequency must not exceed any of the groundwater quality limits specified in Table I2: Groundwater Quality Limits on more than three (3) consecutive sampling occasions.
I16	If groundwater from a compliance bore identified in Table I1: Groundwater Monitoring Locations and Frequencies exceeds the groundwater quality limits specified in Table I2: Groundwater Quality Limits on three (3) consecutive occasions; a) the administering authority must be notified within 24 hours of becoming aware of the exceedance; b) an investigation must be completed and a report on the investigation findings must be submitted to the administering authority (via WaTERS) within twenty (20) days of receiving the water analysis results; c) the report must include a determination of whether the exceedance is caused by: i. mining activities authorised under this environmental authority; or ii. natural variation; or iii. neighbouring land use resulting in groundwater impacts; or iv. other basis.
I17	If the investigation under condition I16 determines that the exceedance was caused by the mining activities including construction and rehabilitation authorised under this environmental authority, then a further investigation must be undertaken which must determine whether environmental harm has occurred or may occur, and the extent thereof.

I18	If the investigation undertaken under condition I17 determines that environmental harm has occurred, or may occur, the following action must be taken within twenty-eight (28) days after completing the investigation under condition I17: a) implementation of interim mitigation measures to reduce environmental harm including potential environmental harm where possible; b) development of long-term mitigation measures to address any existing groundwater contamination and prevent recurrence of groundwater contamination which is to be implemented in a nominated reasonable time period; c) if environmental harm has occurred as a result of groundwater drawdown exceedances, i. determine any actions required to reduce the potential for environmental harm; ii. determine any mitigation measures required to limit the drawdown in the affected groundwater resource; and iii. document the steps taken under condition I18 (a), (b), and (c), and provide the documentation to the administering authority.
I19	All groundwater sampling and monitoring methods must be in accordance with the latest version of the administering authority's <i>Monitoring and Sampling Manual 2018 – Environmental Protection (Water) Policy 2009</i> unless otherwise approved by the administering authority.
I20	Groundwater Standing Water Level Groundwater Standing Water Level (SWL) when measured at the compliance bores specified in Table I1: Groundwater Monitoring Locations and Frequencies must not exceed the Groundwater Trigger Level specified in Table I3: Groundwater standing water level trigger threshold.
I21	If the Level Trigger Thresholds of groundwater measured at compliance bores specified in Table I1: Groundwater Monitoring Locations and Frequencies exceeds (falls below) any of the corresponding Level Trigger Thresholds specified in Table I3: Groundwater standing water level trigger threshold, the holder of the environmental authority must: a) notify the administering authority via WaTERS within 24 hours of becoming aware; b) complete an investigation into the cause of the exceedance within ten business days, or an extended time as agreed to with the administering authority; and c) if the investigation carried out under part b) determines that the mining activities are a potential cause or contributor to the exceedance, i. notify the administering authority via WaTERS within 24 hours of making the determination; and ii. within 10 business days notify the administering authority of the actions taken to ensure compliance with condition I20 of this environmental authority.
I22	Groundwater data submissions Annual groundwater monitoring data must be submitted to the administering authority via WaTERS by 30 September for the preceding financial year.

I23	Bi-Annual Groundwater Monitoring Report A bi-annual Groundwater Monitoring Report (BGMR) is required to be completed every 2 years and submitted to the administering authority by 30 September every 2 years. The BGMR must include: a) presentation and analysis of the groundwater quality and standing water level of all groundwater monitoring bores (including compliance and interpretation) listed within Table I1: Groundwater Monitoring Locations and Frequency; b) an assessment of water quality and water level trends at all groundwater monitoring bores listed Table I1: Groundwater Monitoring Locations and Frequency; c) details of any review undertaken of the groundwater numerical model; d) an assessment of any impacts on groundwater quality and level due to the mining activities; e) details including location coordinates of any Additional Compliance Bores for inclusion in Table I1: Groundwater Monitoring Locations and Frequency; f) an assessment of any differences between the modelled groundwater level impacts and actual impacts at those monitoring bores where groundwater trigger levels have been determined in Table I3: Groundwater standing water level trigger threshold; g) comparison with receiving environment surface water quality monitoring results to determine any interaction or impact from groundwater on surface water.
I24	Groundwater Dependent Ecosystems (GDEs) The mining activities for Saraji East project must not cause environmental harm to any groundwater dependant ecosystems, as illustrated in Attachment I2: Groundwater Dependent Ecosystems Locations.
I25	Prior to commencement of Saraji East project, a Groundwater Dependent Ecosystem Monitoring and Management Plan (GDEMMP) must be developed, implemented and maintained to ensure compliance with condition I24. The GDEMMP must include: a) additional baseline data collection for a minimum of two (2) years prior to commencement of the activity, on the ecological condition of GDEs on Hughes Creek; and b) a monitoring methodology that is implemented for the life of mine and post-mining

Table I1: Groundwater Monitoring Locations and Frequency

Monitoring Point	Hydrogeological Unit	Easting (GDA94)	Northing (GDA94)	Ground level surface RL (m)	Screened Interval RL (mbgl)	Monitoring Frequency	Description
Interpretation Bores							
MB31	Back Creek Group - Permian Coal Seam	625942	7522560	282.2**	TBC**	Quarterly	West of Jacaranda/Bauhinia and Coolabah/Dogwood voids
MB32	Alluvium	637595	7510716	201.8***	TBC**	Quarterly	Phillips Creek upstream
MB37	Back Creek Group - Overburden	632384	7515569	234.8	34 - 42.5	Quarterly	West of Ebony/Grevillea voids
MB38	Alluvium	639919	7515861	194.3	5.2 – 8.3	Quarterly	Phillips Creek downstream
MB20SRM04A	Alluvium	631397	7530470	194.9	6.4 – 9.5	Monthly*	East of Jacaranda Pit
MB20SRM01A	Alluvium	635922	7527665	186.4	7.5 – 10.5	Monthly*	East of Bauhinia Pit
MB20SRM05A	Alluvium	634476	7525798	192.0	6.5 – 9.5	Quarterly	East of Bauhinia Pit
Compliance Bores							
MB33	Moranbah Coal Measures - Q Seam	636606	7520168	194.8	30 - 36	Quarterly	West of Ebony/Grevillea voids
MB34	Moranbah Coal Measures – P seam	637892	7518245	195.9	99.5 – 105.5	Quarterly	West of Ebony/Grevillea voids
MB35	Tertiary Interburden / Permian Overburden	642646	7520110	184.6	27 - 33	Quarterly	East of Ebony/Grevillea and Hakea voids and immediately north of Phillips Creek
MB36	Tertiary	640150	7514283	197.6	24.5 – 30.5	Quarterly	Adjacent to Philips Creek downstream of SRM
MB39	Moranbah Coal Measures (coal seam S01) and siltstone	640018	7515876	194.3	84.5 – 90.5	Quarterly	East of Grevillea Pit

Monitoring Point	Hydrogeological Unit	Easting (GDA94)	Northing (GDA94)	Ground level surface RL (m)	Screened Interval RL (mbgl)	Monitoring Frequency	Description
	underburden and overburden						
MB40	Tertiary	640026	7515867	194.4	14 - 20	Quarterly	East of Grevillea Pit
MB20SRM02T	Fort Cooper Coal Measures Overburden	635914	7527670	186.6	27.4 – 36.5	Monthly*	East of Bauhinia Pit
MB20SRM03P	Moranbah Coal Measures – P seam	635914	7527670	186.61	27.4 – 36.5	Monthly*	East of Bauhinia Pit
SEMLP1T ¹	Tertiary/Regolith	637628	7528964	TBC	TBC	Monthly*	Adjacent to Boomerang Creek
SEMLP1P ¹	Moranbah Coal Measures - P seam	637735	7528962	TBC	TBC	Monthly*	Adjacent to Boomerang Creek
SEMLP2T ¹	Tertiary/Regolith	637672	7523955	TBC	TBC	Monthly*	East of Underground
SEMLP2P ¹	Moranbah Coal Measures - P seam	637863	7524055	TBC	TBC	Monthly*	East of Underground
TBC ^{1,2}	Tertiary	TBC	TBC	TBC	TBC	Monthly*	

NOTES:

* Bores to be sampled monthly to comply with **condition 13**, then quarterly.

** Landholder bore, derived from QLD Elevation model data, to be advised to comply with **condition 12**

*** Landholder bore, derived from BMA MTD Monthly Elevation data June 2025, to be advised to comply with **condition 12**

1. Easting, northing and RLs to be confirmed at bore installation and details incorporated in the EA in accordance with **condition 14**.

2. Additional Tertiary bore to be sourced and details confirmed for DETSI acceptance and incorporation into the EA in accordance with **condition 13**.

Table I2: Groundwater Quality Limits

Quality Characteristic	Units	MB31, MB32, MB37, MB38, MB20SRM04A, MB20SRM01A, MB20SRM05A	Trigger Levels												
			MB33	MB34	MB35	MB36	MB39	MB40	MB20SRM02T	MB20SRM03P	SEMLP1T	SEMLP1P	SEMLP2T	SEMLP2P	TBC (Tertiary bore)
pH	pH units	Monitored for interpretative reasons only – no triggers apply	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 – 8.5
Electrical Conductivity	µS/cm		25,170	29,720	16,000	16,000	16,000	8,910	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²
SO ₄	mg/L		2580	398	398	477	398	318	TBC2	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²
Iron ¹	µg/L		1600	700	1700	2600	700	700	TBC2	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²
Aluminium ¹	µg/L		55	55	55	55	55	55	55	55	55	55	55	55	55
Arsenic ¹	µg/L		13	13	13	13	13	13	13	13	13	13	13	13	13
Mercury ¹	µg/L		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Antimony ¹	µg/L		9	9	9	9	9	9	9	9	9	9	9	9	9
Chromium ¹	µg/L		6	6	6	6	6	6	6	6	6	6	6	6	6
Cobalt ¹	µg/L		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Copper ¹	µg/L		5	5	5	5	5	5	5	5	5	5	5	5	5
Manganese ¹	µg/L		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Molybdenum ¹	µg/L		34	34	34	34	34	34	34	34	34	34	34	34	34
Nickel ¹	µg/L		11	11	11	11	11	11	11	11	11	11	11	11	11
Selenium ¹	µg/L		5	5	5	5	5	5	5	5	5	5	5	5	5
Silver ¹	µg/L		1.4	1.3	1	1	1.2	1	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²
Uranium ¹	µg/L		4	4	4	4	4	4	15	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²	TBC ²
Zinc ¹	µg/L	50	50	50	50	50	50	50	50	50	50	50	50	50	
TPH C6-C10	µg/L	20	20	20	20	20	20	20	20	20	20	20	20	20	

Quality Characteristic	Units	MB31, MB32, MB37, MB38, MB20SRM04A, MB20SRM01A, MB20SRM05A	Trigger Levels												
			MB33	MB34	MB35	MB36	MB39	MB40	MB20SRM02T	MB20SRM03P	SEMLP1T	SEMLP1P	SEMLP2T	SEMLP2P	TBC (Tertiary bore)
TPH >C10-C40	µg/L		100	100	100	100	100	100	100	100	100	100	100	100	100
Major ions (Calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate)	mg/L		For interpretation purposes only												

NOTES:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger value.
2. Site-specific trigger levels to be developed once a suitable dataset is available in accordance with **condition 14**.

Table I3: Groundwater standing water level trigger threshold

Monitoring Bore	Hydrogeological Unit	Top of casing elevation (mAHD)	Ground level surface RL (m)	Groundwater Trigger Level (m below top of casing)
MB33	MCM Q Seam	195.30	194.80	35 ¹
MB34	MCM Interburden	196.42	195.92	104.5 ²
MB35	Tertiary Interburden / Permian Overburden	185.31	184.61	TBC ⁴
MB36	Tertiary	198.50	197.80	TBC ⁴
MB39	MCM (coal seam S01) and siltstone underburden and overburden	194.84	194.30	TBC ⁴
MB40	Tertiary	194.92	194.41	TBC ⁴
MB20SRM02T	Fort Cooper Coal Measures Overburden	187.11	186.61	26.9
MB20SRM03P	MCM P seam	187.62	185.87	106.1
SEMLP1T	Tertiary/Regolith	TBC	TBC	14.2 ³
SEMLP1P	MCM P seam	TBC	TBC	24.3 ³
SEMLP2T	Tertiary/Regolith	TBC	TBC	10.9 ³
SEMLP2P	MCM P seam	TBC	TBC	79.3 ³
TBC	Tertiary	TBC	TBC	TBC ³

NOTES:

1. Interim trigger level. Bore predicted to run dry. Replacement bore and trigger level to be established prior to bore screen going dry.
2. Interim trigger level. Bore predicted to run dry. Replacement bore and trigger level to be established prior to bore screen going dry.
3. Groundwater level trigger (as maximum predicted drawdown) to be confirmed at completion of drilling when location is confirmed.
4. Groundwater level trigger (as maximum predicted drawdown) to be provided in accordance with **condition I2**.

Schedule J: Biodiversity	
Condition number	Condition
J1.	Prescribed Environmental Matters – Matters of State Environmental Significance (MSES) – Saraji East project Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the <i>Environmental Offsets Act 2014</i> unless the impact(s) is specified in Table J1: Authorised significant residual impacts to prescribed environmental matters – Saraji East project.
J2.	All impacts to MSES for Saraji East project must be determined, documented, and mapped by an appropriately qualified person.
J3.	Records of impacts to MSES in condition J2 must be kept for the life of the environmental authority and include: a) The size and extent of impact; b) Details about the condition of the MSES (e.g. dominant vegetation and remnant status); c) A determination of whether the impact is a significant residual impact.
J4.	Environmental Offsets An environmental offset made in accordance with the <i>Environmental Offsets Act 2014</i> and Queensland Environmental Offsets Policy, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table J1: Authorised significant residual impacts to prescribed environmental matters – Saraji East project, unless a lesser extent of the impact has been approved in accordance with condition J1. Note: Deemed conditions provided in section 16 of the <i>Environmental Offsets Act 2014</i> also apply to this authority. Any contravention of a deemed condition will be dealt with under the <i>Environmental Protection Act 1994</i>.

Table J1: Authorised impacts to prescribed environmental matters – Saraji East project

Prescribed environmental matters – matters of State environmental significance (MSES)		Location of impact	Maximum direct impact Area (ha)	Total Significant Residual Impact Area (ha)	Impact Requiring Offset	
Regulated Vegetation						
Endangered Regional Ecosystem	RE 11.3.1	Refer Attachment J1	1.32	1.32	Yes ¹	
	RE 11.4.8		36.84	36.84	Yes ¹	
	RE 11.4.9		3.47	3.47	Yes ¹	
Of Concern Regional Ecosystem	RE 11.3.2		8.18	8.18	Yes	
	RE 11.3.4		6.95	6.95	Yes	
	RE 11.4.2		13.30	13.30	Yes	
RE within the defined distance of a watercourse	RE 11.3.1		0.01	0	No	
	RE 11.3.25		11.58	11.58	Yes	
	RE 11.3.2		2.75	0	No	
	RE 11.3.4		1.7	0	No	
	RE 11.4.2		0.22	0	No	
	RE 11.4.8		0.07	0	No	
	RE 11.5.3		1.68	0	No	
RE within the defined distance of a wetland	RE 11.3.27f		2.08	2.08	Yes	
	RE 11.3.4		0.04	0	No	
	RE 11.5.3		0.03	0	No	
Connectivity areas				161.96	161.96	Yes
Protected Wildlife Habitat						
Squatter pigeon (<i>Geophaps scripta scripta</i>)	Vulnerable (NC Act, EPBC Act)	Refer Attachment J2-5	567.0	113.6	Yes ¹	
Ornamental snake (<i>Denisonia maculata</i>)	Vulnerable (NC Act, EPBC Act)		389.44	386.2	Yes ¹	
Koala (<i>Phascolarctos cinereus</i>)	Endangered (NC Act, EPBC Act)		TBA	TBA	Yes ¹	
Greater glider (<i>Petauroides volans</i>)	Endangered (NC Act, EPBC Act)		88.41	38.6	Yes ¹	
Australian painted Snipe (<i>Rostratula australis</i>)	Endangered (NC Act, EPBC Act)		387.13	0	No	

Prescribed environmental matters – matters of State environmental significance (MSES)		Location of impact	Maximum direct impact Area (ha)	Total Significant Residual Impact Area (ha)	Impact Requiring Offset
Grey Falcon (<i>Falco hypoleucos</i>)	Vulnerable (NC Act, EPBC Act)		1157.74	0	No
Short-beaked Echidna	Special Least Concern		2959.52	0	No
Threatened flora species					
<i>Dichanthium setosum</i> (Bluegrass)	Vulnerable (EPBC Act)		0.08	0	No
<i>Dichanthium queenslandicum</i>	Vulnerable (NC Act) Endangered (EPBC Act)		0.08	0	No
Threatened Ecological Communities (TEC)					
Brigalow (<i>Acacia harpophylla</i> dominant and codominant) TEC	Endangered (EPBC Act)		63.33	63.33 ²	Yes ¹
Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin TEC	Endangered (EPBC Act)		0.08	0	No

NOTES:

1. Denotes that this will be offset as a significant impact to an MSES protected matter under the EPBC Act.

2. Significant residual impact area includes indirect impact area

J5.	Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by condition J4 , a report completed by an appropriately qualified person that contains an analysis of the estimated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority.
J6.	The report required by condition J5 must be approved by the administering authority before the notice of election is given to the administering authority.
J7.	A notice of election for the environmental offset required by condition J6 , must be provided to the administering authority no less than three (3) months before the proposed commencement of the significant residual impacts for which the environmental offset relates.
J8.	A qualified spotter catcher is to be engaged to work ahead of the site clearing works at the commencement of the vegetation clearing activity.

Schedule K: Subsidence	
Condition number	Condition
K1.	Authorised subsidence Subject to the conditions of this environmental authority (specifically conditions K1 to K13 inclusive) the environmental authority holder is authorised to subside the areas as depicted in Attachment A2: Authorised Disturbance Footprint (Saraji East Project), resulting from underground longwall mining activities.
K2.	Ponding, as a result of mining activities, and associated drainage is only permitted to occur in the indicative areas depicted in Attachment A2: Authorised Disturbance Footprint (Saraji East Project) and must not impact prescribed environmental matters greater than the extent authorised in Table J1: Authorised impacts to prescribed environmental matters – Saraji East project .
K3.	Subsidence Management Plan A Subsidence Management Plan must be developed 6 months prior to the start of mining activities for Saraji East project and must be implemented while subsidence risks are present.
K4.	The Subsidence Management Plan must include at least the following components: a) the condition of modelled subsidence area including the existing watercourses (including a baseline assessment); b) the objectives and outcomes of the subsidence management plan; c) a risk assessment that identifies all potential impacts from subsidence on environmental values, including the watercourse and associated floodplain resulting from subsidence; d) the measures to be implemented to avoid, minimise and mitigate each potential impact; including but not limited to impacts to: i. landform conditions; ii. surface cracking;

	iii. erosion; iv. ponding; v. watercourse channel/geomorphic conditions and water quality; vi. ecology; vii. connectivity (aquatic and terrestrial fauna); viii. flow; and ix. an assessment of the adequacy of any completed repair works or recommended actions from the previous monitoring period; e) a monitoring, maintenance and evaluation program that: i. details the level of effectiveness of the measures using indicators and success criteria; ii. includes the annual review of success and appropriateness of measures; and iii. details how improvements will be implemented where success criteria are not met. f) appropriate reference to rehabilitation requirements for subsided areas including: i. rehabilitation objectives; ii. completion criteria; iii. schedule for progressive rehabilitation; and g) an action plan to address the outcomes and recommendations from annual inspections.
K5.	The Subsidence Management Plan must be endorsed by an independent appropriately qualified person, that the plan is compliant in all respects with this environmental authority.
K6.	Subsidence generating activities must not commence until the administering authority has received a copy of the endorsed Subsidence Management Plan.
K7.	The holder must keep a register of all actual disturbance associated with longwall panels detailing: a) the surface area (ha) and depth within each subsided panel, including dry subsidence areas as well as areas with ponding; b) spatial data for each area and depth of subsidence, as well as for each ponding area, c) spatial data for comparison against the modelled/predicted subsidence, and authorised ponded areas; d) the locations of pre-existing drainage lines and drainage lines to be established to prevent/manage ponding; e) the locations of proposed and existing infrastructure; f) the pre-subsidence (baseline) condition of the vegetation and land condition.
K8.	The register required by condition K7 must be provided to the administering authority upon request.

K9.	Annual inspection Each subsided longwall panel must be inspected annually by an appropriately qualified person in accordance with the following minimum requirements: a) assess the structural and geotechnical adequacy of the subsided longwall panels; b) report on the condition of the bed and banks, and riparian zone of impacted watercourses; c) identify ponding caused by subsidence; d) a comparison of the subsidence from the previous inspection; e) identify locations requiring immediate management actions; f) assess the adequacy of all mitigation measures with respect to the subsidence management plan and any previous annual inspection; and, g) detail any recommended mitigation measures or rehabilitation requirements to be undertaken.
K10.	After each annual inspection, a copy of a report including any recommendations, must be provided to the administering authority within two (2) months of completion.
K11.	Any recommended mitigation measure, as identified in the annual inspection, must be implemented within the following 12 months or earlier depending on complexity, unless otherwise agreed to by the administering authority.
K12.	The Subsidence Management Plan must be reviewed and updated to address any recommendations detailed in the annual subsidence inspection reports.
K13.	Rehabilitation of Subsidence All areas that have been affected by subsidence must be rehabilitated to a standard consistent with items a) through f) below, and endorsed by an appropriately qualified person. a) undertake management and rehabilitation progressively in accordance with the Subsidence Management Plan and Rehabilitation Management Plan; b) incorporate pre-existing natural features of any impacted watercourse (including geomorphic and vegetation); c) attain the pre-existing hydrologic characteristics of surface water and groundwater systems for the area in which any watercourse is located; d) attain sediment transport and water quality regimes that allow any watercourse to be self-sustaining, while minimising any impacts to upstream and downstream water quality, geomorphology and/or vegetation; and e) attain equilibrium and functionality in all substrate conditions at the location of any watercourses; and f) attain the pre-existing land use, including any existing regional ecosystems and the pre-mining suitability class of grazing areas.

Definitions

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Acid rock drainage means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activity.

Administering authority is the agency or department that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

Airblast overpressure means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).

Alternative arrangement in relation to a sensitive place or a commercial place, means:

- a) A written agreement:
 - i. between the environmental authority holder and a third party;
 - ii. that identifies a particular type(s) of environmental nuisance;
 - iii. about the way in which the particular environmental nuisance impact(s) will be dealt with;
 - iv. at a particular location; and
 - v. for a defined period of time.
- b) An alternative arrangement must make clear to the third party that by entering in to the agreement that:
 - i. their place will be excluded as a sensitive place or commercial place; and
 - ii. the consequences of exclusion as a sensitive place or commercial place.

Note: An alternative arrangement may include, but is not limited to, details of the nuisance abatement measures to be implemented, provision of alternative accommodation, or agreement between the parties that the location will not be considered a sensitive place or commercial place for the purposes of the Environmental Authority, for the duration of the alternative arrangement. The written agreement may be in any form, with some examples being a lease, or an agistment, or a conduct and compensation agreement under the *Mineral Resources Act 1989*.

Annual exceedance probability or AEP means the probability that at least one event in excess of a particular magnitude will occur in any given year.

Annual inspection report means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan):

- a) against recommendations contained in previous annual inspections reports;
- against recognised dam safety deficiency indicators;
- for changes in circumstances potentially leading to a change in consequence category;
- for conformance with the conditions of this authority;
- for conformance with the 'as constructed' drawings;
- for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems); and
- for evidence of conformance with the current operational plan.

ANZECC means the Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000

Appropriately qualified person means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Assessed or assessment by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

- a) exactly what has been assessed and the precise nature of that determination;
- b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

Associated works in relation to a dam, means:

- a) operations of any kind and all things constructed, erected or installed for that dam; and
- any land used for those operations.

Authority means an environmental authority or a development approval.

Bed and banks for a waters, river, creek, stream, lake, lagoon, pond, swamp, wetland or dam means land over which the water of the waters, lake, lagoon, pond, swamp, wetland or dam normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed and banks that is from time to time covered by floodwater.

Beneficial use in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- a) of benefit to that owner in that it adds real value to their business or to the general community;
- b) in accordance with relevant provisions of the *Environmental Protection Act 1994*;
- c) sustainable by virtue of written undertakings given by that owner to maintain that dam; and
- d) the transfer and use have been approved or authorised under any relevant legislation.

Biosolids means the treated and stabilised solids from sewage.

Blasting means the use of explosive materials to fracture:

- a) rock, coal and other minerals for later recovery; or
- b) structural components or other items to facilitate removal from a site or for reuse.

Bulk rubber means tyres, conveyor belt, and other similar rubber waste.

Certification in relation to regulated structures, means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* or this environmental authority, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certifying, certify or certified have a corresponding meaning as 'certification' in relation to regulated structures.

Chemical means:

- c) an agricultural chemical product or veterinary chemical product within the meaning of the Agricultural and Veterinary Chemicals Code Act 1994 (Commonwealth); or
- d) a dangerous good under the dangerous goods code; or
- e) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997; or
- f) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or
- g) any substance used as, or intended for use as:
 - a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
 - i. a surface active agent, including, for example, soap or related detergent; or
 - ii. a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
 - iii. a fertiliser for agricultural, horticultural or garden use; or
- h) a substance used for, or intended for use for:
 - i. mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
 - ii. manufacture of plastic or synthetic rubber.

Class B recycled water means the water quality standard for class B recycled water as per the *Public Health Regulation 2018*.

Commercial place means:

- a) A work place that is used as:
 - iii. an office; or
 - iv. a place of business; or
 - v. a place used for commercial purposes.
- b) Despite paragraph (a), the following places are not commercial places:
 - i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or
 - ii. places that are part of the mining activity; or
 - iii. employees accommodation or public roads; or
 - iv. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.

A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a commercial place for the purposes of that type(s) of environmental nuisance, however, remains a commercial place for the purpose of other types of environmental nuisances.

Consequence in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

Consequence category means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.

Construction or constructed in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

Contaminate means to render impure by contact or mixture.

Contaminated means the substance has come into contact with a contaminant.

Contaminant can be

- a) a gas, liquid or solid; or
- b) an odour; or
- c) an organism (whether alive or dead), including a virus; or
- d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
- e) a combination of contaminants.

Control measure means any action or activity that can be used to prevent or eliminate a hazard or reduce it to an acceptable level.

Dam means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

Dam crest volume means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

Design plan is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

Design storage allowance or DSA means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

Designer for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

Disturbance of land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth;
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;
- c) carrying out mining within a watercourse, waterway, wetland or lake;
- d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;
- e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after the mining activity has ceased; or
- f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of disturbance:

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease);
- b) areas previously disturbed which have achieved the rehabilitation outcomes;
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be left by agreement with the landowner; or
- e) disturbance that pre-existed the grant of the tenure.

Dwelling means any of the following structures or vehicles that is principally used as a residence:

- a) a house, unit, motel, nursing home or other building or part of a building; or
- b) a caravan, mobile home or other vehicle or structure on land; or
- c) a water craft in a marina.

Effluent means treated waste water released from sewage treatment plants.

Emergency action plan means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact.

End of pipe means the location at which water is released to waters or land.

Environmental authority means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

Environmental authority holder means the holder of this environmental authority.

Environmentally relevant activity means an environmentally relevant activity as defined under section 18 of the *Environmental Protection Act 1994*.

EPBC means the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

ERC decision means a decision made by the administering authority under section 300 of the *Environmental Protection Act 1994* about the estimated rehabilitation cost for a resource activity.

ERC period for the estimated rehabilitation cost for a resource activity, means:

- a) if a PRCP schedule applies for the activity, the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or
- b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*, the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or
- c) if a plan of operations applies for the activities, the plan period for the plan of operations; or
- d) otherwise, the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

Estimated rehabilitation cost (ERC) for a resource activity, see section 300(2) of the *Environmental Protection Act 1994*.

Existing authority has the meaning in section 94 of the *Environmental Offsets Act 2014*.

Extreme storm storage means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority.

Floodwater means water overflowing, or that has overflowed, from waters, river, creek, stream, lake, pond, wetland or dam onto or over riparian land that is not submerged when the watercourse or lake flows between or is contained within its bed and banks.

Flowable substance means matter or a mixture of materials that can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

Foreseeable future is the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable probability of failure before that time.

FRREMP means a Fitzroy Basin Receiving Environment Monitoring Program for the region in which the EA is located, that has been endorsed in writing by the administering authority.

General waste means waste other than regulated waste.

Hazardous waste means a substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.

Holder, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

Hydraulic performance means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.

Inert waste means bricks, pavers, ceramics, concrete, glass, steel, or similar waste that does not biodegrade or decompose.

Infrastructure means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long-term management of mining impacts or the protection of potential resources. Such other facilities include dams, waste rock dumps, voids, or ore stockpiles and buildings as well as other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the mining leases or the background land owner.

LA_{10, adj, 10 mins} means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

LA_{1, adj, 10 mins} means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response.

Lake includes:

- a) lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- b) the bed and banks and any other element confining or containing the water.

Land in the “land schedule” of this document means land excluding waters and the atmosphere.

Land use describes the selected post-mining use of the land, which is planned to occur after the cessation of mining operations.

Landfill means land used as a waste disposal site for lawfully putting solid waste on the land.

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

Low consequence dam means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635).

Mandatory reporting level or MRL means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635) published by the administering authority.

Manual means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635) published by the administering authority.

Matters of state environmental significance or MSES has the meaning in schedule 2 of the *Environmental Offsets Regulation 2014*.

Maximum extent of impact means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

mbgl means metres below ground level.

mg/L means milligrams per litre.

Mechanically reprocessing waste includes mechanically crushing, milling, grinding, shredding or sorting waste, whether or not for the purpose of recycling the waste.

Mine affected water means the following types of water:

- a) pit water, tailings dam water, processing plant water;
- b) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;
- c) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding:
 - i. rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage runoff containing sediment only, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water.
- d) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
- e) groundwater from the mine's dewatering activities; or
- f) a mix of mine affected water (under any of paragraphs (a) to (e)) and other water.

Mineral means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes:

- a) clay if mined for use for its ceramic properties, kaolin and bentonite;
- b) foundry sand;
- c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;
- d) limestone if mined for use for its chemical properties;
- e) marble;
- f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- g) peat;
- h) salt including brine;
- i) shale from which mineral oil may be extracted or produced;
- j) silica, including silica sand, if mined for use for its chemical properties; or
- k) rock mined in block or slab form for building or monumental purposes;

But does not include:

- a) living matter;
- b) petroleum within the meaning of the Petroleum Act 1923;
- c) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; or
- d) water.

Mining activities means the activities:

- a) authorised as per the definition in section 110 of the *Environmental Protection Act 1994*; and
- b) all environmentally relevant activities authorised under this environmental authority;
- c) waste activities.

Modification or modifying (see definition of 'construction').

Natural flow means the flow of water through waters caused by nature.

Notice of election has the meaning in section 18(2) of the *Environmental Offsets Act 2014*.

Noxious means harmful or injurious to health or physical wellbeing.

Offensive means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

Operational plan includes:

- a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); and
- b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

Participant of the FRREMP means an environmental authority holder that is identified as a current participant by the organisation carrying out the Regional REMP.

Peak particle velocity or ppv means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

Prescribed environmental matters has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significance listed in schedule 2 of the *Environmental Offsets Regulation 2014*.

Protected area means

- a) a protected area under the *Nature Conservation Act 1992*; or
- b) a marine park under the *Marine Parks Act 1992*; or
- c) a World Heritage Area.

Progressive rehabilitation means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

Receiving environment, in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

- a) a watercourse;
- b) groundwater;
- c) land; and
- d) sediments.

Receiving waters means the waters into which this environmental authority authorises releases of mine affected water.

Reference site (or analogue site) may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.

Register of Regulated Structures includes:

- a) date of entry in the register;
- b) name of the dam, its purpose and intended/actual contents;
- c) the consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*;
- d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
- f) for the regulated dam, other than in relation to any levees –
 - i. the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
 - ii. coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
 - iii. dam crest volume (megalitres);
 - iv. spillway crest level (metres AHD).
 - v. maximum operating level (metres AHD);
 - vi. storage rating table of stored volume versus level (metres AHD);
 - vii. design storage allowance (megalitres) and associated level of the dam (metres AHD);
 - viii. mandatory reporting level (metres AHD);
- g) the design plan title and reference relevant to the dam;
- h) the date construction was certified as compliant with the design plan;
- i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
- j) details of the composition and construction of any liner;
- k) the system for the detection of any leakage through the floor and sides of the dam;
- l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority; and
- n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

Regulated dam means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority.

Regulated structure includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

Regulated waste is defined in the *Environmental Protection Regulation 2008*.

Rehabilitation means the process of reshaping and revegetating land to restore it to a stable landform.

Rejects means:

- a) breaker rejects; or
- b) coarse rejects; or
- c) mid/fine size rejects; or
- d) tailings that have been dewatered; or
- e) any combination of rejects (under any of paragraphs a to d).

Representative means a sample set that covers the variance in monitoring or other data due to either natural changes or operational phases of the mining activities.

Reprocessing includes:

- a) recycling; or
- b) mechanical treatment; or
- c) thermal treatment; or
- d) biological treatment; or
- e) chemical treatment.

Residual void means an open pit resulting from the removal of ore and/or waste rock that will remain following the cessation of all mining activities and completion of rehabilitation processes.

Resource activity is an activity that involves

- a) a geothermal activity; or
- b) a GHG storage activity; or
- c) a mining activity; or
- d) a petroleum activity.

Saline drainage is the movement of waters, contaminated with salt(s), as a result of the mining activity.

Scheme fund means the scheme fund established under section 24 of the *Mineral and Energy Resources (Financial Provisioning) Act 2018*.

Sensitive place means:

- a) Any of the following:
 - i. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
 - ii. a motel, hotel or hostel; or
 - iii. an educational institution; or
 - iv. a medical centre or hospital; or
 - v. a protected area; or
 - vi. a public park or gardens.
- b) Despite paragraph (a), the following places are not sensitive places:
 - i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or
 - ii. a mining camp (i.e. accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority), whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the environmental authority holders for the mining project, or a related company; or
 - iii. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.
- c) A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a sensitive place for the purposes of that type(s) of environmental nuisance, however, remains a sensitive place for the purpose of other types of environmental nuisances.

Sewage means the used water of persons to be treated at a sewage treatment plant.

Significant residual impact has the meaning in section 8 of the *Environmental Offsets Act 2014*.

Spillway means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

Stable has the meaning in Schedule 8 of the Environmental Protection Regulation 2019 and, for a site, means the rehabilitation and restoration of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

Stormwater means all surface water runoff from rainfall.

Structure means dam or levee.

Suitably qualified and experienced person in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- a) for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- b) for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

System design plan means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

Tailings means fines from mineral processing that have not been dewatered.

The Act means the *Environmental Protection Act 1994*.

Trade-off area means the overlapping area between the approved open-cut mining footprint for Saraji coal mine, and the approved underground mining footprint for Saraji East project, as shown in **Attachment A1: Authorised Disturbance Extent (Saraji East Project)**. It is within this area where one mining method will be chosen over the other.

Void means any constructed, open excavation in the ground.

Waste as defined in section 13 of the *Environmental Protection Act 1994*.

Waste activities means receiving, storing, disposing, treating, or reprocessing wastes, and does not include composting.

Waste and resource management hierarchy has the meaning given by section 9 of the *Waste Reduction and Recycling Act 2011*.

Water quality means the chemical, physical and biological condition of water.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means a river, creek or stream in which water flows permanently or intermittently:

- a) in a natural channel, whether artificially improved or not; or
- b) in an artificial channel that has changed the course of the watercourse.

Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

Waters includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

WaTERS means the Water Tracking and Electronic Reporting System.

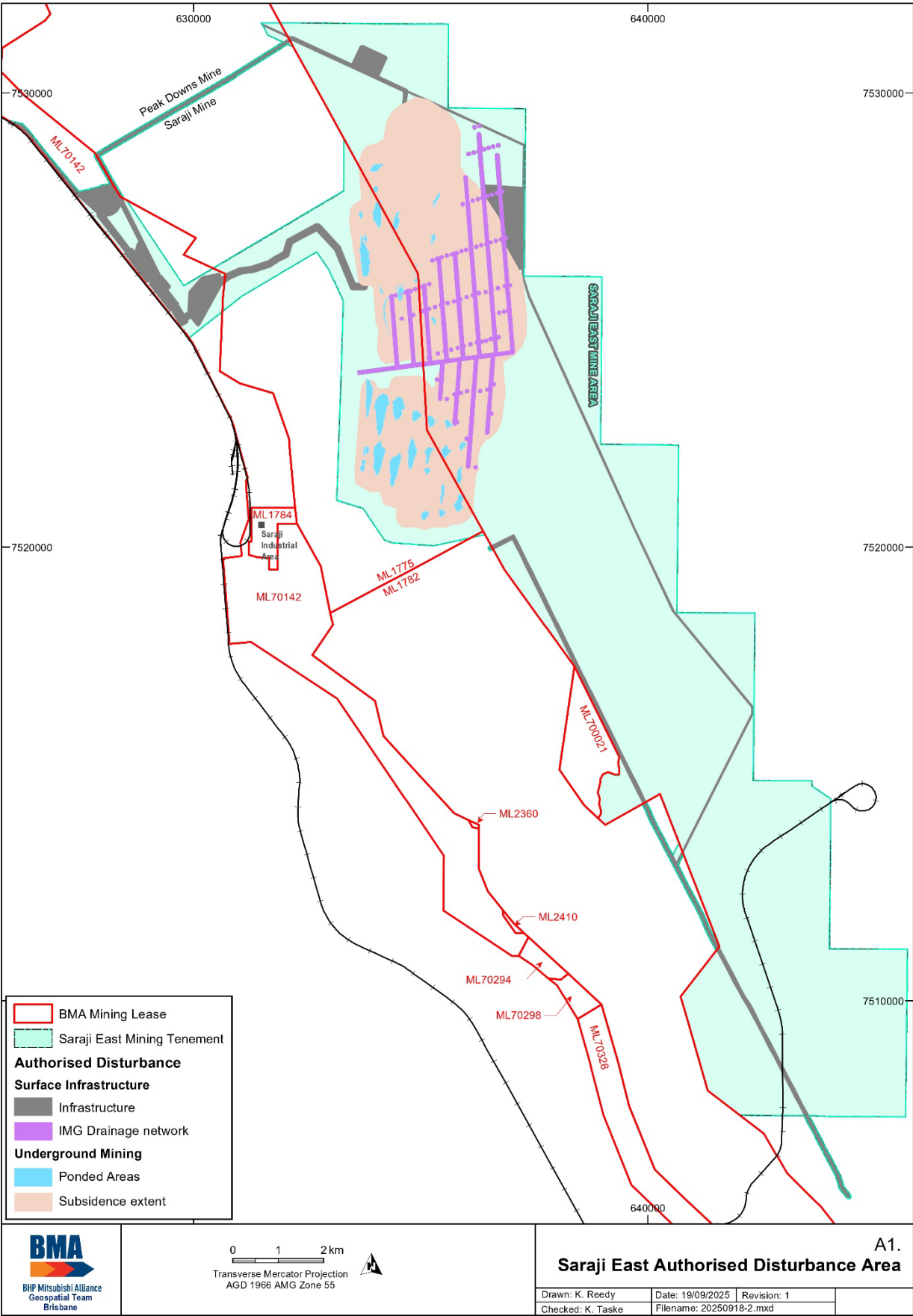
Wet season means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination, this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

µg/L means micrograms per litre.

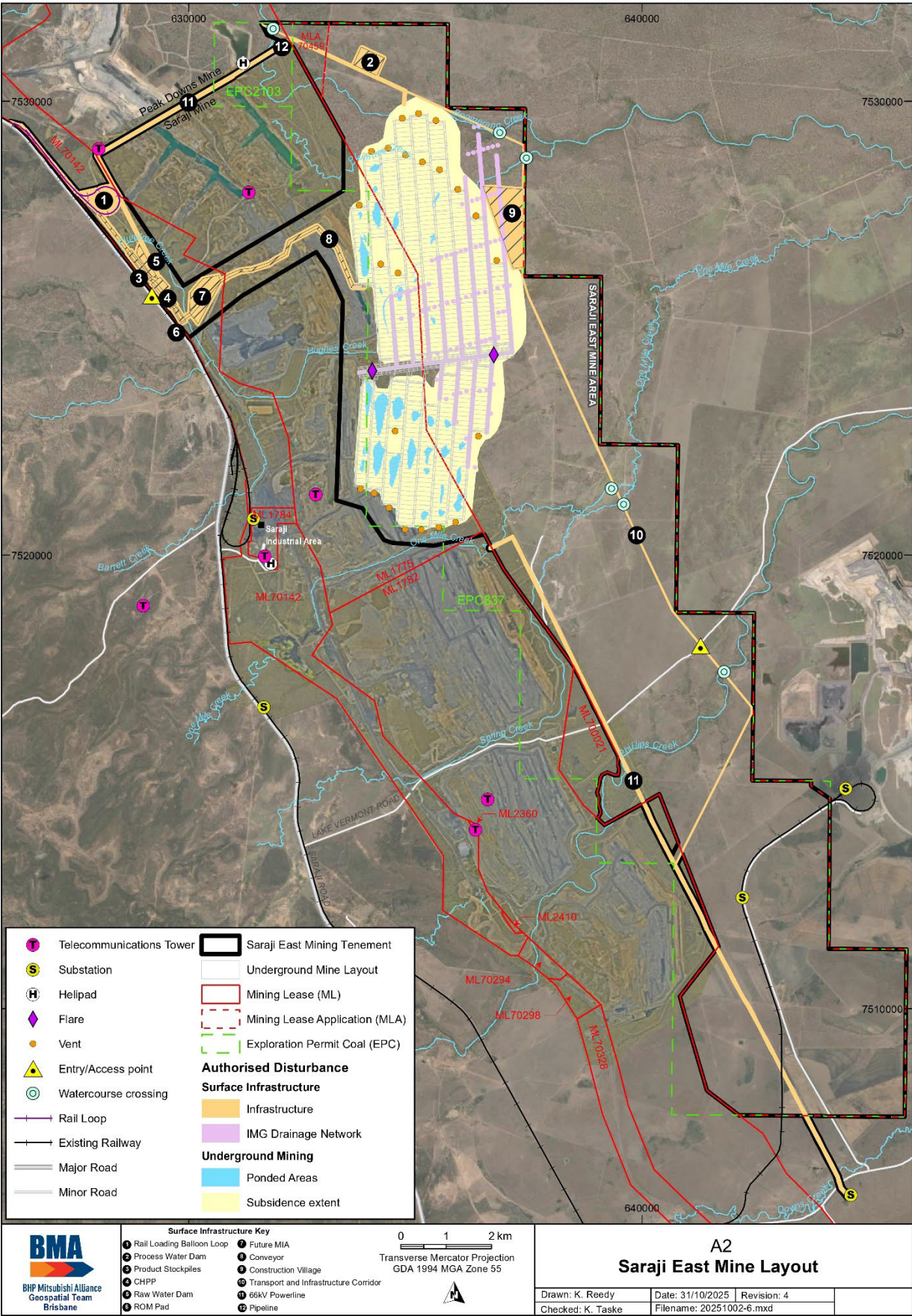
µS/cm means microsiemens per centimetre.

END OF DEFINITIONS

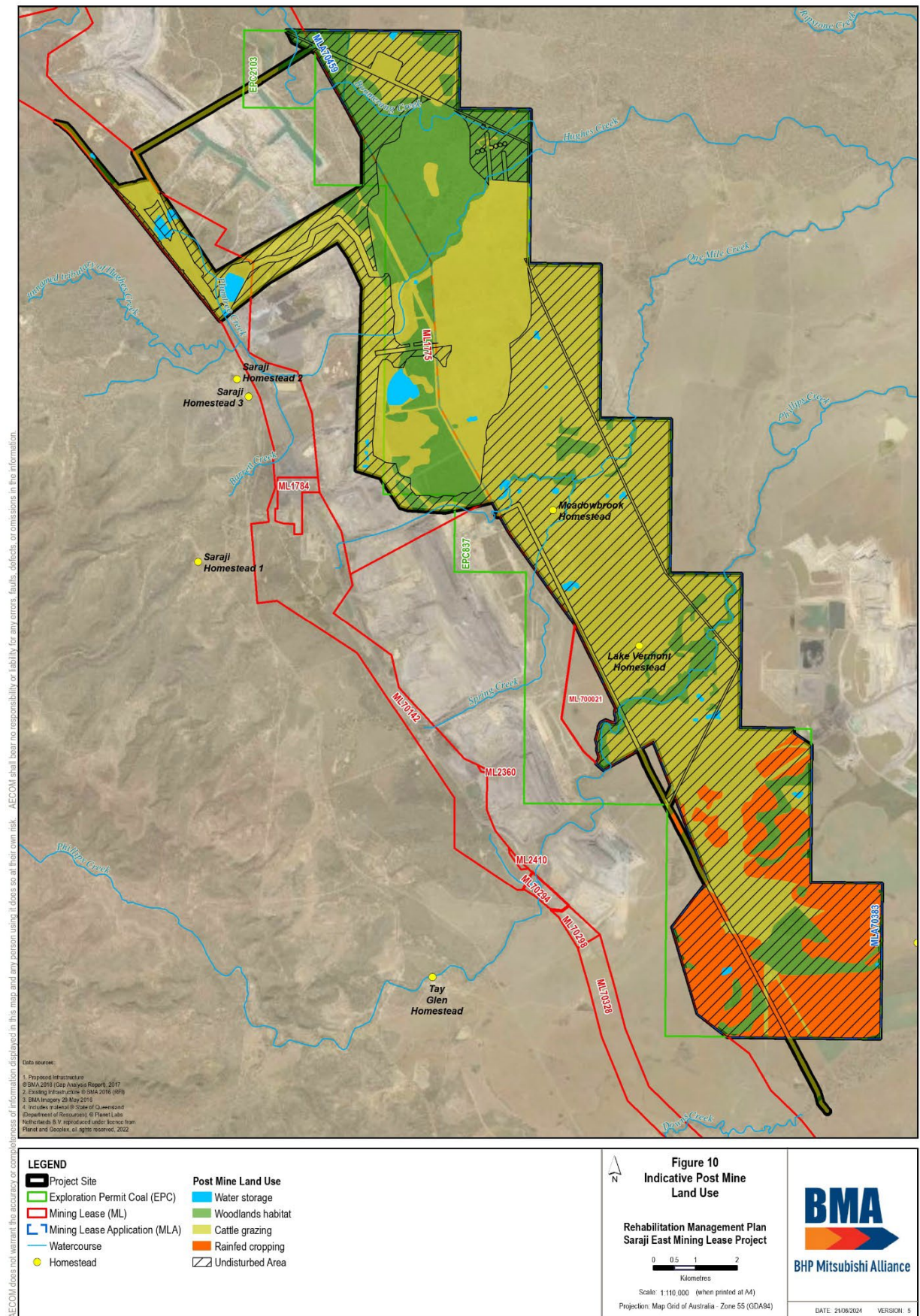
Attachment A1: Authorised Disturbance Extent (Saraji East Project)



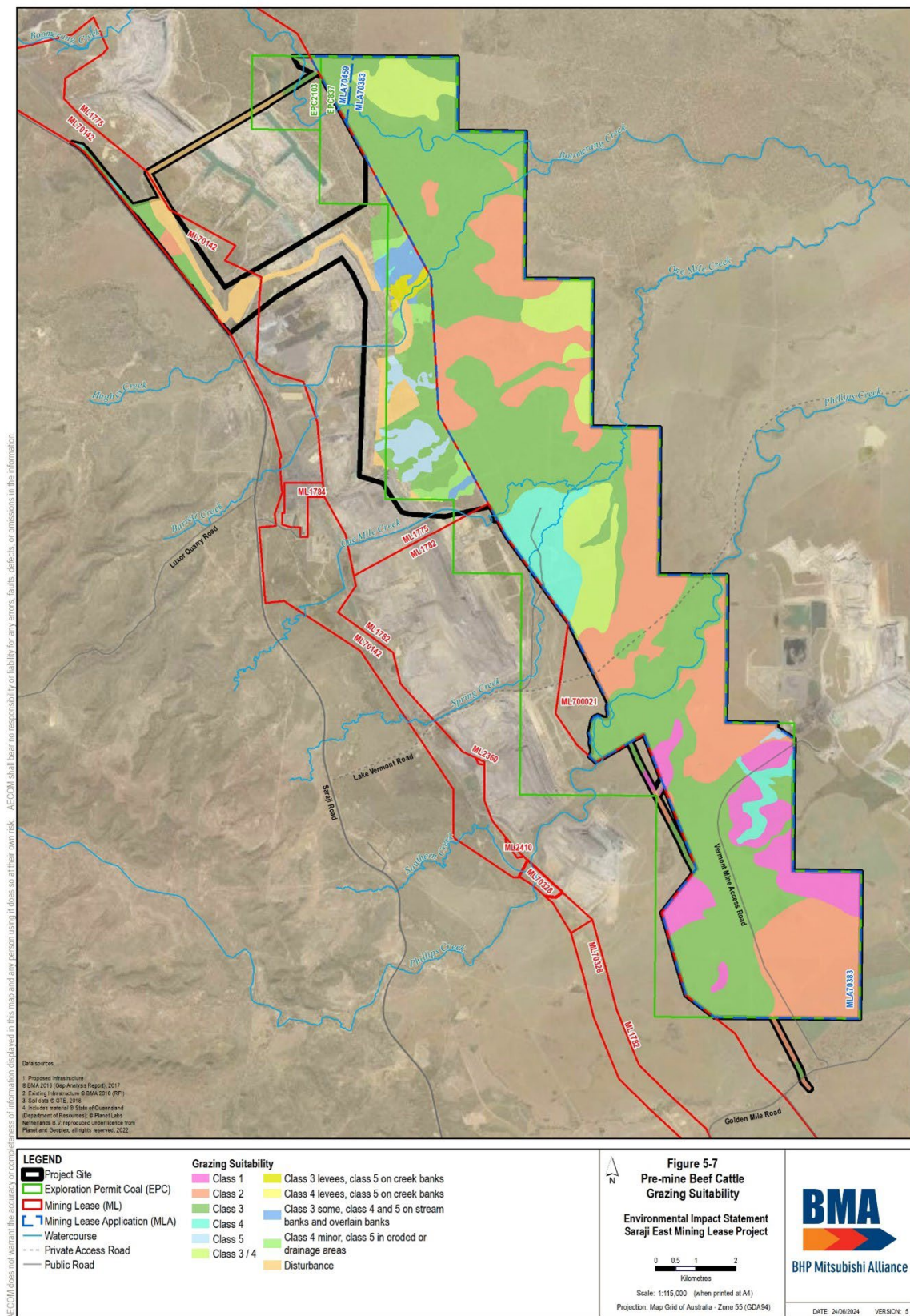
Attachment A2: Saraji East Project layout



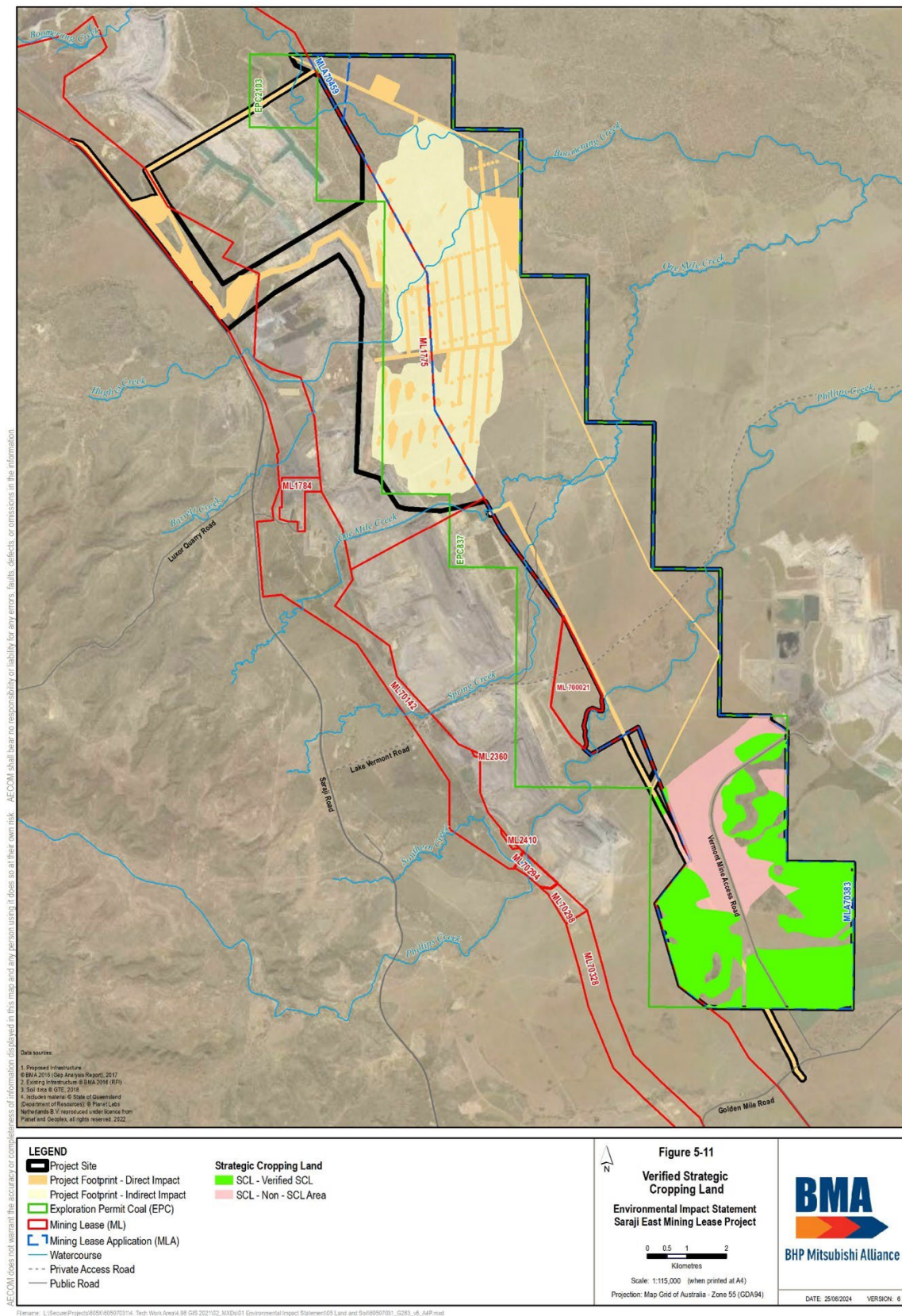
Attachment E1: Saraji East Project Post-Mining Land Uses



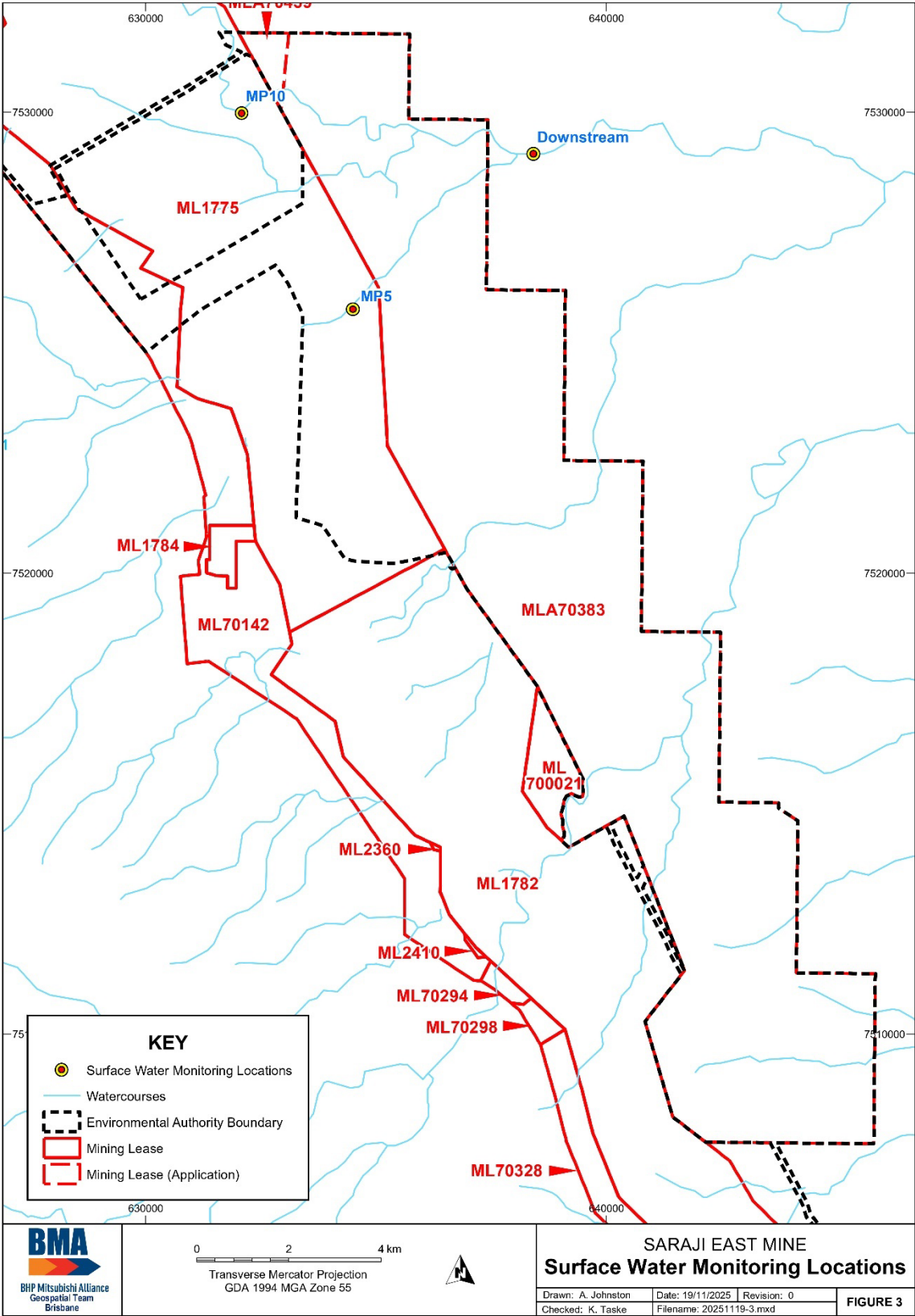
Attachment E2: Saraji East Project Grazing Land Suitability



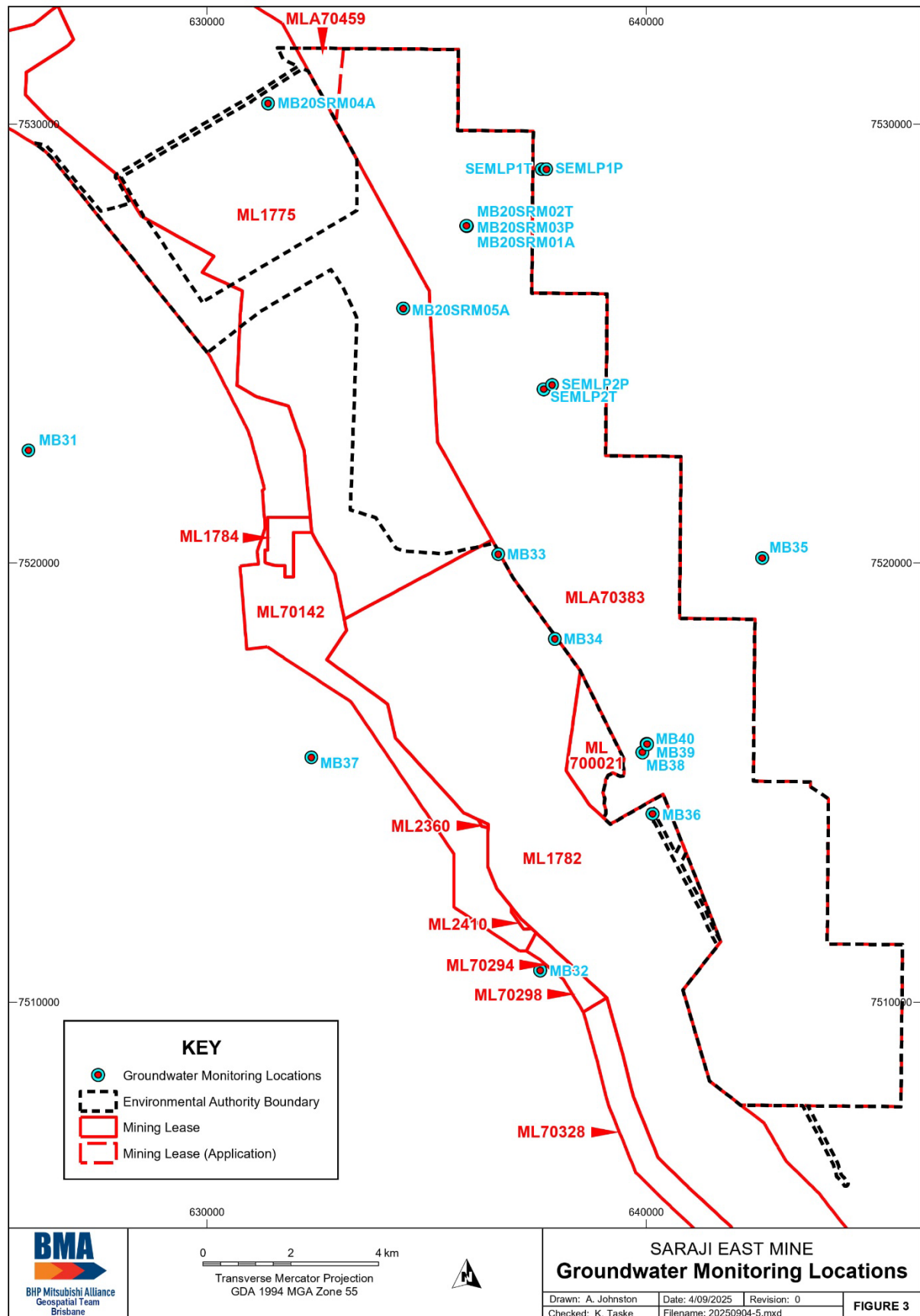
Attachment E3: Saraji East Project Strategic Cropping Land



Attachment F1: Surface Water Monitoring Locations

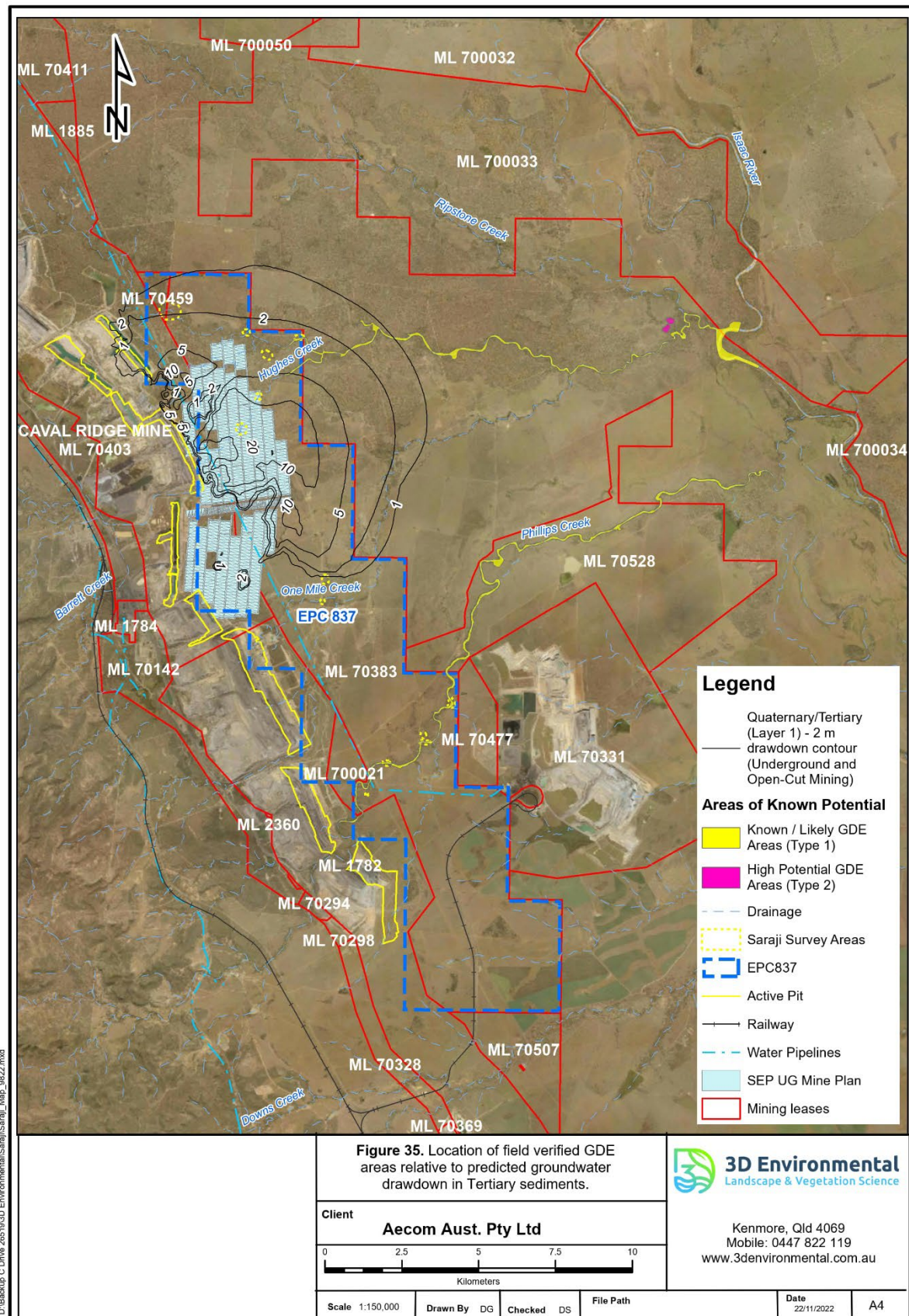


Attachment I1: Groundwater monitoring locations

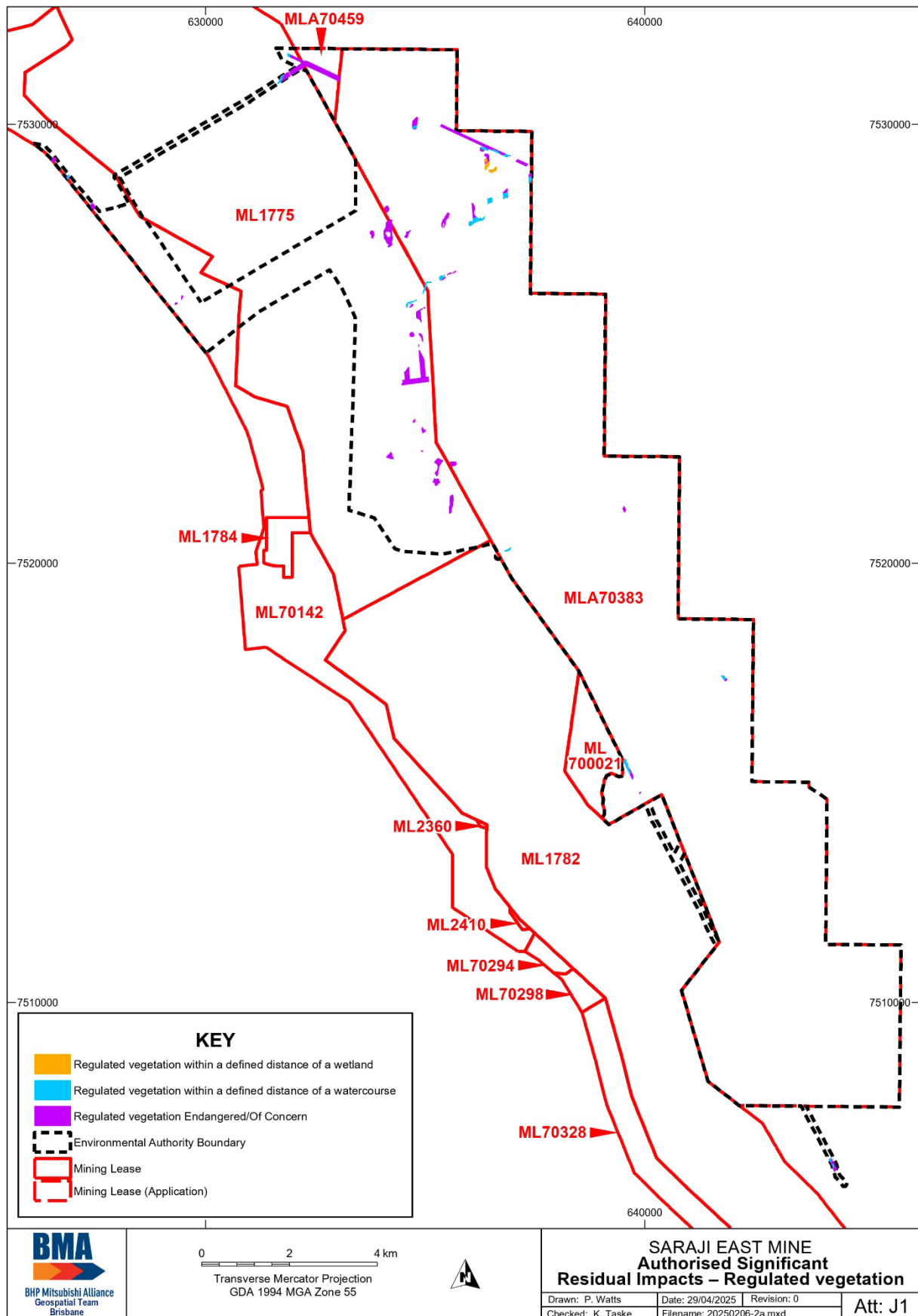


Attachment I2: Groundwater Dependent Ecosystem Locations – Saraji East project

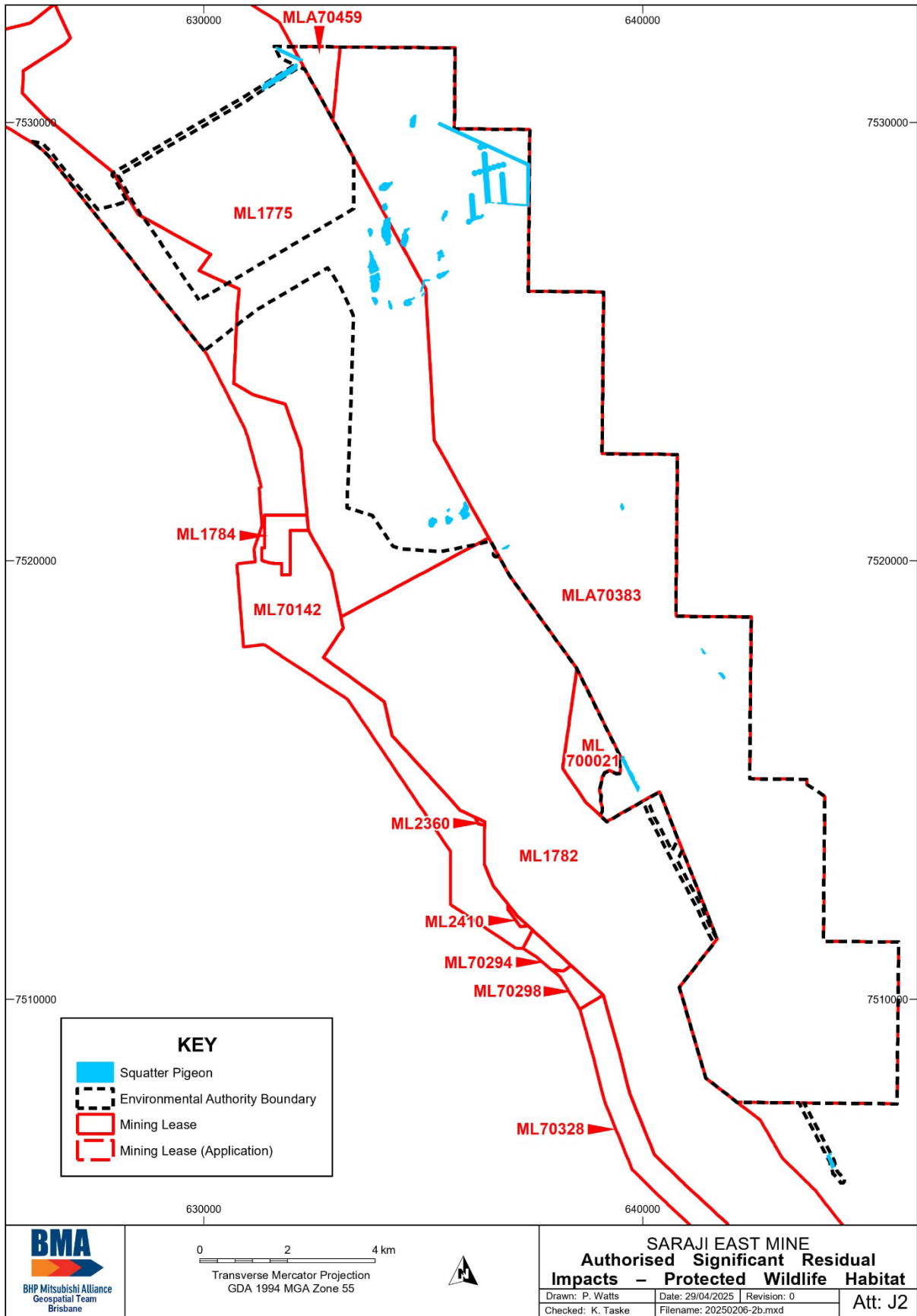
(source: Saraji East Mining Lease Project: Groundwater Dependent Ecosystem Assessment, 3D Environmental, July 2023)



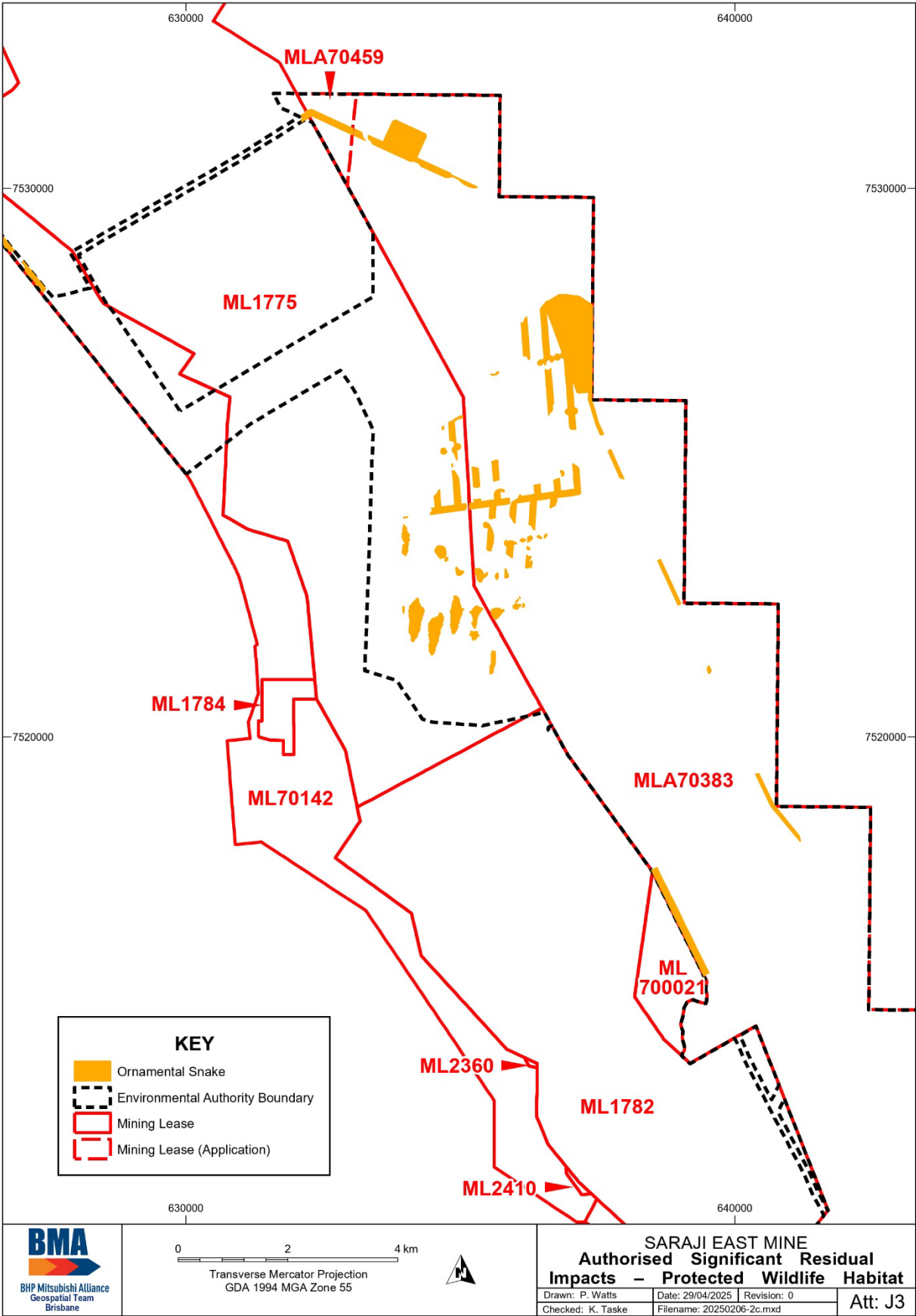
Attachment J1: Authorised Significant Residual Impacts – Regulated Vegetation



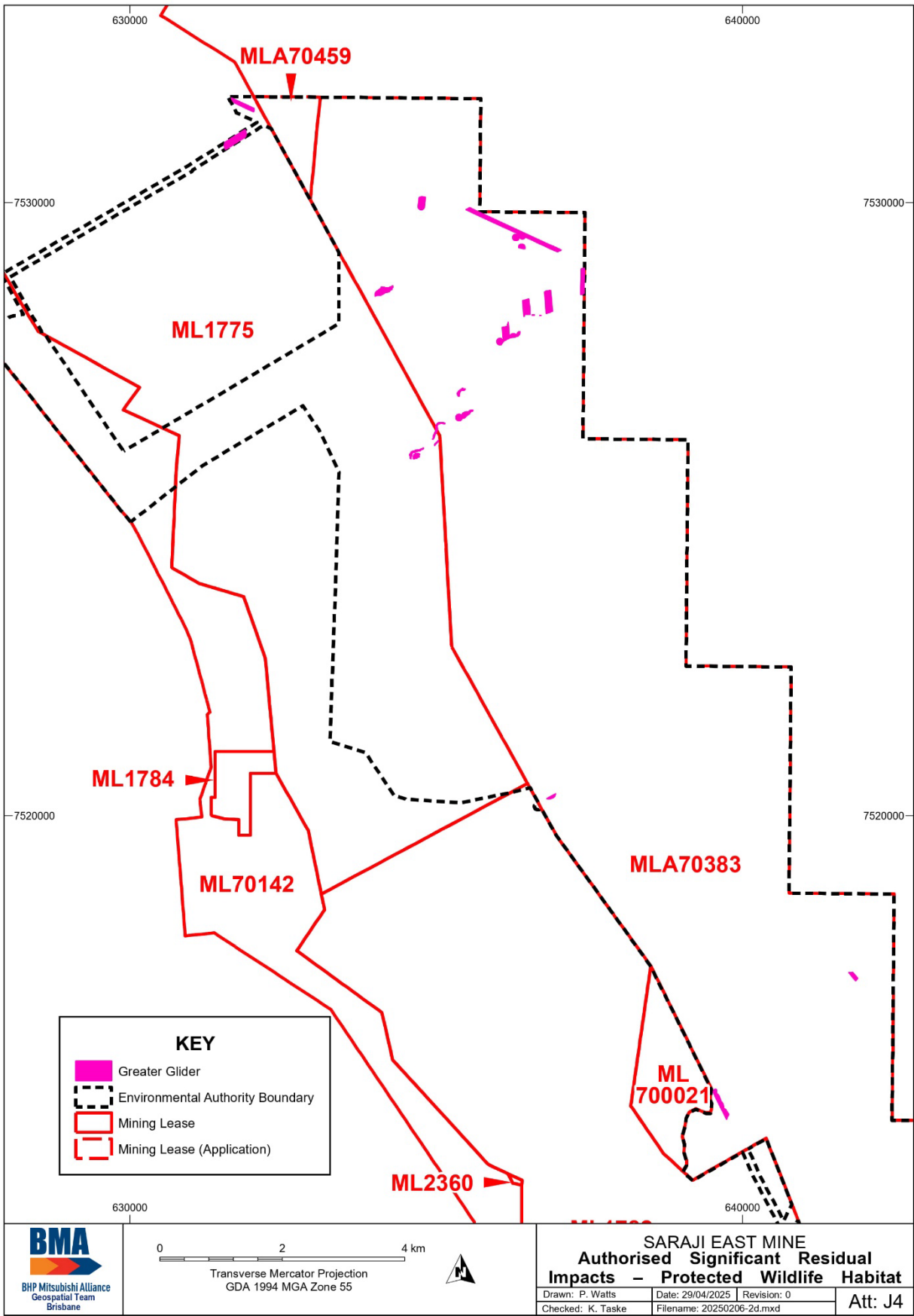
Attachment J2: Authorised Significant Residual Impacts – Squatter Pigeon



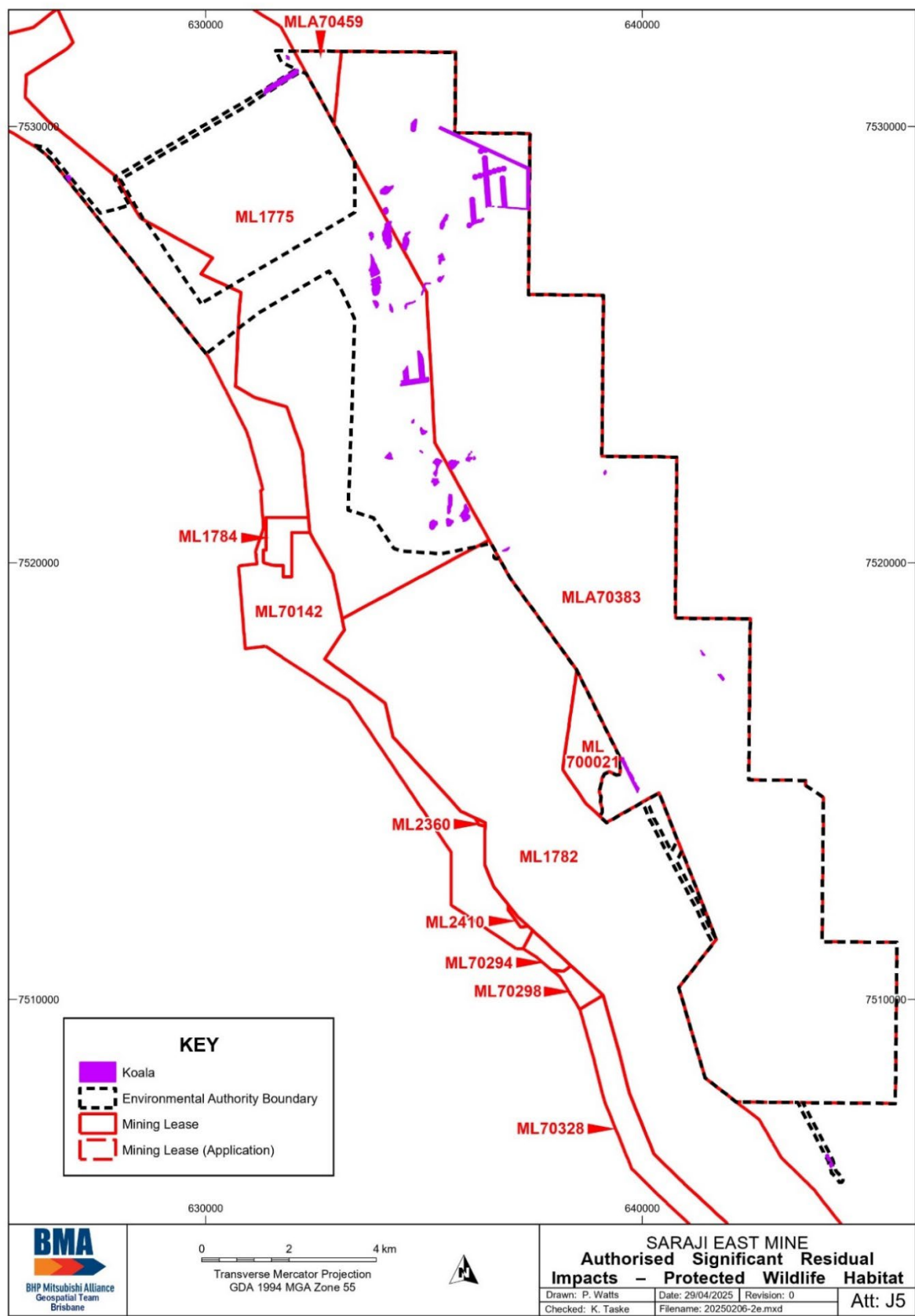
Attachment J3: Authorised Significant Residual Impacts – Ornamental Snake



Attachment J4: Authorised Significant Residual Impacts – Greater Glider



Attachment J5: Authorised Significant Residual Impacts –Koala AUTHORITY



END OF ENVIRONMENTAL

Appendix B—Coordinator-General’s stated conditions under the SSRC Act and proponent commitments

This appendix includes conditions stated by the Coordinator-General under section 11(2) of the SSRC Act. In accordance with section 11(3)(a) of the SSRC Act, these conditions are enforceable conditions under the SDPWO Act. The entity with jurisdiction for the conditions in this appendix is the Coordinator-General.

All the conditions stated in this appendix take effect from the date the Department of the Environment, Tourism, Science and Innovation completes the EIS assessment report for the Saraji East Mining Lease Project.

General conditions

- (a) The proponent must advise the Coordinator-General in writing that construction of the project has commenced within five (5) business days of construction commencing.
- (b) The proponent must advise the Coordinator-General in writing that the operation of the project has commenced within five (5) business days of operations commencing.

Social impact management plan

- (a) The proponent must develop and implement a detailed Social Impact Management Plan (SIMP) to manage the potential social impacts of the project identified in the social impact assessment (SIA) through ongoing community and stakeholder engagement.
- (b) The proponent must submit the detailed SIMP to the Coordinator-General for approval at least three (3) months prior to the commencement of construction.
- (c) The SIMP must be prepared in consultation with the Issac Regional Council.
- (d) The SIMP must include an updated Social Baseline and Social Impact Assessment for the project.
- (e) The social impact assessment review will include:
 - (i) a review of social baseline to ensure the assessment of impacts is accurate in the current context
 - (ii) a review of the proposed social impact mitigation strategies arising from stakeholder consultation on the project.
- (f) The SIMP must include the following plans:
 - (i) Community and Stakeholder Engagement Plan in accordance with Condition 3
 - (ii) Workforce Management Plan in accordance with Condition 4
 - (iii) Housing and Accommodation Plan in accordance with Condition 5
 - (iv) Local business and industry procurement plan in accordance with Condition 6 and
 - (v) Health and Community Wellbeing Plan in accordance with Condition 7.

- (g) The SIMP must include a monitoring and evaluation strategy that ensures the SIMP is reviewed, and updated, at the start of construction, every two years for the first four years of operations and at Year 10 of the project.
- (h) The updated SIMP (including updated project social commitments) must be prepared in consultation with Isaac Regional Council and submitted to the Coordinator-General for approval at the time of the annual social impact management report (SIMR) (Condition 10).
- (i) A SIMP for the closure of the mine must be prepared in consultation with Isaac Regional Council and submitted to the Coordinator-General for approval at least 24 months prior to the conclusion of operations.
- (j) If during the operation of the mine and prior to the planned closure of the mine, the mine is anticipated to transition into a care and maintenance phase or undergo a material reduction in workforce, consult with the Coordinator-General and Isaac Regional Council regarding proposed immediate and longer term. This should occur as soon as practicable.
- (k) Should the mine transition into a care and maintenance phase or undergo material reduction in workforce, a SIMP addressing the impact must be developed in consultation with Isaac Regional Council and submitted to the Coordinator-General for approval six months prior to the commencement of care and maintenance or material reduction in workforce.
- (l) The proponent must publish the revised SIMP on their website within one (1) month of the Coordinator-General's approval of the plan. The proponent must notify the Coordinator-General within five business days of the SIMP being made publicly available on proponent's website.

Community and Stakeholder Engagement Plan

- (a) The proponent must engage with all relevant stakeholders to ensure they are informed about the project and that identified potential social impact issues are effectively managed and monitored.
- (b) The proponent must prepare a Community and Stakeholder Engagement Plan that is to be submitted as part of the Social Impact Management Plan (SIMP) to the Coordinator-General for approval, in accordance with Condition 2.
- (c) The Community and Stakeholder Engagement Plan must address the construction and operation phases of the project, and include:
 - (i) objectives and key performance indicators
 - (ii) an analysis of key stakeholders and stakeholder issues
 - (iii) action plans for ongoing engagement including details of proposed communication tools, timeframes for activities and roles and responsibilities for engagement
 - (iv) processes for incorporating stakeholder feedback into the further development of project-specific management measures
 - (v) details of any stakeholder agreements to be negotiated, including agreements with state and local government agencies
 - (vi) a complaints management process and

- (vii) monitoring and reporting protocols.
- (d) The Community and Stakeholder Engagement Plan must:
 - (i) be consistent with the Community and Stakeholder Engagement Management Plan outlined in Section 6.2 of the SIMP (Appendix L) of the EIS (SEMLP, 2024) and
 - (ii) incorporate the management measures listed in Appendix L and the proponent's commitments in Appendix 0-1 Summary of Commitments.
- (e) The Community and Stakeholder Engagement Plan must provide details for:
 - (i) providing advanced notice to directly affected landholders and residents of nearby homesteads of project works that may potentially impact on the amenity and activities of the properties
 - (ii) consulting with emergency service providers to develop an emergency response procedure for the project and
 - (iii) consulting with Issac Regional Council, local service providers and relevant state agencies about potential impacts from the project on primary healthcare, childcare, road safety and measures to manage potential impacts.

Workforce Management Plan

- (a) The proponent must prioritise recruitment of workers from local and regional communities and those who would relocate to regional communities and minimise the proportion of fly-in, fly-out (FIFO) workers.
- (b) The proponent must support the health and wellbeing of the project workforce.
- (c) The proponent must prepare a Workforce Management Plan that is to be submitted as part of the Social Impact Management Plan (SIMP) to the Coordinator-General for approval, in accordance with Condition 2.
- (d) The Workforce Management Plan must address the construction and operational phases of the project, and include:
 - (i) objectives and key performance indicators
 - (ii) summary workforce profile, including the estimated proportions of new local and FIFO workers
 - (iii) roster arrangements for local and FIFO workers
 - (iv) measures that implement the recruitment strategy described in the Saraji East Mining Lease SIMP
 - (v) measures to enhance potential employment opportunities for local communities including Indigenous people, and mitigate potential negative social impacts
 - (vi) proposed training and development initiatives to improve local and regional skills including initiatives for traditionally underrepresented groups
 - (vii) programs to support the physical and mental health and wellbeing of workers
 - (viii) the level of on-site health services to be provided for workers

- (ix) details of any workforce code of conduct to govern worker interactions with local communities and
 - (x) monitoring and reporting protocols.
- (e) The Workforce Management Plan must:
- (i) be consistent with the Workforce Management Plan outlined in Section 6.3 of Attachment L of the SIMP (Appendix L) of the EIS (SEMLP, 2024) and
 - (ii) incorporate the management measures listed in Appendix L and the proponent's commitments in Appendix 0-1 Summary of Commitments.

Housing and Accommodation Plan

- (a) The proponent must limit or mitigate negative social impacts of the project to housing and accommodation affordability and availability in local and regional communities.
- (b) The proponent must prepare a workforce Housing and Accommodation Plan that is to be submitted as part of the Social Impact Management Plan (SIMP) to the Coordinator-General for approval, in accordance with Condition 2.
- (c) The Housing and Accommodation Plan must address the construction and operational phases of the project, and include:
 - (i) objectives and key performance indicators
 - (ii) measures to enhance potential benefits for project workers and the community
 - (iii) measures to mitigate potential negative social impacts
 - (iv) policies regarding housing and accommodation support to be provided to project workers and their families who wish to move to the local communities and
 - (v) monitoring and reporting protocols.
- (d) The Housing and Accommodation Plan must:
 - (i) be consistent with the Housing and Accommodation Plan outlined in Section 6.4 of Attachment L of the SIMP (Appendix L) of the EIS (SEMLP, 2024) and
 - (ii) incorporate the management measures listed in Appendix L and the proponent's commitments in Appendix 0-1 Summary of Commitments.
- (e) The Housing and Accommodation Plan must be developed in consultation with Isaac Regional Council and provide:
 - (i) an updated assessment of local housing availability and demand- housing tenure, dwelling stock, sales and rental volumes and prices
 - (ii) the likely impact of the project on the housing market and housing demand
 - (iii) support for investment in non-resource worker housing
 - (iv) the arrangements for housing the project's FIFO workforce including the location of the workers' accommodation village and beds secured for construction and operational workforce
 - (v) analysis of the dwelling type preferences for the resident workforce

- (vi) a description of the currently available options through the proponent for the provision of accommodation and
- (vii) the housing register to be made available for workers and their families who wish to reside in the local communities.

Local business and industry procurement plan

- (a) The proponent must ensure that opportunities for local businesses to provide goods and services for the project are maximised during the construction and operational phases.
- (b) The proponent must prepare a local business and industry procurement plan that is to be submitted as part of the Social Impact Management Plan (SIMP) to the Coordinator-General for approval, in accordance with Condition 2.
- (c) The local business and industry procurement plan must address the construction and operational phases of the project, and include:
 - (i) objectives and key performance indicators
 - (ii) procurement strategies and initiatives for local and regional suppliers, including Aboriginal and Torres Strait Islander owned businesses, and actions to facilitate participation
 - (iii) proposed policies and programs to build local and regional capacity and capability, and reduce barriers to entry
 - (iv) processes that embed the local business and industry procurement strategies into the contracting model for the project
 - (v) measures to mitigate any potential negative social impacts on local industries
 - (vi) details of any established industry guidelines or codes of practice which the proponent has committed to compliance and
 - (vii) monitoring and reporting protocols.
- (d) The local business and industry procurement plan must:
 - (i) be consistent with the Local Business and Industry Procurement Management Plan outlined in Section 6.6 of Attachment L of the Social Impact Management Plan (Appendix L) of the EIS (SEMLP, 2024); and
 - (ii) incorporate the management measures listed in Appendix L and the proponent's commitments in Appendix 0-1 Summary of Commitments.

Health and Community Wellbeing Plan

- (a) The proponent must limit or mitigate negative social impacts of the project and capitalise on opportunities to improve the health and wellbeing of local and regional communities.
- (b) The proponent must limit or mitigate adverse impacts of the project on the level of service (social services, facilities and infrastructure) currently provided to local communities.
- (c) The proponent must prepare a Health and Community Wellbeing Plan that is to be submitted as part of the Social Impact Management Plan (SIMP) to the Coordinator-General for approval, in accordance with Condition 2.

- (d) The Health and Community Wellbeing Plan must address the construction and operational phases of the project, and include:
 - (i) objectives and key performance indicators
 - (ii) measures to ensure that the level of service provided to the local community by existing social services, facilities and infrastructure is not reduced
 - (iii) measures to mitigate potential health and wellbeing impacts on local communities, and enhance potential benefits
 - (iv) emergency response arrangements and management measures agreed with emergency service providers, for incidents associated with the project, both on and off the project site
 - (v) details of any community development programs to be implemented, and the outcomes to be achieved and
 - (vi) monitoring and reporting protocol.
- (e) The Health and Community Wellbeing Plan must:
 - (i) be consistent with the Health and Community Well-being Plan outlined in Section 6.5 of Attachment L of the SIMP (Appendix L) of the EIS (SEMLP, 2024) and
 - (ii) incorporate the management measures listed in Appendix L and the proponent's commitments in Appendix 0-1 Summary of Commitments.
- (f) The Health and Community Wellbeing Plan must provide details for the following matters:
 - (i) measures developed in consultation with Issac Regional Council to limit potential adverse impacts of the project on the level of childcare service provided to the local community
 - (ii) measures developed in consultation with Issac Regional Council, Queensland Health and primary healthcare providers, including local General Practitioners, to limit potential adverse impacts of the project on the level of primary healthcare service provided to the local community and
 - (iii) measures developed in consultation with Issac Regional Council, Emergency and Long-term Accommodation Moranbah and Isaac Affordable Housing Trust to limit potential adverse impacts of the project on the level of social housing service provided to the local community.

Reporting on the implementation and effectiveness of social impact management measures

- (a) The proponent must prepare an annual social impact management report (SIMR) for each year of construction and the first five years of operation; SIMRs must also be submitted Year 10 of operations to include the discharge of the housing requirements and reporting on the project commitments in place for the life of the project.
- (b) The annual SIMR must be submitted to the Coordinator-General for approval within thirty (30) business days after the end of the relevant twelve (12) month period from the commencement of the construction of the project.
- (c) Using the monitoring protocol described in the SIMP, the SIMR must detail:

- (i) an assessment of the social impacts of the project against the potential social impacts identified in the SIA, including the consideration of other proposed developments in local communities
- (ii) the progress and effectiveness of the social impact management measures identified in the SIMP:
 - (1) where monitoring indicates measures have not been effective, describe how those social impact management measures have been modified
 - (2) the actions taken to implement commitments made by the proponent.
- (d) The SIMR must present the total workforce profile including:
 - (i) total number of workers employed
 - (ii) proportion of local workers, new local workers, Aboriginal and Torres Strait Islander workers and FIFO workers.
- (e) Each SIMR must be publicly available on the proponent's website within thirty (30) business days of the Coordinator-General approval of the relevant SIMR. The proponent must notify the Coordinator-General within five (5) business days of the SIMR being published on proponent's website.

Definitions

'commencement of construction' is defined as the commencement of construction of mine facilities and infrastructure corridor as described in Section 3.7.2 of Chapter 3 – Project Description.

'commencement of operation' is mining and processing of coal.

'FIFO worker' is a worker who does not live in one of the local or regional communities and must commute to work and stay at the workers' accommodation village while on shift.

'local communities' are the 8 nearby regional communities identified in the evaluation report.

'local worker' is a worker who lives in one of the local communities.

'new local worker' is a worker for the project that moves to the local area.

'the project' the Saraji East Mining Lease Project.

Appendix C—Recommended conditions for the Australian Government’s approval

Recommended conditions for the Commonwealth’s approval

To ensure the mitigation measures and offsets summarised in [section 6.17](#) are enforceable, the proposed conditions for the MNES controlling provisions of listed threatened species and ecological communities and water resources, are recommended for the Australian Government’s approval under the *Environment Protection and Biodiversity Conservation Act 1999*.

Clearing limits

1. The approval holder must not:
 - a. **clear** outside of the **Action area**, and
 - b. **construct** outside of the **Action area**.
2. The approval holder must not **clear** more than the areas (in hectares) of habitat for each of the following listed threatened species and communities:
 - a. 63.3 ha of **Brigalow TEC**,
 - b. 0.08 ha of **Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin TEC**
 - c. 386.2 ha of **Ornamental snake habitat**,
 - d. 113.6 ha of **Squatter pigeon (southern) habitat**,
 - e. TBA ha of **Koala habitat**,
 - f. 38.6 ha of **Greater glider habitat**.
3. If the approval holder detects the presence, where likely to be affected by the action, of any **protected matter** or the habitat of any **protected matter** not previously reported to the **department** as part of the **referral** of this action or in accordance with this condition, the approval holder must:
 - a. notify the **department** in writing of the presence and likely extent of any **protected matter** or the habitat of any **protected matter** within 10 **business days** of detecting the presence of any **protected matter** or the habitat of any **protected matter**, and
 - b. not **clear** any area where the **protected matter** or the habitat of the **protected matter** is located unless:
 - i. condition 2 provides for the **clearing** of that **protected matter** or habitat of that **protected matter**, and
 - ii. **clearing** does not exceed the limit specified in condition 2 for that **protected matter** or habitat of that **protected matter**.

Mitigation measures

4. The approval holder must implement the following mitigation measures from the commencement of the Action and continue to implement these measures until the completion of the Action to avoid and mitigate harm to protected matters:
 - a) ensure areas subject to clearing of **Brigalow TEC** or **Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin TEC** are clearly marked to avoid inadvertent disturbance.
 - b) avoid the placement of IMG extraction wells and infrastructure within 50m of

Brigalow TEC or Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin TEC.

- c) develop and implement a Weed Management Plan to monitor and limit the impact of weeds within the **Brigalow TEC** and **Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin TEC**.
 - d) enforce a 40 kilometre/hour speed limit when travelling within **Koala habitat**, **Greater Glider habitat** or **Squatter Pigeon habitat** unless travelling on a section of road made difficult for **Koalas**, **Greater Gliders** and **Squatter Pigeons** to access by the installation of fauna friendly fencing and safe crossings for fauna.
 - e) ensure all fencing constructed as a result of the Action uses a non-barbed top wire where it passes through areas of **Greater Glider habitat** and **Koala habitat**.
 - f) ensure a **fauna spotter-catcher** is present and monitors the movements of any **protected matters** during all habitat **clearance** activities, and has the authority to immediately cease habitat **clearance** for an appropriate timeframe if any **protected matter** is sighted.
 - g) ensure the **fauna spotter-catcher**, in carrying out their duties, acts in accordance with the **Fauna Spotter Code of Practice**.
 - h) ensure all lighting within the Action area is installed and used in accordance with the **National Light Pollution Guidelines for Wildlife**.
 - i) ensure all artificial lighting beams in the **Action area** are directed downwards and use shields and baffles to limit light spill beyond the area that requires lighting.
5. To avoid and mitigate **harm** as a result of the Action to **Ornamental Snake**, the approval holder must implement the following measures:
- a. within two days prior to any **clearing** within the **Action area**, ensure a **fauna spotter catcher** inspects all **Ornamental Snake habitat** for the presence of, or use by **Ornamental Snake**.
 - b. ensure a **fauna spotter catcher** is in attendance and observing for **Ornamental Snake** during any **clearing** activities undertaken within **Ornamental Snake habitat**.
 - c. ensure the **fauna spotter catcher** has the authority to immediately cease **clearance** for a sufficient amount of time to relocate any **Ornamental Snake** to an appropriate habitat area.
6. To avoid and mitigate **harm** as a result of the Action on the **Squatter pigeon**, the approval holder must implement the following mitigation measures:
- a) undertake surveys of **Squatter Pigeon habitat**, within the **disturbance footprint** to identify the presence of any **Squatter Pigeon**, in areas proposed for **clearing** within 24 hours prior to **clearing**. The surveys must be undertaken by a **suitably qualified field ecologist** in accordance with the **survey guidelines**, or another methodology endorsed by the department in writing.
 - b) record the date, time and location at which any **Squatter Pigeon** (including any **Squatter Pigeon** nests or eggs) are observed within the **disturbance footprint**, vacate the **disturbance footprint** and/or are relocated by a **suitably qualified field ecologist**, including the location where any **Squatter Pigeon** were relocated to.
 - c) The approval holder must include the records of the surveys in the next **compliance report**.

- d) not **clear** any **shelter tree** containing **Squatter Pigeon** (including any **Squatter Pigeon** nests or eggs).
 - e) Where a **Squatter Pigeon** individual(s) is identified during pre-clearance surveys, immediately cease **clearance** for sufficient time for the **suitably qualified field ecologist** to flush or relocate **Squatter Pigeon individuals**, to an alternative nearby equivalent habitat area not to be **cleared**.
 - f) Where **Squatter Pigeon** active nests (including eggs or chicks) are identified during pre-clearance surveys, immediately cease clearance around the nest area until the young have fledged.
7. To avoid and mitigate **harm** as a result of the Action on the **Koala**, the approval holder must implement the following mitigation measures:
- a. undertake surveys of vegetation within the **Action area** to identify the presence and location of any **Koala** within 24 hours prior to the **commencement of clearing**. These surveys must be undertaken by a **suitably qualified field ecologist** in accordance with the **Survey Guidelines** or another survey methodology endorsed by the **department** in writing.
 - b. when **clearing** within **Koala habitat**:
 - i. only undertake **clearing** during **daylight hours**
 - ii. ensure **clearing** is conducted in stages and timed to provide a minimum of 12 hours break between **clearing** events
 - iii. maintain appropriate habitat, or trees retained as stepping stones, linking the **Action area** to adjacent habitat areas to facilitate **Koala** movement between habitat areas
 - iv. ensure habitat links are not more than 200 metres apart
 - v. **clearing** must be undertaken in the direction of retained habitat, adjacent habitat or local habitat corridors to ensure **Koalas** are not isolated in an island of vegetation surrounded by **clearing**
 - vi. thin areas with trees prior to undertaking complete **clearing** of that area, to encourage resident **Koalas** to start seeking new home ranges prior to complete **clearing**, and
 - vii. ensure **Koala habitat trees** are only felled in a controlled manner using a vertical tree grab mounted on an excavator.
 - c. within two days prior to any **clearing** within the **Action area**, ensure a **fauna spotter catcher** inspects all **Koala habitat trees** for the presence of, or use by, **Koalas**
 - d. ensure no tree in which a **Koala** is present, and no tree with a crown overlapping a tree in which a **Koala** is present, is **cleared** until the **Koala** leaves of its own accord.
 - e. The approval holder must cease all **clearing** and **construction** if a **Koala** is observed within the **Action area**. The approval holder must not resume **clearing** or **construction** until the observed **Koala** has either vacated the **Action area** or been relocated out of the **Action area** by a **fauna spotter catcher**.
 - f. The approval holder must seek veterinary care or assistance from an experienced wildlife expert if any **Koala** are found injured within or adjacent to the **Action area** during clearing and construction.
8. To avoid and mitigate **harm** as a result of the Action to the **Greater Glider**, the approval holder must implement the following mitigation measures:
- a) within two days prior to any clearing within **Greater Glider habitat**, ensure a **fauna spotter catcher** inspects all **Greater Glider habitat trees** including but not limited to all hollow-bearing trees, for the presence of, or use by **Greater Gliders**.

- b) ensure a **fauna spotter catcher** is in attendance and observing for **Greater Gliders** during any clearing activities undertaken within **Greater Glider habitat**.
- c) ensure the **fauna spotter catcher** has the authority to immediately cease **clearance** for enough time to safely relocate any **Greater Gliders** to an appropriate habitat area.
- d) removal of **Greater Glider habitat trees** must be consistent with the following process:
 - i. No hollow-bearing habitat tree is to be completely isolated. Prior to felling, ensure an appropriate treed linkage between the habitat tree and retained habitat exists.
 - ii. A hollow-bearing habitat tree must be inspected by a tree climber to inspect potential occupation by gliders. If occupied, attempt to capture the gliders in the presence of at least two fauna spotter/catchers as ground support. If gliders cannot be captured because the tree hollow is too large, high or its recovery would breach Occupational Health and Safety requirements, then the tree can be cautiously felled and animals recovered post-felling and repatriated in accordance with the relevant fauna spotter/catcher license and permit conditions.
 - iii. Clearing of **Greater Glider habitat trees** must occur as late in the day as possible to avoid disturbing / dislocating nocturnal fauna in the middle parts of the day and thus exposing them to a greater period of daylight without shelter.
 - iv. Hollow-bearing **Greater Glider habitat trees** are to be mechanically shaken or agitated prior to felling to encourage any remaining animals to either leave the tree or reveal themselves and subsequently be removed prior to felling.
 - v. Felling is to involve gently pushing against the tree and lowering or felling using equipment (e.g. claw extension or forestry harvester) that would allow the habitat trees to be lowered to the ground. Avoid sudden falling which is likely to injure wildlife. Undertake selective removal of large hollow limbs by a climbing arborist prior to tree felling.
 - vi. Animals that emerge should be captured, inspected for injury then relocated to pre-determined habitat identified for fauna release or repatriated to designated veterinary options or a licensed wildlife carer.
 - vii. Felled hollow-bearing habitat trees must be left for a period of 24 hours (and where possible, adjacent to a retained habitat area that contains hollow-bearing trees) to allow any undetected fauna further opportunity to escape.
 - viii. Following the felling of hollow-bearing trees, a suitably qualified person is to identify and mark natural hollows for potential salvage as hollow ground timber or arboreal hollows for placement in rehabilitated mine areas. Such resources are to be removed from the clearing precinct as soon as practicable.
- e) Undertake monitoring by a **suitably qualified field ecologist** of the **Greater Glider Habitat** of Hughes Creek, Plumtree Creek and Boomerang Creek, including in reaches that would be subject to subsidence and changed stream morphology to record greater glider numbers and habitat condition.
- f) Undertake **rehabilitation** of the riparian zones associated with watercourses to create and maintain **Greater Glider Habitat** connectivity.

- g) Install glider poles to replace senescent or dead trees impacted by subsidence. An appropriate distance between poles must be determined by site observations from a **suitably qualified field ecologist** in order to maintain **Greater Glider** movement and connectivity.
9. To avoid and mitigate **harm** as a result of the Action to the **water resources**, the approval holder must implement the following mitigation measures:
- a. Install four groundwater monitoring bores specified in EIS Chapter 21, Table 21-54 and depicted in Figure 21-50 prior to **commencement of the action**.
 - b. Develop a Groundwater Monitoring Program to monitor changes to the groundwater resources and to provide early detection and management responses to impacts on groundwater levels, groundwater ingress or groundwater quality.
 - c. Develop a Site Water Management Plan in the detailed design phase that would incorporate the water management system, measures to manage and avoid acid rock drainage and saline drainage, containment of mine affected water and development of an Erosion and Sediment Control Plan.
 - d. Implement the SMP to monitor and manage any subsidence-related impacts impacting water resources including, but not limited to surface cracking, erosion, ponding, and changes to watercourse geomorphology and ecology.

Action management plans

Matters of National Environmental Significance Management Plan

The purpose of the following conditions is to avoid and mitigate harm to protected matters as a result of the Action.

- 10. The approval holder must submit a Matters of National Environmental Significance Management Plan (MNESMP) to the **department** for the **Minister's** approval, prior to the commencement of the action.
- 11. The approval holder must not commence the Action unless the **Minister** has approved the MNESMP in writing. The approval holder must commence implementing the MNESMP, as approved by the **Minister** in writing, no later than the **commencement of the Action** and continue to implement it until the expiry date of this approval.
- 12. The MNESMP must be prepared with the input of a **suitably qualified ecologist**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds** and performance indicators in the MNESMP must be **SMART**, specific to each **protected matter**, and based on referenced or included evidence of effectiveness. The MNESMP must be consistent with the **Environmental Management Plan Guidelines** and the **National Light Pollution Guidelines for Wildlife**, and must include:
 - a. details of the relevant **protected matters** and a reference to **EPBC Act** approval conditions to which the plan refers.
 - b. a table of commitments made in the plan to achieve the environmental outcomes, and a reference to exactly where these commitments are detailed in the plan.
 - c. commitments capable of ensuring that the environmental outcomes are achieved.
 - d. reporting and review mechanisms to demonstrate compliance with the commitments made in the plan.

- e. an assessment of risks relating to achieving the environmental outcomes and risk management strategies and/or mitigation measures that will be applied to address identified risks.
- f. impact avoidance, mitigation and/or repair measures, and the timing of those measures.
- g. a monitoring program, which must include:
 - i. performance indicators
 - ii. **trigger thresholds** for corrective measures
 - iii. the timing and frequency of monitoring, ensuring monitoring is capable of detecting **trigger thresholds** and changes in the performance indicators, and
 - iv. proposed corrective measures if **trigger thresholds** are reached.
- h. references to other relevant plans or conditions of approval (including state or territory approval conditions).

Groundwater Dependent Ecosystem Monitoring and Management Plan

The purpose of the following conditions is to avoid and mitigate **harm to protected matters** as a result of the Action.

- 13.** The approval holder must submit a Groundwater Dependent Ecosystem Monitoring and Management Plan (GDEMMP) to the **department** for the **Minister's** approval. The approval holder must not **commence the Action** until the GDEMMP has been approved by the **Minister** in writing. The approval holder must commence implementing the GDEMMP, as approved by the **Minister** in writing, prior to the **commencement of the Action** and continue to implement the approved GDEMMP until the expiry date of this approval.
- 14.** The GDEMMP must be prepared by a **suitably qualified GDE expert**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds** and performance indicators in the GDEMMP must be **SMART** and based on referenced or included evidence of effectiveness. The GDEMMP must be consistent with the **Environmental Management Plan Guidelines**, and must:
 - a. specify the design of, and subsequently be informed by the initial implementation of, a program of monitoring groundwater dependent ecosystem (GDE) **habitat quality** for each of the 13 **GDE monitoring areas** specified in [Attachment H](#).
 - b. provide two years of GDE baseline monitoring records (comprising at least four monitoring events covering at least two wet seasons and two dry seasons) to inform the specification of groundwater **trigger thresholds** and **limits** to prevent **harm** to GDEs.
 - c. report on the condition of all potential GDE areas in, and within 10 km of, the **Action area** including those in any approved offset area.
 - d. specify surface water quality, sediment quality, and macroinvertebrate **trigger thresholds** and **limits**.
 - e. detail how changes to surface water quality, sediment quality, macroinvertebrates, and the **receiving environment**, as a result of the Action, would be detected, assessed, and limited so that unapproved **harm to protected matters** does not occur, and
 - f. specify the corrective measures to be implemented if **trigger thresholds** are reached.

- 15.** The GDEMMP must include the following related to **stygo fauna**:
- trigger thresholds** and **limits** for impacts to **stygo fauna** abundance and diversity.
 - detection and monitoring measures to determine whether **stygo fauna** are being impacted by the Action and, if so, which ones and how much.
 - a monitoring program utilising bores capable of detecting any **exceedance** of approved **stygo fauna trigger thresholds** or **limits**.
 - corrective measures to be implemented in the event that any **stygo fauna trigger threshold** is **exceeded**.

Subsidence Management Plan

The purpose of the following conditions is to avoid and mitigate **harm** to **protected matters** as a result of the Action.

- 16.** The approval holder must submit an updated Subsidence Management Plan (SMP) to the **department** for the **Minister's** approval. The approval holder must not **commence the Action** until the SMP has been approved by the **Minister** in writing. The approval holder must commence implementing the SMP, as approved by the **Minister** in writing, prior to the **commencement of the Action** and continue to implement the approved SMP until the expiry date of this approval.
- 17.** The SMP must be prepared by a **suitably qualified ecologist**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds, limits** and performance indicators specified in the SMP must be **SMART**, specific to each protected matter and based on referenced or included evidence of effectiveness. The SMP must be consistent with the **Environmental Management Plan Guidelines**, and must include:
- an overview of the existing environment of the subsidence area,
 - a summary of the key impacts that may arise as a result of the subsidence,
 - a program of effective monitoring to detect the actual and potential environmental impacts of subsidence including, but not limited to:
 - landform change
 - surface cracking
 - erosion
 - surface water flows, including dewatering or ponding,
 - watercourse channel movement, and
 - ecology.
 - The monitoring program for ecology must monitor impacts on **Brigalow TEC, ornamental snake, squatter pigeon, koala** and **greater glider**. The monitoring program must include:
 - performance indicators
 - trigger thresholds for corrective measures
 - the timing and frequency of monitoring, ensuring monitoring is capable of detecting trigger thresholds and changes in the performance indicators, and
 - proposed corrective measures if trigger thresholds are reached.
 - a process for the assessment of the adequacy of any completed repair works or recommended measures from the previous monitoring period,
 - a process to monitor the completion of measures,
 - trigger thresholds** and **limits** which the approval holder commits to not **exceed**, and

- h. corrective measures to be implemented if a **trigger threshold** is reached.

Water Management Plan

The purpose of the following conditions is to avoid and mitigate **harm to protected matters** as a result of the Action.

18. The approval holder must submit a Water Management Plan (WMP) to the **department** for the **Minister's** approval. The approval holder must not **commence the Action** until the WMP has been approved by the **Minister** in writing. The approval holder must commence implementing the WMP, as approved by the **Minister** in writing, prior to the **commencement of the Action** and continue to implement the approved WMP until the expiry date of this approval.
19. The WMP must be prepared by a **suitably qualified water expert**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds, limits** and performance indicators in the WMP must be **SMART** and based on referenced or included evidence of effectiveness. The WMP must be consistent with the **Environmental Management Guidelines**, and must:
 - a. specify **trigger thresholds** and **limits** for groundwater levels and quality.
 - b. detail how changes to groundwater levels and quality, as a result of the Action, will be detected, assessed and limited.
 - c. detail a monitoring program that utilises a network of groundwater monitoring bores capable of detecting any potential **exceedance of trigger thresholds, limits** and any **harm to protected matters**.
 - d. specify the corrective measures to be implemented in the event that a groundwater level or quality **trigger threshold** is exceeded.
 - e. specify surface water quality, sediment quality, and macroinvertebrate **trigger thresholds**.
 - f. detail how changes to surface water quality, sediment quality, macroinvertebrates, and the **receiving environment**, as a result of the Action, will be detected, assessed, and limited.
 - g. specify corrective measures to be implemented in the event that a surface quality **trigger threshold** is exceeded.
 - h. detail a monitoring program that utilises a network of surface water monitoring locations capable of detecting any potential **exceedance** of surface water quality, sediment quality, or macroinvertebrate **trigger thresholds, limits** and any **harm to protected matters**.
 - i. specify measures to prevent erosion and sedimentation as a result of the Action to ensure **harm** to aquatic habitat and water quality is minimised.
 - j. specify management measures for uncontrolled releases of mine-affected water and other sources of **contamination** generated by the Action to ensure they do

not cause unapproved impacts to the environment.

- k. specify the format and timing for the reporting of monitoring data and analysis of that data to predict the likelihood of any **trigger thresholds** being **exceeded**, and
- l. specify procedures for periodic review of the effectiveness of the WMP, at a minimum of once every three years from the date of **commencement of the Action**.

20. In the event that monitoring, tests, surveys or investigations indicate an exceedance of a **trigger threshold** or **limit** specified in the approved WMP, the approval holder must:

- a. report the **exceedance** of a **limit** in writing to the **department** as an **incident** within 2 **business days** of becoming aware of the **exceedance**, including details of any immediate corrective measures implemented and their effectiveness.
- b. commence implementing the corrective measures specified in the approved WMP within 24 hours of becoming aware of any **exceedance** of a **trigger threshold**.
- c. report any **exceedance** of a **trigger threshold** in writing to the **department** in the next **compliance report** following the approval holder becoming aware of the **exceedance**.
- d. investigate to determine the cause of any **exceedance** of a **limit**.
- e. investigate to determine the extent and severity of potential environmental **harm** or alteration of the **receiving environment** that occurred or is likely to occur due to any **exceedance** of a **limit**, and
- f. provide a report to the **department** within 21 **business days** of any **exceedance** of a **limit** being detected. The report must include:
 - i. the findings of the investigations required by condition's 19) d) and 19) e)
 - ii. measures to prevent **exceedance** of the **limit** in the future
 - iii. measures to prevent, mitigate and remedy any unapproved environmental **harm**, and
 - iv. a recommendation and justification of whether the **trigger thresholds** should be revised based on better understanding, demonstrating that **limits** will not be **exceeded** again.

Progressive Rehabilitation and Closure Plan

The purpose of the following conditions is to avoid and mitigate **harm** to **protected matters** as a result of the Action.

21. To avoid and mitigate **harm** to protected matters and their habitats as a result of the action, the approval holder must implement a progressive rehabilitation and closure plan (PRC plan) in accordance with the **Queensland Environmental Authority** and continue to implement the PRC plan until the completion of the action.

22. The approval holder must submit the approved PRC plan to the **department** within 5 **business days** of it being approved by the administering authority under Chapter 5 of the *Environmental Protection Act 1994* in accordance with the **Queensland Environmental Authority**.
23. The PRC plan must be prepared with the input of a **suitably qualified ecologist**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds, limits** and performance indicators specified in the PRC plan must be **SMART** and based on referenced or included evidence of effectiveness. The PRC plan must be consistent with the **Environmental Management Plan Guidelines**, and must include:
- an overview of the existing environment of the rehabilitation area.
 - a summary of the key impacts that may arise as a result of the Action.
 - a summary of the areas to be rehabilitated.

Weed and Pest Management Plan

The purpose of the following conditions is to avoid and mitigate **harm** to **protected matters** as a result of the Action.

24. The approval holder must submit a **Weed and Pest Management Plan** (WPMP) to the **department** for the **Minister's** approval. The approval holder must not **commence the Action** until the WPMP has been approved by the **Minister** in writing. The approval holder must commence implementing the WPMP, as approved by the **Minister** in writing, prior to the **commencement of the Action** and continue to implement the approved WPMP until the expiry date of this approval.
25. By implementing the approved WPMP, the approval holder must achieve the following environmental outcome/s:
- no introductions of new weed or pest animal species to the project site.
 - ongoing implementation of pest weed and animal control programs including:
 - weed hygiene protocols for inspecting and cleaning all vehicles, machinery and equipment that enter the project site.
 - the introduction or movement of soil or fill material into or within the project site must be in accordance with a Weed Hygiene Declaration form.
 - control of feral animals (cats, foxes, dogs, pigs) to reduce risks from predation of native fauna, habitat degradation and introduction of disease.
 - coordinated baiting programs with adjacent land managers to maximise the effectiveness of controlling feral cats, foxes, dogs and pigs.
26. The WPMP must be prepared by a **suitably qualified ecologist**. All commitments, including environmental outcomes, management measures, corrective measures, **trigger thresholds, limits** and **performance indicators** specified in the WPMP must be SMART, specific to each protected matter, and based on referenced or included evidence of effectiveness. The WPMP must be consistent with the **Environmental Management Plan Guidelines**, and must include:
- Details of the relevant protected matters and a reference to EPBC Act approval conditions to which the plan refers.

- b. A table of commitments made in the plan to achieve environmental outcomes, and a reference to exactly where these commitments are detailed in the plan.
- c. commitments capable of ensuring that the environmental outcomes are achieved.
- d. reporting and review mechanisms to demonstrate compliance with the commitments made in the plan.
- e. an assessment of risks relating to achieving the environmental outcomes and risk management strategies and/or mitigation measures that will be applied to address identified risks.
- f. impact avoidance, mitigation and/or repair measures, and the timing of those measures
- g. a monitoring program, which must include:
- h. performance indicators including:
 - i. trigger thresholds for corrective measures.
 - ii. the timing and frequency of monitoring, ensuring monitoring is capable of detecting trigger thresholds and changes in the performance indicators, and
 - iii. proposed corrective measures if trigger thresholds are reached.
- i. references to other relevant plans or conditions of approval (including state or territory approval conditions).

Environmental Offsets

Offset site securement

- 27.** To compensate for the residual significant impacts of the Action on **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat and Squatter pigeon habitat**, the approval holder must not commence the Action until the offset sites have been secured.
- 28.** To compensate for the residual significant impacts of the Action on **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat and Squatter pigeon habitat**, the approval holder must:
 - a) within 12 months of **commencement of the Action**, provide to the **department**, for the **Minister's** written approval, the proposed **mechanism** to **secure** the offset site.
 - b) within 18 months of **commencement of the Action**, ensure the offset site is **secured** bearing the terms as approved by the **Minister**, and
 - c) within 5 **business days** of having the offset site **secured**, provide the **department** with written evidence demonstrating the offset site has been placed under a **securement** bearing the terms as approved by the **Minister**.
- 29.** The approval holder must ensure that the offset site remains secured at least until the expiry date of this approval.

Offset Area Management Plan

- 30.** To compensate for the residual significant impacts of **Stage 1** of the Action, prior to **commencement of the Action**, the approval holder must submit to the **department**,

for the approval of the **Minister**, a **Stage 1** Offset Area Management Plan (OAMP), proposing environmental offsets for impacts to **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**. The approval holder must not commence the Action unless the **Stage 1** OAMP has been approved in writing by the **Minister**. The approval holder must commence implementing the approved **Stage 1** OAMP by the **commencement of the Action** and continue to implement the approved **Stage 1** OAMP at least until the **completion of the action**.

31. To compensate for the residual significant impacts of **Stage 2** of the Action, prior to the **commencement of Stage 2** of the Action, the **approval holder** must submit to the department, for the approval of the **Minister**, a **Stage 2** Offset Area Management Plan (OAMP), proposing environmental offsets for impacts to **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**. The **approval holder** must not commence the operational stage of the Action unless the **Stage 2** OAMP has been approved in writing by the Minister. The **approval holder** must commence implementing the approved **Stage 2** OAMP by the commencement of the operational stage of the Action and continue to implement the approved **Stage 2** OAMP at least until the **completion of the Action**.
32. The **Stage 1** and **Stage 2** OAMPs must meet the requirements of the **Environmental Offsets Policy** and the **Environmental Management Plan Guidelines** to the satisfaction of the **Minister**.
33. The OAMPs must be consistent with the **Offset Strategy**.
34. The OAMPs must:
 - a. be prepared by a **suitably qualified ecologist**.
 - b. address the information requirements of Appendix 2 MNES in the Saraji Mining Lease Project terms of reference, and
 - c. be attached to the mechanism used to legally secure each offset area specified in the approved OAMP.
35. The approval holder must obtain the environmental offset area(s) specified in the approved OAMP prior to the **commencement of the Action** and submit the application to legally **secure** each of the environmental offset area(s) specified in the approved **Stage 1** OAMP prior to **commencement of the Action** and **Stage 2** OAMP prior to the **operational stage** of the Action. Each of the environmental offset area(s) specified in the approved OAMPs must be legally **secured** within 12 months of the date the application to legally **secure** each of the offset area(s) was submitted.
36. The approval holder must notify and provide evidence to the **department** in writing within five (5) **business days** of each environmental offset area being obtained and again within five (5) **business days** of the submission to legally **secure** each environmental offset area(s) and again within five (5) **business days** of each environmental offset area being legally **secured**.

OAMP Completion Criteria

- 37.** To ensure that the offsets required for **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**, provide a conservation gain in accordance with the **Environmental Offsets Policy**, the approval holder must:
- achieve the completion criteria specified in the approved OAMP within 20 years of the **commencement of the Action**, and
 - once the completion criteria specified in the approved OAMP have been achieved, maintain or improve the condition of the above types of habitat in the offset areas specified in the approved OAMP for the remaining duration of the approval.
- 38.** The approval holder must, within 40 **business days** of the 20th anniversary of the **commencement of the Action**:
- submit to the **department** a report detailing the areas and condition of **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**, recorded in the year prior to the 20th anniversary of the **commencement of the Action** in each offset area specified in the approved OAMP, and
 - notify the **department** in writing of any completion criteria at any offset area specified in the approved OAMP that has not been achieved and the likely reasons that this/ these completion criteria have not been met.
 - submit within three (3) months of notifying the **department** that offset completion criteria have not been achieved, for the approval of the **Minister**, a Supplemental Offset Plan consistent with the requirements at Offset Area Management Plan and Supplemental Offset Plan Requirements that will ensure the offset completion criteria specified under condition 31 are achieved.

Offset Area Management Plan and Supplemental Offset Plan Requirements

- 39.** The OAMP must include:
- detailed information on the residual impacts to **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**, that will be compensated for by the environmental offsets. This must include the area(s) of habitat for **protected matters** and its condition and quality at all locations impacted by the Action which the offset is to address.
 - baseline data, including results from field validation surveys, and quantifiable ecological data on **habitat quality**, and other supporting evidence, that documents the presence and condition of **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**, within the proposed environmental offset site(s).
 - evidence that the offset can compensate proportionally for impacts to **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat** and **Squatter pigeon habitat**, including for each proposed offset site, detailed baseline information on the area(s) of habitat, its condition, and the

presence (or not) of the **protected matters** at the proposed offset site.

- d. a reference to the **EPBC Act** approval conditions to which the OAMP refers.
 - e. detailed information and a shapefile specifying the location, area, and boundaries of each proposed offset site.
 - f. commitments to achievable ecological benefits at the offset site(s) and the timeframes in which they will be achieved.
 - g. specific offset completion criteria derived from the site **habitat quality** to demonstrate the improvement in the quality of **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat and Squatter pigeon habitat**, within the environmental offset sites over the period of effect of this approval required to meet the requirements of the **Environmental Offsets Policy**.
 - h. a table summarising all commitments to achieve the proposed ecological benefits for protected matters at the proposed offset site(s), and a reference to where each commitment is detailed in the OAMP.
 - i. details of the management actions, and timeframes for implementation, to be undertaken to achieve the completion criteria.
- 40.** Interim milestones that set targets at five-yearly intervals for progress towards achieving the offset completion criteria.
- 41.** Details of the nature, timing, and frequency of monitoring to inform progress against achieving the five-yearly interim milestones and maintaining improvements of **habitat quality** (the frequency of monitoring must be sufficient to track progress towards each set of milestones, and sufficient to determine whether the environmental offset is likely to achieve those milestones in adequate time to implement any necessary corrective actions).
- 42.** Timing for the implementation of corrective actions if monitoring activities indicate the interim milestones will not be, or have not been, achieved.
- 43.** A risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including weed and feral animal management, management of potential wildfires and a rating of all initial and post-mitigation residual risks in accordance with the risk assessment matrix.
- 44.** Evidence of how the management actions and corrective actions take into account relevant approved conservation advices, and are consistent with relevant recovery plans and threat abatement plans.
- 45.** A description of the environmental offset site(s), including location, size, condition,

environmental values present and surrounding land uses.

46. The mechanism by which the environmental offset site(s) will be legally secured.

- a. details of how the environmental offset will provide connectivity with other habitats, populations, and biodiversity corridors and/or will contribute to a larger strategic offset for **Brigalow TEC habitat, Ornamental snake habitat, Koala habitat, Greater glider habitat and Squatter pigeon habitat**.
- b. reporting and review mechanisms to inform the department annually regarding compliance with the management and environmental outcome commitments, and attainment and maintenance of the ecological benefits specified in the OAMP.
- c. an assessment of risks to achieving the ecological benefit(s) and what risk management measures and/or strategies will be applied to address these.
- d. a monitoring program, which must specify:
 - i. measurable performance indicators and the timeframes for their achievement to gauge attainment of the ecological benefits for the protected matters.
 - ii. trigger values for corrective actions, and
 - iii. the proposed timing (including season/time of day/frequency) methods and effort, and an explanation of how these will be effective for this purpose, of monitoring to detect trigger values, changes in the performance indicators and to gather evidence that effectively demonstrates actual progress towards, attainment of and maintenance of the ecological benefits for the protected matters.
 - iv. corrective actions to be implemented to ensure that the proposed ecological benefits for the **protected matters** are achieved or maintained if **trigger values** are reached or performance indicators not achieved in the specified timeframes.
 - v. how the proposed offset site(s) will be protected, and ecological benefits maintained, at least until completion of the action.

Definitions

Action area means the location of the Action, represented in [Attachment A](#) which contains the impact area for above-ground infrastructure, by the grey-shaded zones.

Active Squatter pigeon nest means a nest with evidence of use by juvenile Squatter pigeon or Squatter pigeon eggs to be determined by a **Suitably qualified field ecologist**.

Biodiversity data means 'biodiversity data' as described in the *Policy on Accessing and Sharing Biodiversity Data*, Commonwealth of Australia 2024.

Brigalow TEC means the **EPBC Act** listed threatened ecological community Brigalow (*Acacia harpophylla* dominant and co-dominant). Within the **Action area**, the location of **Brigalow TEC** identified as of the date of this approval is represented in [Attachment B](#) by the pink bounded zones representing the significant impact area for RE 11.3.1, RE 11.4.8, and RE 11.4.9 under the heading *Brigalow (Acacia harpophylla) dominant and co-dominant TEC*.

Business days means a day that is not a Saturday, a Sunday, or a public holiday in Queensland.

Clear, cleared or clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting, or burning of vegetation.

Commencement of the action means the date on which the first instance of any activity associated with the Action (including clearing and construction) is undertaken. Commencement of the Action does not include minor physical disturbance necessary to:

- a) Undertake pre-clearance surveys or monitoring programs.
- b) Install signage and/or temporary fencing to prevent unapproved use of the **Action area**, so long as the signage and/or temporary fencing is located where it does not harm any protected matter.
- c) Protect environmental and property assets from fire, weeds, and feral animals, including use of existing surface access tracks.
- d) Install temporary site facilities for persons undertaking pre-commencement activities so long as these facilities are located where they do not harm any protected matter.

Completion of the action means the date on which all activities associated with this approval have permanently ceased and/or been completed.

Compliance report means a written report of compliance with, and fulfilment of, these conditions (including compliance with commitments made in **plans**).

Construct means the erection of a building or structure that is, or is to be, fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; any work which involves breaking of the ground (including pile driving) or bulk earthworks; the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences, signage and groundwater monitoring bores.

Contamination means the presence of any substance which has the potential to pollute or **harm** the environment, including fuel, oil, and chemicals.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Environmental Management Plan Guidelines means the publication titled DCCEEW 2024, Environmental Management Plan Guidelines, Department of Climate Change, Energy, the Environment and Water, Canberra, March. CC BY 4.0. This publication is available at dcceew.gov.au/publications

Environmental Offsets Policy means the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy, Commonwealth of Australia 2012.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Erosion and Sediment Control Plan means the document required to satisfy stormwater and water sediment control conditions stated in Schedule F, Surface Water, of the Queensland draft Environmental Authority.

Exceed or exceedance means a value being greater than a **trigger threshold** or **limit** that is specified as a maximum, lower than a **trigger threshold** or **limit** that is specified as a minimum or outside a **trigger threshold** or **limit** specified as a range.

Fauna spotter-catcher means a person holding an appropriate license issued under the *Nature Conservation Act 1992 (Qld)* to detect, capture, care for, assess, and release wildlife disturbed by vegetation **clearance** activities and has at least three years' experience undertaking this work

with **Koala**, **Greater glider**, **Ornamental snake** and **Squatter pigeon** or is working under the supervision of a **Suitably qualified field ecologist**.

Fauna Spotter Code of Practice means the document titled *Queensland Code of Practice for the welfare of wild animals affected by land-clearing and other habitat impacts and wildlife spotter/catchers* – Draft, Australian Wildlife Hospital 2009.

Groundwater Dependent Ecosystems or **GDEs** means any ecosystem whose species and ecological processes rely on groundwater, either entirely or intermittently.

GDE field assessment means on the ground surveys using direct techniques (e.g. stable isotope analysis, leaf water potential measurement or soil moisture potential measurement) to investigate whether **terrestrial GDEs** are present and to assess the nature of that dependency, undertaken consistent with the **IESC Explanatory Note** and *Field investigation of potential terrestrial groundwater-dependent ecosystems within Australia's Great Artesian Basin*, Jones, C, Stanton, D, Hamer, N, Denner, S, Singh, K, Flook, S & Dyring, M 2019, Hydrogeology Journal, vol. 28, pp. 237–261.

GDE monitoring areas means the 13 locations referred to as Survey Area 1 to Survey Area 13 depicted on [Attachment H](#) and referred to in EIS Appendix D2 Groundwater Dependent Ecosystems Report.

Greater glider means the **EPBC Act** listed threatened species *Petauroides volans* (southern and central).

Greater glider habitat means any area of vegetation which supports the **Greater glider**, including habitat described in the *Conservation Advice for Petauroides volans (greater glider (southern and central))*, Commonwealth of Australia 2022. Within the **Action area**, the location of **Greater glider habitat** identified as of the date of this approval is represented in [Attachment G](#) by the pink bounded zones representing the significant impact area for Greater glider Habitat Critical to the Survival of the Species under the heading *Greater glider potential habitat within the Project Site*.

Habitat means:

- a) “preferred habitat” is habitat in which key activities are undertaken such as breeding, roosting and/ or where high quality/ species limiting foraging resources are found
- b) “suitable habitat” is habitat that provides foraging resources for the species but is not crucial for the species persistence in an area
- c) “marginal habitat” is habitat that provides limited resources for the species and may only be used occasionally for activities such as dispersal.

Habitat quality means a measure of the overall viability of a site and its capacity to support **protected matters**, with respect to site condition, site context and species stocking rate and/or composition.

Harm means to cause any measurable direct or indirect disturbance or deleterious change as a result of any activity associated with the action.

IESC Explanatory Note means the document *Information Guidelines Explanatory Note: Assessing groundwater-dependent ecosystems, Report prepared for the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development through the Department of the Environment and Energy*, Doody TM, Hancock PJ & Pritchard JL 2019, Commonwealth of Australia.

Incident means any event which has the potential to, or does, **harm** any **protected matter**.

Koala means the **EPBC Act** listed threatened species *Phascolarctos cinereus* (combined populations of Qld, NSW and the ACT).

Koala habitat means any area of vegetation which supports the **Koala**, including habitat described in the *Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory*, Commonwealth of Australia 2022. Within the **Action area**, the location of **Koala habitat** identified as of the date of this approval is represented in [Attachment F](#) by the pink bounded zones representing the significant impact area for Koala Habitat Critical to the Survival of the Species under the heading *Koala potential habitat within the Project Site*.

Limit means a detectable value of a parameter or set of criteria that the approval holder commits to not **exceed** and that, if **exceeded**, could result in unapproved **harm** to **protected matters**. A value may be expressed as a maximum, a minimum or a range.

Minister means the Australian Government Minister administering the **EPBC Act**, including any delegate thereof.

Monitoring data means the data required to be recorded under the conditions of this approval, including sensitive **biodiversity data**.

MNES means matters of national environmental significance under the **EPBC Act**.

National Light Pollution Guidelines for Wildlife means the *National Light Pollution Guidelines for Wildlife*, Commonwealth of Australia 2023.

Natural Grasslands TEC means the **EPBC Act** listed threatened ecological community *Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin ecological community*. Within the **Action area**, the location of impacted **Natural Grasslands TEC** identified as of the date of this approval is represented in [Attachment C](#) by the zone shaded pink representing the disturbance area.

OAMP means an Offset Area Management Plan document for stage 1 (construction) impacts or stage 2 (operation) impacts that details the proposed Environmental Offsets for impacts to **Brigalow TEC habitat**, **Ornamental snake habitat**, **Koala habitat**, **Greater glider habitat** and **Squatter pigeon habitat**.

Ornamental Snake means the **EPBC Act** listed threatened species Ornamental Snake (*Denisonia maculata*).

Ornamental Snake habitat means habitat in [Attachment D](#) by **Ornamental Snake**. The location of **Ornamental Snake habitat** within the **project area**, as of the date of this approval is represented in [Attachment D](#) by the pink bounded zones representing the significant impact area for Ornamental Snake Habitat Critical to the Survival of the Species under the heading *Ornamental Snake Potential Habitat*.

Plan means any action management plan or strategy that the approval holder is required by these conditions to implement.

Protected matter means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Queensland Environmental Authority means the license to conduct an environmentally relevant activity in Queensland which requires approval under the *Queensland Environmental Protection Act 1994*.

Receiving environment means connected and surrounding waterways within 5 kilometres (km) downstream of all release points and overflow points.

Secure, secured or securement means to provide enduring conservation protection on the title of land under an enduring protection mechanism agreed to in writing by the **department**, to provide protection for the site against development incompatible with conservation.

Shapefiles means location and attribute information about the Action provided in an Esri shapefile format containing:

- a) '.shp', '.shx', '.dbf' files,
- b) a '.prj' file which specifies the projection or geographic coordinate system used, and
- c) an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

Shelter Tree means low and understory trees in **Squatter Pigeon preferred habitat** near identified nests.

SMART means specific, measurable, achievable, relevant and time bound.

Squatter Pigeon means the **EPBC Act** listed threatened species Squatter Pigeon (Southern) (*Geophaps scripta scripta*).

Squatter Pigeon habitat means any area of vegetation which supports the **Squatter pigeon**, including habitat described in the *Conservation Advice Geophaps scripta scripta squatter pigeon (southern)*, Commonwealth of Australia 2015. Within the **Action area**, the location of **Squatter pigeon habitat** identified as of the date of this approval is represented in [Attachment E](#) by the pink bounded zones representing the significant impact area for Squatter pigeon Habitat Critical to the Survival of the Species under the heading *Squatter pigeon potential habitat within the Project Site*.

Stage 1 means the offsetting of the significant impacts to **MNES** resulting from construction of surface infrastructure and the IMG network in Year's 1 – 3 of the **action**. This stage also accounts for identified fragmentation impacts to Brigalow TEC and any other MNES resulting from construction, as determined by a **suitably qualified ecologist**.

Stage 2 means the offsetting of the significant impacts to **MNES** resulting from operation in Year's 3 – 20 of the **action**. This stage accounts for the modelled extent of ponding due to subsidence, as determined by a **suitably qualified ecologist**.

Stygofauna means aquatic fauna that live part or all of their lives in groundwater systems including aquifers and underground caves.

Suitably qualified ecologist (for the purpose of preparing and implementing environmental management plans) means a person who has relevant professional qualifications and:

- at least three years of work experience writing and implementing management plans for the habitat of **protected matters**,
- has implemented and reported on management plans for the habitat of **protected matters**, and can demonstrate the implementation of those plans achieved the desired **habitat quality** for habitat of **protected matters**, and
- can give authoritative assessment and advice on offset management to improve the **habitat quality** of the habitat of **protected matters** using relevant protocols, standards, methods and/or literature.

Suitably qualified field ecologist (for the purpose of undertaking environmental surveys) means a person who has relevant professional qualifications and at least three years of work experience designing and implementing surveys for **Brigalow TEC, Koala, Greater glider, Ornamental Snake** and **Squatter Pigeon** and can give an authoritative assessment and advice on the presence of **Brigalow TEC, Koala, Greater glider, Ornamental Snake** and **Squatter Pigeon**, and relocation of **Koala** and **Greater glider** using relevant protocols, standards, methods and/or literature.

Suitably qualified GDE expert means a person who has relevant professional qualifications,

knowledge of the management requirements of **terrestrial GDEs**, at least three years of work experience in preparing and/or assessing groundwater dependent ecosystem monitoring and management plans and can provide authoritative advice on the effectiveness of the GDEMMP in mitigating impacts to **terrestrial GDEs**.

Suitably qualified water expert means a person who has relevant professional qualifications, knowledge of the management requirements of **water resources**, at least three years of work experience in preparing and/or assessing water management plans and can provide authoritative advice on the effectiveness of the Water Management Plan in mitigating impacts to **water resources**.

Survey guidelines means the *Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as threatened under the EPBC Act*, Commonwealth of Australia 2011.

Terrestrial groundwater dependent ecosystems or **terrestrial GDEs** means all ecosystems within the groundwater area of investigation which are partially or wholly dependent on access to subsurface groundwater and includes many riparian communities.

Trigger threshold means a detectable value or set of criteria capable of providing early warning of the potential for **limits** to be reached and unapproved **harm** to **protected matters** to occur. A value may be expressed as a maximum, a minimum or a range.

Water resources means as the term is defined in the *Water Act 2007* (Cth). **Water resources** means:

- a) surface water or ground water; or
- b) a watercourse, lake, wetland or aquifer (whether or not it currently has water in it); and includes all aspects of the **water resource** (including water, organisms and other components and ecosystems that contribute to the physical state and environmental value of the **water resource**).

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Weed and Pest Management Plan means the document committed to be drafted to meet condition's 24 – 26.

References

Kerswell A, Kaveney T, Evans C and Appleby L. (2020) Habitat descriptions for 12 threatened species, specific to central Queensland. Report commissioned by BHP.

Attachments

A: Action Area

B: Brigalow TEC

C: Natural Grassland TEC

D: Squatter Pigeon habitat

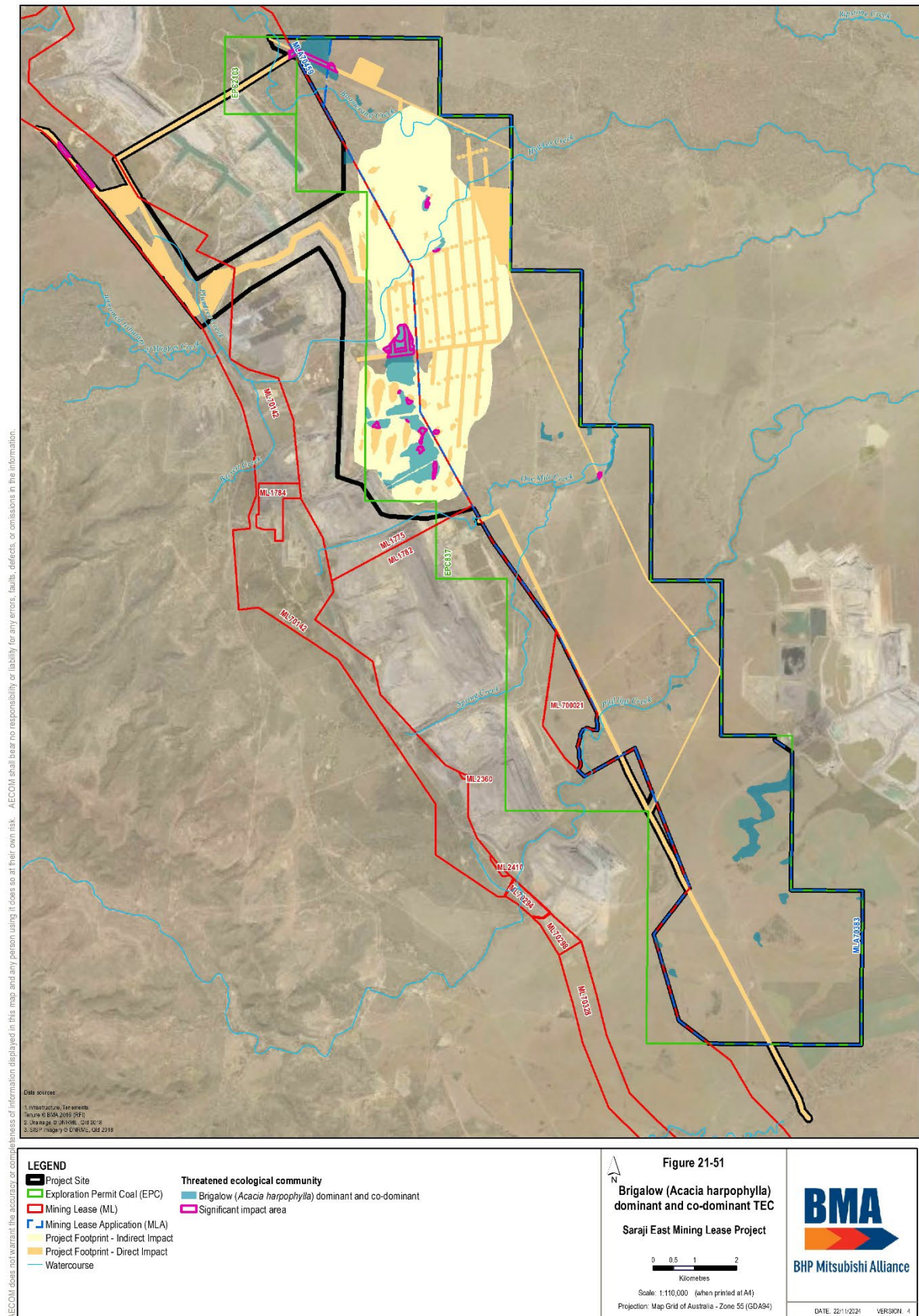
E: Ornamental Snake habitat

F: Koala habitat

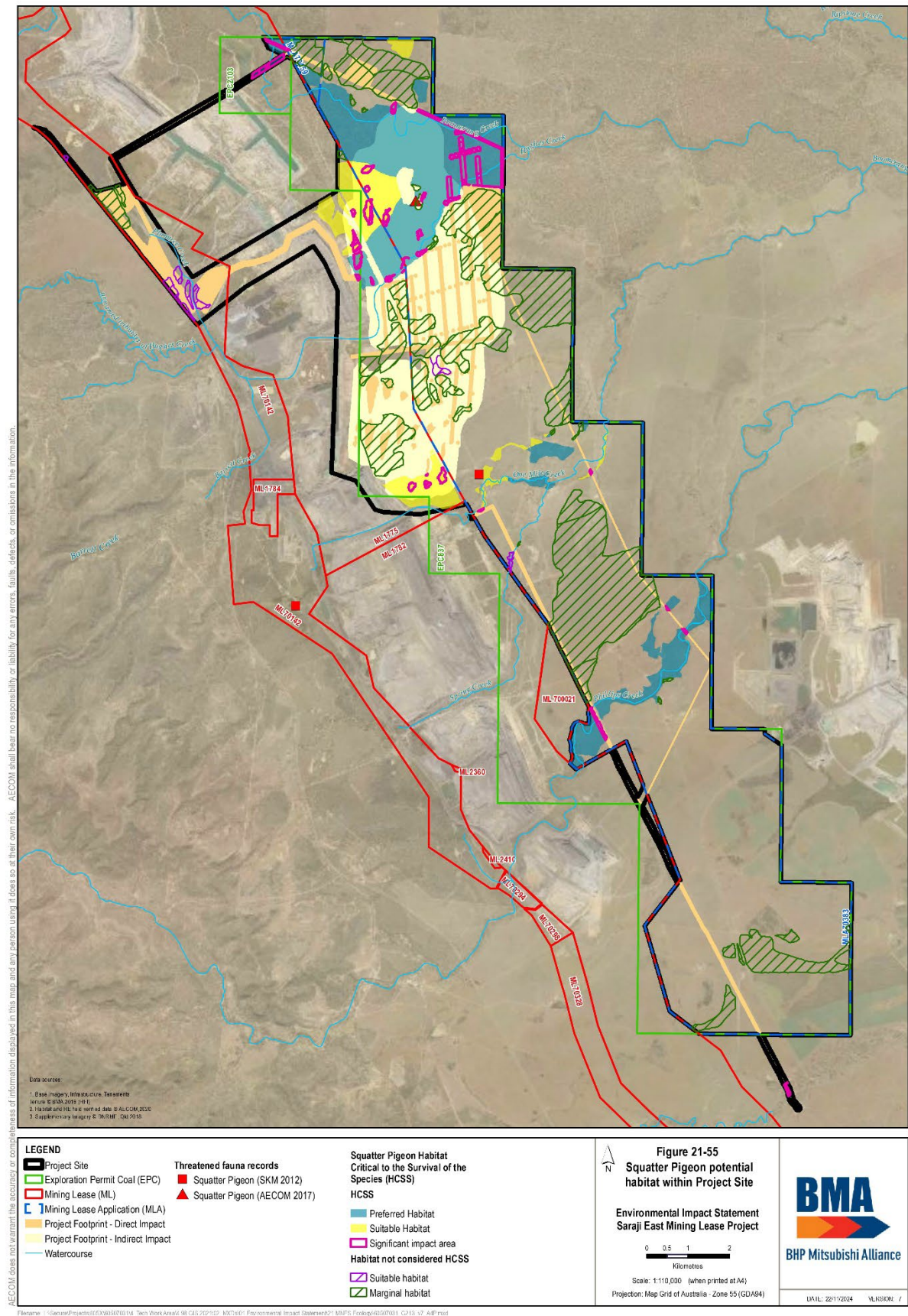
G: Greater Glider habitat

H: GDE Assessment Sites

Attachment B: Brigalow Threatened Ecological Community



Attachment E: Squatter Pigeon habitat



Appendix D—*Human Rights Act 2019* impact assessment

Introduction

This human rights assessment summarises how I have considered human rights, in accordance with the *Human Rights Act 2019* (HR Act) (current version dated 20 September 2023), in finalising the environmental impact statement (EIS) assessment process under the *Environmental Protection Act 1994* (EP Act) for the proposed Saraji East Mining Lease Project, by issuing this EIS assessment report.

BM Alliance Coal Operations Pty Ltd (BMA, the proponent) acting on behalf of Central Queensland Coal Associates (CQCA) Joint Venture (JV) is seeking approval to develop the Saraji East Mining Lease Project (the project). The project proposes to develop a single-seam longwall mine and supporting infrastructure adjacent to the existing open-cut Saraji Mine located approximately 30 kilometres (km) north of Dysart, Queensland. The project area includes granted mining leases (ML) 1775, ML 70142, ML 1782 as well as mining lease applications (MLA) 70383 and MLA 70459. Over a 20-year life of mine (LOM), the project is estimated to produce 110 million tonnes (Mt) of high-quality metallurgical (coking and pulverised coal injection) product coal. Annual extraction of product is estimated at up to 11 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal, producing up to 8 Mtpa of metallurgical product coal for the export market.

As the decision-maker, I have reviewed the EIS, which describes the project and assessed its potential environmental, economic, and social impacts. The EIS outlines monitoring, management and mitigation measures to avoid or minimise negative impacts and evaluates alternatives to the project. The EIS states that currently there is no viable alternative for commercial production of steel. State agencies and members of the public were also given opportunities to comment and make submissions.

Following a comprehensive assessment of the EIS, I have determined that the project is suitable to proceed, subject to strict conditions and required actions to be undertaken by the proponent. The EIS assessment process concludes with the provision of the environmental impact statement assessment EIS assessment report to the proponent.

Although my determination impacts BMA, only individuals— not corporations — have human rights under HR Act. Accordingly, this assessment considers only how my decision may impact the human rights of individuals'.

In accordance with the HR Act, I have ensured that my decision is compatible with human rights. This assessment outlines how those considerations have informed the finalisation of the project's EIS assessment.

Legislative basis

Section 58(1)(a) of the HR Act makes it unlawful for a public entity to act or make a decision in a way that is not compatible with human rights. Section 58(1)(b) further makes it unlawful to fail to give proper consideration to a relevant human right when making a decision.

The HR Act applies to public service employees, including a decision maker for an EIS assessment report under the *Environmental Protection Act 1994* (EP Act). When deciding if the project is suitable to proceed, I am required to:

- give proper consideration to human rights relevant to my decision; and

- make decisions that are compatible with human rights.

A decision is compatible with human rights if it does not limit a human right or limits a human right only to the extent that is reasonable and demonstrably justifiable in accordance with section 13 of the HR Act (section 8 of the HR Act).

In order to decide whether a limit on a human right is reasonable and demonstrably justified, it is necessary to consider:

- (a) the nature of the right;
- (b) the nature and purpose of the limitation;
- (c) whether the limitation helps to achieve the purpose;
- (d) whether there is any less restrictive way of achieving the purpose;
- (e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right (section 13(2)).

I have undertaken these considerations as set out below

Section 58(1)(b) of the HR Act makes it unlawful for a public entity, in its decision making, to fail to give proper consideration to a HR relevant to a decision or action. It is also unlawful for a decision to be made in a way that is not compatible with human rights (section 58(1)(a) of the HR Act).

The HR Act relevantly applies to public service employees, including a decision maker for an Environmental Impact Statement assessment report (EIS assessment report) under the *Environmental Protection Act 1994* (EP Act). When deciding if the project is suitable to proceed, I am required to:

- give proper consideration to human rights relevant to my decision; and
- make decisions that are compatible with human rights.

A decision will be compatible with human rights if it does not limit a human right or limits a human right only to the extent that is reasonable and demonstrably justifiable in accordance with section 13 of the HR Act (section 8 of the HR Act).

In order to decide whether a limit on a human right is reasonable and demonstrably justified, it is necessary to consider:

- a) the nature of the right;
- b) the nature and purpose of the limitation;
- c) whether the limitation helps to achieve the purpose;
- d) whether there is any less restrictive way of achieving the purpose;
- e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right (section 13(2)).

I have undertaken these considerations as set out below.

Assessment details

Decision/Action

This human rights assessment relates to the action under section 57 of the EP Act of giving the EIS assessment report for the Saraji East Mining Lease project to the proponent including the requirements under section 59 to make recommendations about the suitability of the project

Section 57 of the EP Act requires that the chief executive must give the proponent a report (an EIS assessment report) about the submitted EIS within 30 business days after:

- a) if, at the end of the submission period, the chief executive has accepted any submissions—the day the notice mentioned in subsection (1) was given; or
- b) otherwise—the end of the submission period.

Related to the requirement under section 57, the EP Act requires that under section 58 in preparing an EIS assessment report, the chief executive must consider the following:

- a) the final terms of reference for the EIS;
- b) the submitted EIS;
- c) all properly made submissions and any other submissions accepted by the chief executive;
- d) the standard criteria;
- e) another matter prescribed under a regulation.

For criterion (e), consideration must be given to matters prescribed in Schedule 1 of the Environmental Protection Regulation 2000 (EP Regulation).

Additionally, section 59 of the EP Act lists the required content of an EIS assessment report. An EIS assessment report must:

- a) address the adequacy of the EIS in addressing the final terms of reference; and
- b) address the adequacy of any environmental management plan for the project; and
- c) make recommendations about the suitability of the project; and
- d) recommend any conditions on which any approval required for the project may be given; and
- e) contain another matter prescribed under a regulation.

With regard to item (e), section 9 of the EP Regulation prescribes the matters that an EIS assessment report must contain.

Human rights engaged

I have considered all 23 human rights protected under the HR Act and identified the following as potentially engaged by the decision:

- **Section 15(2)** – Recognition and equality before the law - Every person has the right to enjoy the person's human rights without discrimination.
- **Section 16** – Right to life - Every person has the right to life and has the right not to be arbitrarily deprived of life.

- **Section 24(2)** – Property rights - A person must not be arbitrarily deprived of the person's property.
- **Section 26(2)** – Protection of families and children - Every child has the right, without discrimination, to the protection that is needed by the child, and is in the child's best interests, because of being a child.
- **Section 28** - Cultural rights – Aboriginal peoples and Torres Strait Islander peoples
 - Aboriginal peoples and Torres Strait Islander peoples hold distinct cultural rights.
 - Aboriginal peoples and Torres Strait Islander peoples must not be denied the right, with other members of their community—
 - to enjoy, maintain, control, protect and develop their identity and cultural heritage, including their traditional knowledge, distinctive spiritual practices, observances, beliefs and teachings; and
 - to enjoy, maintain, control, protect, develop and use their language, including traditional cultural expressions; and
 - to enjoy, maintain, control, protect and develop their kinship ties; and
 - to maintain and strengthen their distinctive spiritual, material and economic relationship with the land, territories, waters, coastal seas and other resources with which they have a connection under Aboriginal tradition or Island custom; and
 - to conserve and protect the environment and productive capacity of their land, territories, waters, coastal seas and other resources.
 - Aboriginal peoples and Torres Strait Islander peoples have the right not to be subjected to forced assimilation or destruction of their culture.

Limitations

I consider that the above human rights are potentially limited by my decision to allow the project to proceed and to issue the EIS report and as such, may be subject to limitation by the project. I must consider whether the limitations are reasonable and demonstrably justifiable in accordance with section 13 of the HR Act.

The decision to allow the project to proceed is authorised under the EP Act, therefore it is 'under law' (section 13(1) of the HR Act).

This assessment is summarised below.

Climate change

I consider climate change to be one of several important factors that can influence and impact individuals' rights to life, children and families, and cultural rights of Aboriginal peoples and Torres Strait Islander peoples in sections 16, 26, and 28 of the HR Act. Accordingly, it is relevant and appropriate to consider the relationship between greenhouse gas (GHG) emissions and human rights in this assessment.

The mining and combustion of coal associated with the project would contribute to Australia's and Queensland's overall carbon emissions. These emissions form part of the broader context in which the

Australian government is seeking to meet its commitments under the Paris Agreement, to limit global temperature increases to well below 2°C, while pursuing efforts to limit them to 1.5°C, and Queensland's goal of achieving net zero emissions by 2050.

The project's annual GHG emissions (for Scope 1 and Scope 2) are estimated to represent approximately 0.19% of Australia's 2021 GHG emissions and 0.6% of Queensland's 2021 GHG emissions. Over the 20-year life of mine, combined Scope 1 and Scope 2 emissions are estimated at 18 Mt carbon dioxide equivalent (CO₂-e), with Scope 3 emissions estimated at 451 Mt CO₂-e. The project's EIS did not provide an estimate of emissions from land clearing. DETSI estimated the land clearing emissions to be 333,311 t CO₂-e, representing approximately 1.8% of the project's lifetime Scope 1 emissions. Although the project's overall contribution to GHG emissions is relatively small, it still has the potential to contribute to broader climate change impacts.

I consider a fair balance has been struck between allowing the project to proceed and protecting the relevant human rights that may be impacted by climate change. The mine is expected to bring important economic and social benefits to the region, including improvements to infrastructure and services that will likely enhance overall community wellbeing.

I have also recommended in the EIS assessment report that the proponent provide a GHG abatement plan detailing how they will mitigate and reduce the project's contribution to climate change. It is important to note that my recommendation for the project to proceed is not the only approval required for operations to commence. Further consideration of human rights will be required when deciding whether a draft Environmental Authority (EA) should be issued for the project under the EP Act.

Section 15(2) – Recognition and equality before the law

(a) nature of the right

Every person has the right to enjoy human rights without discrimination. This includes where limitations may not be experienced equally and are disproportionate to those who are vulnerable.

In the HR Act schedule 1, *discrimination in relation to a person, includes direct discrimination or indirect discrimination, within the meaning of the Anti-Discrimination Act 1991, on the basis of an attribute stated in section 7 of that Act*. The attributes in section 7 that have been determined as relevant for the assessment decision include age and race. In relation to indirect discrimination, I have considered whether my decision imposes a burden or denies a benefit in a way that has the effect of reinforcing, perpetuating, or exacerbating disadvantage, including historical or systemic disadvantage.

(b) the nature and purpose of the limitation

The project has the potential to limit the human rights under section 15(2) regarding fair and non-discriminatory treatment of Aboriginal peoples. The land underlying the project is traditionally owned by the Barada Barna People and there is a risk that their human rights and interests could be disproportionately impacted compared to non-Indigenous people.

The EIS process, including public notification and consultation, aims to provide all interested and affected persons, including Aboriginal peoples, the opportunity to input on various aspects of the project. The project will provide social and economic benefits both regionally and locally. The purpose of generating social and economic benefits (including providing energy security) is consistent with a free and democratic society based on human dignity, equality and freedom.

(c) whether the limitation helps to achieve the purpose

The limitations on the human rights identified are directly connected to my recommendation in the EIS assessment report that the project is suitable to proceed.

(d) whether there is any less restrictive way of achieving the purpose

I do not consider there is any less restrictive way of achieving the purpose of allowing the project to proceed. I have made recommendations in the EIS assessment report about measures to reduce potential impacts on human rights where appropriate.

(e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right

I have determined that the decision to allow the project to proceed will potentially limit the human rights in section 15(2) because of the project's contribution to climate change. I consider that a fair balance has been struck between the potential limitations on the right for a person to enjoy their human rights equally and without discrimination under section 15(2) of the HR Act and the importance of allowing the project to proceed. The project will provide significant economic and social benefits, including the creation of employment opportunities, enhancement of regional infrastructure, and long-term economic development for the broader community, including Indigenous populations. Currently there is no viable alternative for the commercial production of steel that would be produced from the metallurgical coal product generated from the project. Investigations for alternatives are being undertaken by industry; however, the widespread deployment of new technology is not available.

Therefore, I consider the limitation is reasonable and justified.

Section 16 – Right to life

(a) the nature of the right

Every person has the right to life and has the right to not be arbitrarily deprived of life. It is important to take into consideration how the project potentially limits the right to life of individuals and whether this is proportionate to the benefits of the project proceeding.

(b) the nature and purpose of the limitation

The project has the potential to limit the human rights under section 16 because of the project's direct impacts on the environment and people in the vicinity of the project and because of its contribution to climate change.

The project involves activities that directly and indirectly impact the environment in the vicinity of the project. There are also potential impacts to people who use the surrounding environment for work, recreation and cultural practices. This includes but not limited to impacts resulting from:

- GHGs emission
- climate change
- air quality from dust and particulate matter emissions
- contribution to cumulative air quality impacts.

The mining and combustion of the project's coal would emit GHGs (mostly CO₂) into the atmosphere. Whilst the amount of CO₂ emitted would be small from a global emissions perspective, it may contribute to climate change. There is evidence to suggest that climate change will disproportionately impact those who have vulnerabilities due to age, whether young or old, or because of underlying health conditions, and for First Nations peoples, more than others. Furthermore, there is evidence to suggest that future generations will not have the same freedoms as the current generation. The options for avoiding dangerous climate change may be restricted, therefore, the intergenerational aspect is a key consideration for this right.

Air quality impacts from dust generation directly impact sensitive receptors within the vicinity of the mine. A sensitive receptor is a location that may be vulnerable to impacts, such as residential or commercial places where people are present for extended periods of time. There are seven sensitive receptors that have been considered in the project's EIS, noting that several locations have co-existence agreements in place. The main pollutant of concern is dust generated during all phases (construction, operation, decommissioning) of the project.

Several mines are located adjacent to the proposed project and have the potential to cumulatively impact sensitive receptors within the vicinity. Estimates of air quality impacts resulting only from the project indicate that only one sensitive receptor (Saraji East Homestead 2) may be impacted. The annual emissions estimated for PM₁₀, PM_{2.5}, and total suspended particles (TSP) are less than 0.6% of the total cumulative dust generated across mining sites adjacent to the sensitive receptors. Although the dust impacts resulting from the project seem inconsequential, there is potential for adverse impacts during severe weather events. Additionally, the project is contributing to the dust generated in the region from mining activities and contributes to impacts on areas used for work, recreation and cultural practices.

(c) whether the limitation helps to achieve the purpose

The limitation on the rights to life is directly related to my recommendation in the EIS assessment report that the project is suitable to proceed.

(d) whether there is any less restrictive way of achieving the purpose

I do not consider there is any less restrictive way of achieving the purpose of allowing the project to proceed. I have made recommendations in the EIS assessment report about measures to reduce potential impacts on human rights where appropriate.

(e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right

I consider that a fairness balance has been struck between the potential limitations on human rights and the importance of allowing the project to proceed. The project will provide significant economic and social benefits, including the creation of employment opportunities, enhancement of regional infrastructure, and long-term economic development for the broader community, including Indigenous populations. As the decision-maker, I have considered the potential for the project to impact right to life and ensured that the EIS recommends conditions to be placed on the draft EA requiring the proponent to avoid, mitigate and monitor the various impacts to properties including direct impacts from land disturbance, and nuisance matters such as dust impacts. I consider it appropriate that conditions be placed on the draft EA for these matters along with conditions requiring rehabilitation activities on-site to ensure rights to life are protected to the extent possible and land is restored to a suitable post-mining land use.

Section 24(2) – Property rights

(a) nature of the rights

Property rights under section 24(2) include that a person must not be arbitrarily deprived of the person's property.

(b) The nature and purpose of the limitation

The project has the potential to limit the human rights under section 24 because of the project's direct impacts on property in the vicinity of the project.

The project will have direct impact to the property rights within and adjacent to the property area. This includes, but is not limited to, direct impacts resulting from:

- dust, noise, lighting nuisance
- land disturbance and vegetation clearing
- ponding
- subsidence
- groundwater drawdown
- temporary or permanent restrictions on access.

Additionally, there may be impacts to water resources as a result of the activities.

The decision to allow the project to proceed, and provide the EIS assessment report, are being undertaken in accordance with the requirements of the EP Act after appropriate consideration of the following relevant factors:

- the final terms of reference for the EIS;
- the submitted EIS;
- all properly made submissions and any other submissions accepted by the chief executive;
- the standard criteria;

I have formed the view that the project has the potential to limit the human rights in section 24(2), being property rights, because of the project's direct impacts on properties within the proposed mining area, and adjacent properties that may also be affected.

(c) whether the limitation helps to achieve the purpose

The limitation on the rights to property and privacy is directly related to my recommendation in the EIS assessment report that the project is suitable to proceed.

(d) whether there is any less restrictive way of achieving the purpose

I consider that the proponent has made every effort to identify impacts to property rights. Ponding will be drained where possible, and the proponent will rehabilitate the land as suitable grazing land. The proponent also has compensation agreements with the landowners for dust nuisance. The proponent will also identify impacted registered and unregistered bore owners on adjacent properties, to address make good obligations under s409 of the *Water Act 2000*, however there may be impacted individuals not yet identified.

I consider it appropriate that conditions be placed on the draft EA for these matters. In my opinion, there is no less restrictive way of achieving the purpose of allowing the project to proceed.

(e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right

Based on the above considerations, it is my opinion that a fair balance has been struck between the potential limitation of the human rights in section 24(2) and the importance of allowing the project to proceed. There are significant impacts on property, including the property rights of the Traditional Owners and Indigenous community members (due to the potential impacts on land and resources of cultural and traditional significance). However, there are also significant economic and social benefits the project is expected to deliver, including regional job creation, economic development, and improved community infrastructure. Importantly, the proponent has demonstrated a clear commitment to avoiding and minimising impacts on land and cultural values through careful project design, route selection, and operational controls. In addition, the proponent has committed to progressive rehabilitation of disturbed areas and ongoing consultation with affected communities, ensuring that impacts are not only minimised during the life of the project, but that land is restored to a condition that supports future use and cultural continuity.

Section 26(2) – Protection of families and children

(a) the nature of the right

The right of protection of families and children (section 26(2)) includes the right for protection that is needed by the child, and is in the child's best interests, because of being a child, without discrimination. This includes intergenerational equity that every child has the right to. The intergenerational nature of climate change is a consideration, as children today and in the future will bear the more extreme effects of climate change. The frequency and severity of natural hazards including heat waves, severe rainfall and drought events, tropical cyclones and sea level rise currently being experienced are expected to increase in the future.

(b) the nature and purpose of the limitation

I have determined that the decision to allow the project to proceed will potentially limit the human rights in section 26(2) because of the project's contribution to climate change. The impact of GHG emissions on climate change is relevant when considering the rights of children. The project's contribution to increasing GHG emissions may exacerbate climate change impacts. The recommendation to allow the project to proceed, and provide the EIS assessment report, are being undertaken in accordance with the requirements of the EP Act after appropriate consideration of relevant matters.

I have formed the view that the project has the potential to limit the human rights in section 26(2), being the rights of children, due to the project's direct and indirect effects on the environment and community services. Children are particularly vulnerable to environmental hazards, and exposure to increased pollution, land disturbances, or disruptions to essential services may disproportionately affect their well-being and development.

In addition, children may be further affected due to reduced standards of living when compared with other children living in communities across coastal Queensland.

(c) whether the limitation helps to achieve the purpose

The limitation on the human rights of the child is directly related to the recommendation in the EIS assessment report that the project is suitable to proceed.

(d) whether there is any less restrictive way of achieving the purpose

I consider it appropriate that the EIS recommends conditions be placed on the draft EA and any commitments made by the proponent to avoid, mitigate, and monitor the various impacts that could affect families and children.

In my opinion, there is no less restrictive way of achieving the purpose of allowing the project to proceed.

(e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right

I consider a fair balance has been struck between the protection of the rights of children and the importance of the project proceeding. While there may be indirect impacts on children within the local Indigenous community, particularly through changes to the environment, land use, and cultural practices, I consider this potential limitation is justified given the significant economic and social benefits the project is expected to deliver. These include increased employment and training opportunities for local families, improved access to infrastructure and services, and long-term community investment, all of which can contribute positively to the wellbeing and prospects of children.

Section 28 - Cultural rights – Aboriginal peoples and Torres Strait Islander peoples

(a) nature of the right

The cultural rights of Aboriginal and Torres Strait Islander peoples (section 28) ensure the protection of distinct cultural values, practices, knowledge and language.

(b) nature and purpose of the limitation

I have determined that the decision to allow the project to proceed will potentially limit the human rights in section 28 because of the project's direct impacts on the environment and people in the vicinity of the project, and its contribution to climate change.

The project, as proposed, involves activities that generate direct impacts on land and waters within and adjacent to the project area. These impacts may affect the tangible and intangible cultural heritage values within the project site and impact the human rights of traditional owners to use the site and the surrounding land. Climate change impacts may also have direct and indirect impacts on cultural rights. For some people who will be displaced from their country, it may risk the survival of their culture, the very thing this is intended to protect.

As discussed above, the mining and combustion of the project's coal would emit greenhouse gases (mostly CO₂) into the atmosphere. Whilst the amount of CO₂ emitted would be small from a global emissions perspective, it may contribute to climate change and has the potential to limit the cultural rights of Aboriginal peoples and Torres Strait Islander peoples.

The Torres Strait and coastal Queensland are predicted to be affected by sea level rise, which has the potential to limit cultural rights of Aboriginal and Torres Strait Islander peoples in specific ways, including by causing: disruption of traditional cultural practices and therefore the transfer of traditional knowledge; displacement from traditional land; impediments to the continuation,

preservation and development of culture into the future and for future generations; and irreversible harm to traditional lands and waters.

(c) whether the limitation helps to achieve the purpose

The potential limitation on the cultural rights of Aboriginal peoples is directly related to the recommendation in the EIS assessment report that the project is suitable to proceed.

(d) whether there is any less restrictive way of achieving the purpose

In my opinion, there is no less restrictive way of achieving the purpose of allowing the project to proceed. In addition, the proponent has an existing Cultural Heritage Management Plan (CHMP) with the Barada Barna People, which is inclusive of this project and remains valid with the Barada Barna People entity. The CHMP identifies mitigation measures to manage cultural heritage within the project area, in accordance with the *Aboriginal Cultural Heritage Act 2003* (Qld). By implementing this plan and associated engagement with the Barada Barna People during ground disturbance, the project's direct impacts should be minimised.

(e) on balance, whether the importance of achieving the purpose outweighs the importance of preserving the right

I consider that a fair balance has been struck between the potential limitations on human rights and the importance of allowing the project to proceed. The project will provide significant economic and social benefits, including the creation of employment opportunities, enhancement of regional infrastructure, and long-term economic development for the broader community, including Indigenous populations.

A CHMP has been in place since the 28th of October 2011 with the Barada Barna People and covers the entirety of the proposed development footprint. Submissions through the public notification process have identified a high likelihood of potential cultural heritage sites within the watercourse margins. The proponent has identified operational control measures and management of impacts in collaboration with the Barada Barna People. This will ensure impacts are minimised during the life of the project, and that land maintains a condition that supports future use and cultural continuity. In addition, the conditions imposed on the draft EA, would ensure that cultural heritage is appropriately managed.

Record of consultation

Project-specific consultation was undertaken as part of the EIS process. I utilised the EIS process and draft TOR and EIS public notification process undertaken as part of the EIS process to fulfill requirements under EP Act (where appropriate) to consult with potentially affected individuals, whose human rights may be engaged by the decision.

Outcome

The human rights listed above **are limited** but the decision/action **is compatible** with the HR Act because:

- I have considered whether my action imposes a burden or denies a benefit in a way that has the effect of reinforcing, perpetuating, or exacerbating disadvantage, including historical or systemic disadvantage.

- I have determined that my action will potentially limit human rights through direct impacts on the environment and people in the vicinity of the project and because of its contribution to climate change.
- Based on the above considerations however, the limitation on the human rights is considered necessary to achieve the purpose. The economic and social benefits, along with the mitigation of impacts achieved by conditions in the draft EA justify the residual limitations on human rights.

To minimise, avoid, and mitigate potential impacts on the human rights, a range of conditions for inclusion in the draft EA have been recommended in the EIS Assessment Report. The proponent will be required to comply with the EA to avoid, mitigate and monitor impacts to properties including from land disturbance, nuisance matters such as dust and noise, and groundwater drawdown. Additionally, progressive rehabilitation of the mine site is required to ensure landholders' property rights are protected to the extent possible and land is restored to a suitable post-mining land use.

Delegate

Christopher Loveday

Signature

Christopher Loveday

Director, Technical and Assessment Services

Environmental Services and Regulation

Department of the Environment, Tourism, Science and Innovation

Delegate of the Chief Executive

Environmental Protection Act 1994

24 November 2025

Date

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Appendix E—Acronyms and abbreviations

ABS	Australian Bureau of Statistics
ALCAM	Australian Level Crossing Assessment Model
ARI	Average recurrence interval
Assessment report	EIS assessment report
BCR	Benefit-cost ratio
BMA	BHP Mitsubishi Alliance Coal Operations Pty Ltd.
Brigalow TEC	Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant) threatened ecological community
CBA	Cost-benefit analysis
CCA	Consequence category assessment
CHPP	Coal handling and preparation plant
CHMP	Cultural Heritage Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment, and Water
dB	decibel
DETSI	Department of Environment, Tourism, Science and Innovation
DLGWV	Department of Local Government, Water and Volunteers
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development
DRDMW	Department of Regional Development Manufacturing and Water (now DLGWV)
DPI	Department of Primary Industries
DSDIP	Department of State Development Infrastructure and Planning
EA	Environmental authority
EC	electrical conductivity
EIS	Environmental impact statement
EO Act	<i>Environmental Offsets Act 2014</i>
EP Act	<i>Environmental Protection Act 1994</i>
EP Regulation	Environmental Protection Regulation 2019
EPP (Air)	Environmental Protection (Air) Policy 2019
EPP (Noise)	Environmental Protection (Noise) Policy 2019
EPP (Water and Wetland Biodiversity)	Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (formerly known as EPP (Water))
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERA	Environmentally relevant activities
ESCP	Erosion and Sediment Control Plan
EVs	Environmental values for water declared under EPP
FRREMP	Fitzroy regional receiving environment monitoring program
FTEs	Full time equivalent
GDE	Groundwater dependant ecosystem
GHG	Greenhouse gas
Grassland TEC	Natural grassland threatened ecological community

GTIA	Guide to traffic impact assessment
Ha	Hectares
HR Act	<i>Human Rights Act 2019</i>
HVR	High-value regrowth
IESC	Independent Expert Scientific Committee
IMG	In-Mine Gas
IRC	Isaac Regional Council
Km	Kilometres
Kv	Kilovolt
LBIP	Local business and industry procurement plan
LiDAR	Light detection and ranging
LGA	Local government area
LOM	Life of mine
LOR	Limits of reporting
MAW	Mine affected water
MIA	Mine infrastructure area
MIW SA4	Mackay-Isaac-Whitsunday Statistical Area Level 4
ML	Mining lease
MLA	Mining lease application
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
Mtpa	Million tonnes per annum
NPV	Net present value
NRCs	Nearby regional communities
ONRSR	Office of the National Rail Safety Regulator
OAMP	Offset area management plan
PIA	Pavement impact assessment
PM _{2.5}	Particulate matter 2.5 micrometre or less in diameter
PM ₁₀	Particulate matter 10 micrometre or less in diameter
PMLU	Post-mining land use
PRC plan	Progressive rehabilitation and closure plan
PRCP schedule	Progressive rehabilitation and closure plan schedule
PWD	Processed water dam
RWD	Raw water dam
REMP	Receiving environment monitoring program
REs	Regional ecosystems
RIDA	Regional interests development approval
RMP	Rehabilitation management plan
ROM	Run-of-mine
RPI Act	<i>Regional Planning Interests Act 2014</i>
SCA	Strategic cropping area
SCL	Strategic cropping land
SIA	Social impact assessment

SIMP	Social impact management plan
SSRC Act	<i>Strong and Sustainable Resource Communities Act 2017</i>
SMP	Subsidence management plan
SMUs	Soil mapping units
SRM	Saraji Mine
STP	Sewage treatment plant
t	tonnes
TARP	Trigger action response plan
TECs	Threatened Ecological Communities
TMR	Department of Transport and Main Roads
the code	Queensland Resources and Energy Sector Code of Practice for Local Content 2013
the project	Saraji East Mining Lease Project
the proponent	BM Alliance (BMA) Coal Operations Pty Ltd
TOR	Terms of reference
UWIR	Underground water impact report
VM Act	<i>Vegetation Management Act 1999</i>
WHO	World Health Organisation
WMP	Water management plan
WMS	Water management system
WPMP	Weed and pest management plan
WQOs	Water quality objectives

Note: Any reference to a department name in this report should be read as including any former names of that department that were in effect at the relevant time.