

SARAJI EAST MINING LEASE PROJECT

Environmental Impact Statement

Appendix A-2 Submissions Register and Responses



BHP Mitsubishi Alliance

1.1 Summary of Submissions

The original EIS was made available for public comment and review from 24 May to 2 July 2021, including a response to the final ToR in **Appendix A-1 Terms of Reference and Response**. Notices were published in the Mackay Daily Mercury and The Australian on 22 May 2021. During this period, a total of 32 interested parties including independent organisations, State and Commonwealth advisory agencies and government departments made submissions.

Submissions consisted of 409 individual items requiring considerations. The broad themes of the submissions included:

- clarification of specific project details
- requests for more detailed assessment, ground-truthing or analysis in a variety of technical areas
- clarification of the application of relevant legislation
- further understanding of project alternatives, approaches to minimising impact and relationship to existing operations
- additional detail relating to mitigation and management measures, including monitoring
- requests for more specific commitments to mitigation and management measures
- minor corrections.

A detailed breakdown of the topics raised in each submission is provided in Table 1. The majority of responses were received from government agencies or departments. In responding to the submissions additional work was completed relating to a number of technical areas. Key assessments completed to amend the EIS in response to submissions included:

- Clarification of a single mine plan for assessment resulting in a reduced Project footprint
- Revision of assessments of groundwater impacts, subsidence, hydraulics, hydrology and geomorphology and ecology using clarified mine planning and footprint information
- Application of the regional groundwater model to the assessment
- Peer review of subsidence modelling and groundwater modelling
- Collection of additional and contemporary data relating to surface water quality, aquatic ecology and groundwater dependent ecosystems
- Subsidence extent revised based on further developed modelling (spatial and temporal), also providing greater understanding of subsidence impacts
- Water quality objectives proposed
- Incorporation of updated status of homestead occupancy with respect to air quality impacts
- Enhanced cumulative impact assessment specific to groundwater and air quality accounting for regional groundwater model updates, additional water quality monitoring data, updated social baseline and inclusion of air quality dispersion modelling incorporating surrounding dust sources
- Updated mitigation, management, monitoring and commitments in response to revised impact assessments
- Updated Rehabilitation Management Plan and Subsidence Management Plan

Table 1: Submissions Summary

Submitter	Submitter No.	Type	Project Alternatives & Justification	Project Description	Land Use & Tenure	Land Resources & Contamination	Terrestrial Ecology	Aquatic Ecology	Surface water Resources	Groundwater	Groundwater Dependent Ecosystems	Subsidence	Geochemistry & Mineral Waste	Air Quality & Greenhouse Gas	Noise & Vibration	Scenic Amenity & Lighting	Transport	Waste Management	Cultural Heritage	Social	Economics	Stakeholders	Hazards Health & Safety	Matters of National Environmental Significance	Final Landform and Rehabilitation	Cumulative Impacts	EA Conditions	Climate Change
Queensland Department of Environment and Science	1	Comment	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓							✓	✓	✓	
IESC	2	Comment					✓		✓	✓	✓	✓	✓												✓	✓		
Department of Employment Small Business and Training	4	Nil																										
Submitter 1	5	Object																										✓
Office of Industrial Relations	6	Nil																										
Queensland Ambulance Service	7	Nil																										
Mackay Regional Council	8	Nil																										
Department of Communities, Housing and Digital Economy	9	Nil																										
Department of Education	10	Nil																										
Department of State Development, Infrastructure, Local Government and Planning	11/34/35	Comment																		✓						✓		
Department of Transport and Main Roads	12	Comment															✓											
Department of Regional Development, Manufacturing and Water	13	Comment						✓	✓	✓															✓			
Department of Agriculture and Fisheries - Biosecurity Queensland	14	Comment					✓		✓			✓													✓			
Powerlink	15	Comment		✓																								
Department of Agriculture, Water and Environment	16	Comment	✓				✓				✓													✓	✓			
Bowen Basin Coal Pty Ltd	17	Comment		✓					✓																	✓		
Capricorn Conservation Council	18	Object					✓		✓	✓														✓	✓			✓
Environment Council of Central Queensland	19	Object					✓	✓	✓					✓											✓	✓		
Mackay Hospital and Health Service	20	Nil																										
Queensland Police Service	21	Comment																		✓								
Department of Resources	22	Comment		✓	✓	✓	✓					✓							✓									
Energy Queensland	23	Nil																										
Lock the Gate Alliance	24	Comment / Object					✓	✓	✓					✓					✓						✓	✓		
Sunwater	25	Nil																										
Mackay Conservation Group	26	Comment / Object	✓	✓			✓	✓	✓	✓		✓		✓					✓					✓	✓	✓		✓
Department of Seniors, Disability Services and Aboriginal and Torres	27	Comment																		✓								
Isaac Regional Council	28	Comment															✓			✓								
Submitter 2	29	Comment / Object				✓								✓					✓									✓
Queensland Fire and Emergency Services	30	Comment																					✓				✓	
Department of Children Youth Justice and Multicultural Affairs	31	Nil																										
Department of Energy and Public Works	32	Nil																										
Department of Tourism Innovation and Sport - Sport and Recreation	33	Nil																										

SARAJI EAST MINING LEASE PROJECT
SUBMISSIONS ON ENVIRONMENTAL IMPACT STATEMENT

Table 2 Submissions and Register of Responses

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.001	General	N/A	The department and the Australian Department of Agriculture, Water and the Environment (DAWE) sought advice from the IESC on the adequacy of the EIS for: - the characterisation of surface and groundwater resources and related assets, and identification and assessment of the key risks and impacts to water resources and related assets as a result of the project, in particular identification of, and risks and impacts to: - o groundwaters, surface waters and groundwater-surface water interactions; and, - o water-dependent ecosystems. - the conclusions on the cumulative impacts for water resources and related assets within the project area and associated with other resources projects - proposed mitigation, management and monitoring for impacts resulting from the project including to water resources and related assets The IESC advice in Attachment 1 raises multiple issues with the EIS. These include the need: - to better quantify surface cracking and vertical extent and provide a peer review of the geo-mechanical model presented - to improve confidence in the groundwater model with better characterisation of stratigraphy, sensitivity analysis and peer review of the groundwater model required - to better quantify water losses, changes to flows and water quality - to collect additional contemporary water quality data for a more robust baseline dataset - for further geochemical characterisation across the entire area to be mined to determine potential leachates - for more contemporary ecological data in the project area and downstream - for a more detailed evaluation of cumulative impacts on environmental values, processes and resources, with consideration of other mines in the area and historical, current and future impacts. - for additional detail on the long term effects of the final landform and proposed remediation	Undertake the additional work identified by the IESC necessary to address the key potential impacts and provide a response to all matters raised in the IESC advice (Attachment 1). Amend the EIS to include outcomes of the additional work and to address recommended actions and information requirements in accordance with the IESC advice.	To amend the revised draft EIS, BMA has undertaken the additional work identified by the IESC to adequately characterise and address the key potential impacts to water resources and related assets, including presenting the outcomes of the recommended actions and information requirements in accordance with the IESC advice. This supplementary evidence supports justifiable conclusions demonstrating the adequacy of the assessment undertaken for the EIS. To estimate potential impacts to groundwater and relevant receptors, SLR was commissioned to update the existing regulatory-accepted BMA regional groundwater model to include known local hydrogeologic features and mining operations (historic, approved and proposed) in the vicinity of the Project (refer Appendix F-1). A new model calibration was undertaken to match best the latest observation datasets. As described in Section 7, the updated SEMLP groundwater model can be classified as primarily Class 3 using the 2012 Australian Groundwater Modelling Guidelines classification system (effectively "high confidence"), with some aspects meeting the lower Class 2 ("medium confidence") criteria, which is considered an appropriate level for the SEMLP groundwater assessment context. Having been reviewed and accepted previously for other project approval applications (Section 1.1), Appendix F-1 offers improved confidence in the in the groundwater model with better characterisation of stratigraphy (Section 2.8), sensitivity analysis (Section 5) and peer review (Appendix F-3) undertaken in support of conclusions regarding cumulative impacts of groundwater drawdown within the project area and associated with other resources projects (Section 3.4). The groundwater modelling is supported by additional baseline data of groundwater levels and water quality. The assessments and assumptions are peer reviewed by Dr Noel Merrick. Groundwater dependent ecosystems are assessed, including field verification of baseline conditions, in Appendix D-2. Surface water quality is assessed in Appendix E-1, with consideration of a contemporary water quality data set for determining water quality objectives and release limits. More contemporary geochemical data is presented in Chapter 10 based on new data provided by BMA.
Queensland Department of Environment and Science	1.002	Amendment of the Saraji Mine EA	N/A	The activities proposed within the Saraji East EIS are additional to those already conducted at Saraji Mine. The project disturbance and ongoing use of site facilities, pits and waste disposal areas for the Saraji East project were not considered in assessing and conditioning the existing Saraji Mine EA. Therefore an EA amendment application for the existing Saraji Mine EA would be required.	Revise the EIS to detail any draft amendments to the existing Saraji mine EA that would be required for the Saraji East project to be constructed, operated and rehabilitated as proposed. Alternatively or justify in detail why an amendment is not required to accommodate the activities of the Saraji East project by detailing what conditions of the existing Saraji Mine EA implement the additional activities that are to be conducted on the Saraji Mine mining leases. Demonstrate in the EIS that the amended EA for the Saraji Mine could be complied with.	Where activities described in the EIS relate to existing Saraji Mine infrastructure and activities, the infrastructure and activities will continue to the extent authorised in accordance with the relevant conditions of EA Permit: EPML00862313. Based on the proposed Project description and interactions with the Saraji Mine, amendment to EA Permit: EPML00862313 will relate to relevant mining tenure, and receiving and managing mine water and waste from the Project. BMA will continue open cut mining and supporting activities at Saraji Mine to the extent authorised. BMA consider assessment of the matters and "Agency Interests" specified and regulated by EA Permit: EPML00862313 for Saraji Mine indicates only minor consequential amendments to the Saraji Mine EA permit will be required and warranted to enable the relevant Project components to proceed. This will be consistent with successful approach demonstrated for similar cases (for example - in relation to the Red Hill Mining Lease Project EIS outcomes in 2015-16 and resulting consequential amendments made to the neighbouring Goonyella Riverside Mine EA) where consequential amendments are readily implemented following the completion of the EIS and on the basis of the EIS assessment process. As an outcome of the Red Hill Mining Lease EIS, the Goonyella Riverside Mine EA EPML 00853413 was amended to recognise part of the new Project's mining tenure in the ERA and location details table. For "Agency Interest Water", the amendment may be similar to EPML 00853413 Condition C24 and C25, which permits mine affected water to be piped, trucked or transferred by means not in contravention of the EA and deposited into artificial water storage structures for the purpose of supplying water that is in accordance with a written agreement between the parties for use in such a way as to prevent environmental harm or public health incidents. For "Agency Interest Waste", the EIS process resulted in amendment to EPML 00853413 Condition E3 to specifically permit scrap tyres to be accepted from Red Hill Mine for disposal in spoil emplacements. EPML 00853413 Condition E10 permits regulated waste to be received at the site.
Queensland Department of Environment and Science	1.003	Provision of data	Surface water and Groundwater	Raw data relevant to the project has generally not been provided in the EIS appendices to compliment any summary data and analysis presented in the EIS chapters. The department's preferred format for presenting surface and groundwater raw data is set out in Attachments 2a and 2b. Either format can be used depending on the nature of the raw water quality data. More columns or rows can be added to the spreadsheets for additional monitoring events and analytes. Typical water quality indicators are noted in the departmental guideline EIS information guideline – Water (ESR/2020/5312).	Amend the EIS to incorporate raw data relevant to the project. For surface water and groundwater raw data, present data utilising the appropriate attached data template (attachment 2a and/or 2b).	The amended EIS presents summary and analysis of additional groundwater quality data in Section 5.3.9 of Appendix F-3 Groundwater Resources Technical Report. Groundwater quality data has been incorporated in Template 2B and has been submitted as part of the EIS.
Queensland Department of Environment and Science	1.004	Navigation of the EIS	N/A	There are no hyperlinks from contents pages to section headings, tables or figures in the chapters or most of the appendices. This makes navigation and searching of the documents extremely onerous and the information contained within hard to access.	Amend the EIS chapters and appendices to include hyperlinks from contents pages to section headings, tables and figures.	Each chapter and technical report s a hyperlinked table of contents, tables and figures for ease of reference and navigation.
Queensland Department of Environment and Science	1.005	Chapter 1 Introduction Chapter 9 Groundwater	Table 1.1	Table 1.1 and Chapter 9 Groundwater discuss the preparation of an Underground Water Impact Report (UWIR) for the project. The EA application was made prior to the 6 December 2016 which is when the Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016 changes were made. As such, the project falls within the transitional arrangements, because the take of water from the new mining leases had not commenced, and an associated water licence (AWL) under the Water Act 2000 will be required.	Update the EIS Chapters 1 and 9 to detail AWL application requirements and remove references to the project requiring a UWIR.	The amended EIS reflects the transitional arrangements applicable under the <i>Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016</i> , and the requirement for an associated water licence (AWL) under the Water Act 2000. The amended EIS includes a requirement to obtain an associated water licence (AWL) and removes the requirement to prepare an Underground Water Impact Report (UWIR) for the project.
Queensland Department of Environment and Science	1.006	Chapter 1 Introduction Chapter 9 Groundwater		Table 1.1 and Chapter 9 Groundwater discuss the preparation of an Underground Water Impact Report (UWIR) for the project. The EA application was made prior to the 6 December 2016 which is when the Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016 changes were made. As such, the project falls within the transitional arrangements, because the take of water from the new mining leases had not commenced, and an associated water licence (AWL) under the Water Act 2000 will be required.	Update the EIS Chapters 1 and 9 to detail AWL application requirements and remove references to the project requiring a UWIR.	The amended EIS reflects the transitional arrangements applicable under the <i>Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016</i> , and the requirement for an associated water licence (AWL) under the Water Act 2000. The amended EIS includes a requirement to obtain an associated water licence (AWL) and removes the requirement to prepare an Underground Water Impact Report (UWIR) for the project.
Queensland Department of Environment and Science	1.007	Chapter 2 Project Alternatives and Justification	N/A	Empty line item. Nil comment	N/A	Nil
Queensland Department of Environment and Science	1.008	Chapter 2 Project Alternatives and Justification	Section 2.2	While the EIS states that the location of infrastructure, including the accommodation village, minimises vegetation clearance and disturbance of sensitive environmental areas, this is not adequately demonstrated. In addition there is no discussion in this section of avoidance of impacts to waterways and wetlands on the site, in particular subsidence impacts.	Provide evidence of how the proposed mine plan avoids and minimises impacts to vegetation, fauna habitat (including threatened species), fauna movement corridors (including aquatic) and disturbance of sensitive environmental areas. Present a revised mine plan that avoids direct subsidence or dewatering due to cracks and fissures in waterways and wetlands, or demonstrate and justify how the impacts to waterways and wetlands as a result of subsidence from the project are unavoidable.	The amended EIS discusses alternatives considered in project design. Chapter 2 Project alternatives and justification explore the alternatives considered, including: locating infrastructure with objectives to minimise new disturbance, vegetation clearing and downstream impacts; underground mining methods and mine layout, which has been optimised to minimise extent of surface impacts; infrastructure requirements, such as CHPP, power and water management, to minimise ecological and hydrological impacts; mitigation, management and monitoring measures selected based on hierarchy of controls.
Queensland Department of Environment and Science	1.009	Chapter 2 Project Alternatives and Justification	Section 2.2.4	The EIS states that alternative longwall mining methods may result in reduced subsidence but that the reduction would not substantially alter the environmental impacts of the project. As subsidence is a key potential environmental impact, this statement must be backed up with quantitative evidence. Comparisons with other underground mining methods that quantify potential reduction in subsidence must also be presented.	Amend the EIS to demonstrate that feasible alternatives for mining methods have been adequately evaluated and impacts to environmental values avoided. Include a quantified comparison between potential subsidence as a result of the proposed and alternative longwall mining methods or other underground mining methods. This must demonstrate the differences in subsidence and substantiate the EIS claim that environmental impacts of the project would not be substantially altered.	To demonstrate adequate evaluation of feasible alternatives for mining methods, the amended EIS includes further justification to Section 2.2.4 and Section 2.2.4.1 of Chapter 2 describing why longwall mining is preferred to open cut, longwall top coal caving (LTCC), and bord and pillar methods using quantitative comparisons. Also amended the wording that this submission refers to i.e. removed "the reduction would not substantially alter the environmental impacts of the project".

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.010	Chapter 2 Project Alternatives and Justification Chapter 8 Surface Water Resources Chapter 9 Groundwater	Section 2.2.4	No prevention strategies or alternative methodologies of mining are compared or discussed for the relative risk assessment and residual risks in terms of surface waters and groundwater. The residual risks of the subsidence resulting from the proposed longwall mining method have not been presented and little to no assessment of potential impacts to the downstream aquatic ecosystems and other relevant EVs have been quantified. This is a notable omission from the EIS.	Include a risk assessment that addresses surface and groundwater resources and associated environmental values and assets, and quantify impacts on these from the chosen mining methodology. Justify the choice of mining method in light of this assessment.	To demonstrate adequate evaluation of feasible alternatives for mining methods, the amended EIS includes further justification to Section 2.2.4 and Section 2.2.4.1 of Chapter 2 describing why longwall mining is preferred to open cut, longwall top coal caving (LTCC), and bord and pillar methods using quantitative comparisons.
Queensland Department of Environment and Science	1.011	Chapter 2 Project Alternatives and Justification Chapter 8 Surface Water Resources Chapter 9 Groundwater		No prevention strategies or alternative methodologies of mining are compared or discussed for the relative risk assessment and residual risks in terms of surface waters and groundwater. The residual risks of the subsidence resulting from the proposed longwall mining method have not been presented and little to no assessment of potential impacts to the downstream aquatic ecosystems and other relevant EVs have been quantified. This is a notable omission from the EIS.	Include a risk assessment that addresses surface and groundwater resources and associated environmental values and assets, and quantify impacts on these from the chosen mining methodology. Justify the choice of mining method in light of this assessment.	To demonstrate adequate evaluation of feasible alternatives for mining methods, the amended EIS includes further justification to Section 2.2.4 and Section 2.2.4.1 of Chapter 2 describing why longwall mining is preferred to open cut, longwall top coal caving (LTCC), and bord and pillar methods using quantitative comparisons.
Queensland Department of Environment and Science	1.012	Chapter 3 Project Description			Provide clear figures showing: - the proposed disturbance footprint and type at the surface (including areas of likely ponding, cleared areas and infrastructure areas) - subsidence panels and associated subsidence, specific to areas contained under the mining leases MLA70459 and MLA70383.	The amended EIS illustrates proposed surface disturbance over the Project Site, including areas of direct disturbance (including vegetation clearing, infrastructure development, etc.) and indirect impacts (including subsidence, ponding, etc.). Refer to Chapter 3 Project description, Figure 3-2. The amended EIS includes direct and indirect disturbance for relevant mining tenure in Table 3-3 within Section 3.5.1 of Chapter 3 Project Description.
Queensland Department of Environment and Science	1.013	Chapter 3 Project Description		Total areas for surface disturbance must be provided for each type of proposed disturbance activity (e.g. gas drainage, subsidence, infrastructure corridor etc.) that is to be conducted within the tenure boundaries of the Saraji East mining leases (MLA70459 and MLA70383).	For each type of proposed disturbance activity at MLA70459 and MLA70383, provide a table that at minimum includes the following information: - mine activity OR mine domain; and - maximum disturbance area (hectares); and - constraints OR assumptions - detailing any constraints or notes relevant to each disturbance type, if required. Include total proposed area (hectares) for cleared areas for gas drainage infrastructure and subsidence; likely ponding; and all other infrastructure.	In the amended EIS, Chapter 3 (Project description) presents a summary of proposed surface disturbance within each tenement, by activity and type. Refer to Chapter 3 (Project Description), Table 3-3.
Queensland Department of Environment and Science	1.014	Chapter 3 Project Description	Table 3.16, 3.17 Table 15.2, 15.3	It is unclear if effluent is proposed to be irrigated to land due to inconstant statements in the EIS. Table 3.16 and 3.17 which describe the proposed management of wastes during the construction and operation of the project, do not mention irrigation of sewage effluent being used for irrigation. This accords with earlier advice provided by BMA in response to the department's comments on the EIS version October 2019. BMA stated that the project does not propose to irrigate treated effluent to land and that therefore M.E.D.L.I. modelling had not been undertaken. However, tables 15.2 and tables 15.3 in Chapter 15 still include reference to irrigation of treated sewage effluent.	Confirm that effluent would not be irrigated to land. If the project does not propose to irrigate treated effluent (i.e. reuse on site for irrigation of any vegetation), remove any references to treated effluent being irrigated throughout the EIS. If irrigation is proposed, then undertake appropriate water balance modelling (such as "M.E.D.L.I.") to ascertain: - suitable wet weather storage volumes - sufficient irrigation areas - suitable effluent irrigation rates - suitable vegetation to be irrigated to ensure sustainable effluent irrigation for the predicted volume of sewage that would be generated and treated, and then disposed of via land irrigation. This would also include development and implementation of irrigation management systems/plans. Provide information in accordance with the information requirements set out in the department's Technical guideline for disposal of effluent via irrigation (Tennakoon S. and Ramsay I, 2020).	The Project does not propose to irrigate treated effluent (i.e. reuse on site for irrigation purposes). As irrigation is not proposed, no modelling for effluent disposal using land irrigation is required for assessment. During construction, sewage effluent from the accommodation village will be removed from site by a licensed contractor. During operation, sewage effluent from the Mine Industrial Area and Coal Handling and Processing Plant will be treated in a package Sewage Treatment Plant (primary filtration and disinfection) and treated water managed within the Mine Water Management System as described in Section 3.7.15 of Chapter 3 (Project Description) and Section 8.5 of Chapter 8 (Surface Water). Relevant references in the EIS have been updated accordingly.
Queensland Department of Environment and Science	1.015	Chapter 3 Project Description	Section 3.5.2	The EIS states that the environmental impacts relevant to off-lease infrastructure have been assessed. However the impacts from off-lease infrastructure such as the powerline have not been quantified including impacts on MSES.	Provide a clear description of the dimensions of the linear infrastructure disturbance footprint including off lease areas. Quantify impacts from the linear infrastructure on MSES and MNES respectively for each prescribed matter.	Off lease linear infrastructure is described in Section 3.5.2 of Chapter 3 (Project description). This EIS is applying for approval of the on lease linear infrastructure only; no further assessment of impacts on MSES and MNES for off lease infrastructure is included in the EIS. Further detail on the MSES values impacted by linear infrastructure are presented in Section 6.7 of Chapter 6 (Terrestrial ecology) and Chapter 21 (MNES).
Queensland Department of Environment and Science	1.016	Chapter 3 Project Description Chapter 15 Waste	Section 3.7.14	There is insufficient detail provided on the sewage treatment plant and effluent management for the project to enable assessment and conditioning for this environmentally relevant activity.	Provide additional information on sewage treatment, storage and disposal in accordance with the department's Waste EIS information guideline (ESR/2020/5311). Address all relevant information requirements in the guideline relating to sewage generation, treatment, storage, handling and transportation, disposal and discharge.	During construction, sewage effluent from the accommodation village will be removed from site by a licensed contractor as described in Section 3.6.6. During operation, sewage effluent from ablutions located at the Mine Industrial Area, Coal Handling and Processing Plant and mine portal washdown facilities will be treated in a package Sewage Treatment Plant (primary filtration and disinfection) with treated water managed within the Mine Water Management System as described in Section 3.7.15 of Chapter 3 (Project Description) and Section 8.5 of Chapter 8 (Surface Water). Waste sludge will be pumped to storage tanks before being pumped out and transported off-site by a licensed contractor to a licensed disposal facility. Relevant references in the EIS have been updated accordingly. Further detail on sewage and effluent management, including how the Project demonstrates compliance with relevant information requirements in the guideline relating to sewage generation, treatment, storage, handling and transportation, disposal and discharge are presented in Section 8.5 of Chapter 8 (Surface Water).
Queensland Department of Environment and Science	1.017	Chapter 3 Project Description Chapter 20 Hazards Health and Safety Chapter 15 Waste	Section 3.7.14 Table 20.8		Provide full details on: - all chemicals used in the treatment processes, including access to material safety data sheets - the storage of all chemicals on site associated with operating the sewage treatment works and treated wastewater disposal/reuse (types and volumes) and method of storage and containment - waste reuse/disposal methods for all chemicals, fuels, etc. associated with the proposed sewage treatment works.	Construction sewage effluent will be removed off site for treatment disposal as described Section 3.6.6. Operational sewage effluent will be treated on site and treated water stored and managed within the Mine Water Management System as described in Section 3.7.15 and 3.7.21 of Chapter 3 (Project Description). Further detail on what chemicals are stored where, and how the Project demonstrates compliance with relevant information requirements in the guideline relating to sewage generation, treatment, storage, handling and transportation, disposal and discharge is presented in Chapter 8 Surface Water and Chapter 20 Hazards, health and safety.
Queensland Department of Environment and Science	1.018	Chapter 3 Project Description	Section 3.8.3	The EIS states that the current Saraji Mine has ongoing capacity to deposited mineral wastes from the project in-pit, however no evidence was provided to demonstrate this.	Demonstrate and quantify the available capacity at Saraji Mine to accommodate the total life of mine tailings/rejects from the Saraji East project.	Through review of design capacity of the Saraji Mine waste dumps, BMA is able to confirm there is available capacity at Saraji Mine to accommodate the total life of mine tailings/rejects from the Project as described in Section 3.7.11 and 3.9.3 of Chapter 3 (Project Description). The existing Saraji Mine has excess storage capacity to accommodate the additional waste volumes due to the Project as demonstrated by the conceptual placement for management of mine waste at end of Project life as shown in Figure 10-4. Predicted groundwater drawdown due to Project within the Tertiary age sediments, which can underly the mine water storages and waste storage facilities, does not extend up dip into the Saraji Mine, thus no impact on Saraji Mine water and waste storage facilities is predicted. To demonstrate, the maximum incremental drawdown is presented on Figure 9-14 with the locations of the proposed Project mine water storages and waste storage facilities.
Queensland Department of Environment and Science	1.019	Chapter 5 Land Resources	Section 5.4.6 Table 5.9 Section 5.6.3	A site investigation is proposed where the activity intersects with potential contamination sources, however this should be included in the EIS material and not deferred to some unspecified time in the future.	Present potential impacts and risks from the project in relation to existing contamination at identified locations and on-ground results from the investigations. Describe tailored management and remediation steps for each potentially impacted contaminated site to allow an assessment of the likely effectiveness of management actions and/or residual environmental impacts.	In the amended EIS, Chapter 5 Land resources, Section 5.6.3, outlines BMA's commitment to undertake a preliminary site investigation where construction activities are to be undertaken in areas where potential for contamination is identified, or land is listed on the State Environmental Management Register or Contaminated Land Register EMR or CLR. The amended EIS includes a commitment for BMA will undertake a contaminated land assessment of the Project Site during the detailed design phase of the Project as per commitment in Section 5.3.4 and Appendix O-1 Summary of Commitments (Commitment 12).
Queensland Department of Environment and Science	1.020	Chapter 5 Land Resources	Section 5.6.1	A pre-subsidence risk assessment prior to project commencement was not provided in the EIS. This is required to identify appropriate mitigation and management measures. Without this level of detail it is not possible to assess the risk from subsidence to environmental values and other assets, or the capacity to mitigate and manage those risks and associated impacts.	Undertake the pre-subsidence risk assessment for the impacted project footprint and include the results of the risk assessment in the EIS. Identify, discuss and justify the use of, suitable measures that would mitigate risks to environmental and any other values based on the location and type of impacted value at the project site. Demonstrate that those measures have been successfully used in comparable sites and circumstances to mitigate risks and impacts to environmental values and other assets from subsidence.	BMA has undertaken a pre-subsidence risk assessment for the impacted project footprint, which is included in Appendix K-2, Section 5.0 and Table 7, and also presents typical adaptive control measures and residual risk after measures. The management measures and effectiveness have been demonstrated on comparable BMA sites such as Broadmeadow mine complex. Section 6.2 of Appendix K-2 Subsidence Management Plan identifies pre- and post-subsidence monitoring methodologies, parameters and frequencies to continually monitor and mitigate impacts to environmental values and other assets from subsidence.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.021	Chapter 5 Land Resources Appendix K-1 Rehabilitation Management Plan	Section 5.6.4 Figure 5-13 Figure 9	There are inconsistencies in the proposed final land use throughout the EIS. Figure 9 of Appendix K (Rehabilitation Management Plan) indicates that the final land use for areas of subsidence would be either woodland or cattle grazing. However, the post mining land use for the same area, as indicated by Figure 5-13 is solely grazing, as is also proposed in section 5.6.4, sub-section 'land suitability'. It is noted that in the same section, native vegetation is proposed to be retained in a way that is compatible with the pre-existing land use, however, it is not clear what areas of native vegetation this approach applies to over the project area.	Provide a clear figure in Chapter 5 showing the proposed post mining land use for the project area. Include a figure showing the post mining land use for all areas of the relevant mining leases of the project (like that of Figure 9 of Appendix K). Amend the EIS to ensure the proposed final land use is consistent across all sections.	The amended EIS has been revised to provide consistency in description of proposed final land uses across all sections, including Chapter 3, Chapter 5, Chapter 10, Appendix K-1 and Appendix K-2. As described in Chapter 5 Land resources (Section 5.6.4) and Appendix K-1 Rehabilitation Plan (Section 7), all areas disturbed by mining activities (inclusive of the infrastructure corridor) will be rehabilitated to a stable landform and post mining land use. The Saraji Mine RMP establishes site-wide strategies to achieve rehabilitation by prioritising stability of the final landform, and the return of land use to cattle grazing, woodland habitat, watercourse and water storage where appropriate. Native vegetation outside of the surface infrastructure footprint will be retained in a way that is compatible with the pre-existing land use for biodiversity values observed during the baseline ecological studies. Where vegetation impacts have occurred as a result of recurrent ponding in subsidence areas (and this is not avoided through the installation of drainage around the ponding area), the area will be revegetated with species that are tolerant of periodic inundation. Refer to Appendix K-2 Subsidence Management Plan for further detail.
Queensland Department of Environment and Science	1.022	Chapter 5 Land Resources	Table 5.15	Table 5.15 includes details of rehabilitation phasing. It is unclear from this table what disturbance domains apply to which phases. The Rehabilitation Management Plan (Appendix K) also does not provide clear delineation of these phases.	Indicate in both Chapter 5 (Land Resources) and Appendix K (Rehabilitation Management Plan) what areas are applicable to which phases of the rehabilitation program detailed in Table 5.15.	The amended EIS includes revisions to Chapter 5 and Appendix K-1 to make clear the details of rehabilitation phasing across the disturbance domains. The rehabilitation phases described in Chapter 5 Land Resources and Appendix K-1 Rehabilitation Management Plan apply to all disturbance areas. Phase 1 covers progressive rehabilitation of subsidence areas within two years of becoming available. More information will be available in the PRCP, to be developed following approval. As described in Chapter 5 Land resources (Section 5.6.4) and Appendix K-1 Rehabilitation Plan (Section 7), all areas disturbed by mining activities (inclusive of the infrastructure corridor) will be rehabilitated to a stable landform and post mining land use. The Saraji Mine RMP establishes site-wide strategies to achieve rehabilitation by prioritising stability of the final landform, and the return of land use to cattle grazing, woodland habitat, watercourse and water storage where appropriate.
Queensland Department of Environment and Science	1.023	Appendix K-1 Rehabilitation Management Plan		The Rehabilitation Management Plan lacks sufficient detail to ensure the implementation of this plan for the rehabilitation of activities, mine facilities and infrastructure on site. For example, there is a lack of clear direction on the treatment of identified contamination risk in the statement on pg 37 of the plan: "a contamination risk assessment will be conducted where required, treatment will occur where needed." Further information and details on proposed management and rehabilitation activities are required.	Expand on the existing detail of the Rehabilitation Management Plan to demonstrate the achievement of the SMART principles proposed for the plan as per Commitment 84. At a minimum, additional detail that demonstrates the achievement of SMART principles is required regarding the following: - rehabilitation of surface infrastructure (including water storage infrastructure) in section 9.4.3 - each phase of rehabilitation proposed in section 9.5 - dispersive or sodic subsoil treatment in section 10.3.3, and - the specifications/options for permanent drainage infrastructure in section 10.3.3.	The amended EIS has been updated such that Appendix K-1 Rehabilitation Management Plan includes additional details that on the implementation of the plan in Section 9 Rehabilitation Phasing and Schedule and Section 10 Rehabilitation Methods. Further detail, including schedules will be available in the Progressive Rehabilitation and Closure Plan (PRCP), to be developed following approval.
Queensland Department of Environment and Science	1.024	Appendix K-1 Rehabilitation Management Plan		The Rehabilitation Management Plan lacks a clear trigger action response plan (TARP) to address any identified deviations from the risk management and rehabilitation strategies detailed in the plan and identified during the proposed rehabilitation monitoring. The Rehabilitation Management Plan must be able to address risks in a clear and timely manner, particularly with respect to time-sensitive issues such as subsidence crack development, subsidence- related ponding, bank and gully erosion and disruption or augmentation of the banks of creek lines and/or as discussed in Table 5 of the Rehabilitation Management Plan as being of high or moderate risk.	Include a TARP in the Rehabilitation Management Plan for each risk identified in the plan. The TARP must include appropriate and timely corrective actions and responses which address variations to expected conditions or exceedances of completion criteria.	A rehabilitation risk assessment and preliminary Trigger Action Response Plan (TARP), which demonstrate how potential rehabilitation risks will be avoided, mitigated and/or monitored, have been completed. A risk assessment is included in Table 16 and preliminary TARP included as Table 17 of Appendix K-1 Rehabilitation Management Plan. Risk assessment will be revised and updated with a final TARP developed as part of the PRCP for the Project prior to commencement of construction.
Queensland Department of Environment and Science	1.025	Appendix K-1 Rehabilitation Management Plan	Section 5.6.4 Section 9.7	Section 5.6.4 of Chapter 5 and section 9.7 of the Rehabilitation Management Plan provide the objectives, completion criteria, and indicators for the rehabilitation of mine disturbance which have been drawn from BHP's Queensland coal rehabilitation completion criteria. As noted in these sections, the criteria, objectives and goals outlined are preliminary and expected to undergo further development and refinement in line with any further regulatory guidance that may be provided by the department and associated with the finalisation of the project's EA. As part of the establishment of completion criteria for the Saraji East proposed mining activities, refinement of these criteria, objectives and goals are expected to be proposed. This is with respect to the completion criteria not being sufficiently constrained to support the rehabilitation or to be consistent with the intensity of disturbance impacts of underground mining activities and associated key disturbance domains. As noted in section 9.4.3 of the Rehabilitation Management Plan, gas drainage infrastructure is proposed as the main cause of vegetation and soil disturbance across the mine footprint. The following aspects from BHP's Queensland Coal Rehabilitation Completion Criteria are examples of criteria that require refinement: Post mining land use: Cattle Grazing The completion criteria of '70% of slopes ≤20%' is not consistent with the proposed impacts and subsequent required landform development for the majority of proposed disturbance across the Saraji East mining leases. Completion criteria of 'land suitability class≤3 or not different from pre-mining class if ≥4' is not reflective of the fact that subsidence impacts on pre-existing grazing land, that is proposed to be returned to a grazing land use, has about a 50/50 ratio of class 2 and class 3 over subsidence areas. Return to the pre-existing class is expected in a greater proportion for land suitability ≤3 than the current proposal. Post mining land use: Woodland habitat The objective of 'some native bushland characteristics' is not sufficiently consistent with the final land characteristics proposed in section 10.5.2 of Appendix K as 'retained in a way that is compatible with the pre-existing land use for biodiversity values observed during the baseline ecological studies'. It is unclear from the information detailed in the Rehabilitation Management Plan and in Chapter 5 how the achievement of the defined species richness and canopy cover of this completion criteria is relevant to the proposed final land characteristics detailed in the EIS.	Compare the completion criteria proposed for the project against the intensity of activities proposed. Provide completion criteria that are consistent with the impacts associated with the mine disturbance, the risks of rehabilitated landform failure, and the final land uses projected to be achieved over the project site.	The amended EIS proposes completion criteria for the Project in Chapter 5 Land Resources Table 5-16 and Appendix K-1 Rehabilitation Management Plan Table 9 consistent with the impacts associated with the mine disturbance, the risks of rehabilitated landform failure, and the final land uses projected to be achieved over the project site. Specifically, completion criteria have been revised for the cattle grazing Post Mining Land Use (PMLU) in terms of slope gradient and land suitability, and the woodland habitat PMLU.
Queensland Department of Environment and Science	1.026	Appendix K-1 Rehabilitation Management Plan		The rehabilitation strategy for the removal of site infrastructure indicates that the construction village and the Coal Handling and Preparation Plant (CHPP) may remain onsite for future mining purposes. To be clear, the department expects that this infrastructure would be decommissioned and rehabilitated prior to surrender of the relevant mining lease. The decommissioning and rehabilitation activities of the proposed activities would be assessed based on the existing approvals (where relevant to the Saraji mining leases) and the proposed disturbance under this EIS and EA application on the Saraji East mining leases. Mining activities and disturbance not discussed in the EIS and detailed in the EA application cannot be considered and as such any statements that do not provide for clear rehabilitation outcomes must be removed from the EIS.	Provide clear details of the proposed demolition and rehabilitation of all areas based on the Saraji East EA application.	The EIS has been amended in Section 9.5.2 of Appendix K-1 Rehabilitation Management Plan to describe decommissioning. There is the option to retain infrastructure if the landowner believes it is of value and a transfer agreement with the landowner is in place. Where there is no further use anticipated or agreed, the amended EIS provides for decommissioning and removal of site infrastructure.
Queensland Department of Environment and Science	1.027	Chapter 3 Project Description Appendix K-1 Rehabilitation Management Plan	Section 9.4.4 Figure 2 Figure 3.3 Section 3.4.1	Section 9.4.4 of the Rehabilitation Management Plan proposes 'future subsidence areas'. However the current EIS will only be assessed for the subsidence related to the mining of panels as shown in the Rehabilitation Management Plan. The EIS (which comprises the information request response to the Saraji East EA application) must be confined to the matters sought under the EA application. References in the EIS to mining activities and disturbance that are planned or being investigated but do not form part of the project application must be removed from the EIS.	Remove all references to subsidence activities other than those as a result of the project footprint shown in Figure 2 of Appendix K1 (Rehabilitation Management Plan). Any other references to future mining activities or disturbance, not explicitly proposed, analysed and mitigated for this project, in this EIS, are to be removed.	Chapter 3 (Project Description) describes the infrastructure, activities and disturbance proposed as part of the Project, which are assessed and mitigated in the EIS. Reference to future mining activities, disturbance or subsidence not resulting from the Project have been removed.
Queensland Department of Environment and Science	1.028	Appendix K-1 Rehabilitation Management Plan	Section 9.5.1	The Rehabilitation Management Plan proposes that rehabilitation would be progressively undertaken on areas that cease to be used for mining or mine related activities within two years of becoming available. It is expected that subsidence of an area or a section of a panel would be fully achieved within 6 months, as subsidence occurs progressively as the panel is mined. The length of this timeframe has not been justified against the expected period for the complete subsidence of an area and the completion of any subsequent gas drainage activities; and the timeframes required to address any cracking or erosion or ponding issues.	Provide: - Criteria for what would constitute an area of subsidence available for rehabilitation (including timeframes). - A timeframe for the availability of land for rehabilitation that is consistent with the subsidence expected over longwall mining activities. - Justification of the requirement for the proposed two year timeframe for the completion of rehabilitation over subsidence areas.	The two-year timeframe allows for the completion of panel subsidence (generally one panel per year), completion of the annual subsidence monitoring process and planning and design of any consequent mitigating controls that may be required as part of the rehabilitation strategy. The timeframe includes time allowed for natural recovery. A plan and schedule for progressive rehabilitation will be established as part of the future Progressive Rehabilitation and Closure Plan (PRCP).
Queensland Department of Environment and Science	1.029	Appendix K-1 Rehabilitation Management Plan	Section 9.5 Section 10.5.3	Section 9.5 discusses comparisons with the surrounding areas with respect to land capability and the achievement of stable landforms including slopes, initial erosion controls and drainage lines. It is expected that analogue or reference sites would be established for comparative purposes. Further section 10.5.3 of Appendix K regarding seeding rates notes groundcover species would be over sown relative to rates observed in the analogue sites.	Establish reference or analogue sites that are representative of the target land uses for the project area and that are capable of providing the required comparisons proposed throughout the Rehabilitation Management Plan.	Appendix K-1 Rehabilitation Management Plan, Section 11.7 and 11.8, demonstrates BMA's commitment to establish analogue or reference sites in the surrounding landforms / watercourses representing undisturbed areas for comparative purposes and to demonstrate the achievement of initial stable landforms and non-polluting environment.

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Queensland Department of Environment and Science	1.030	Appendix K-1 Rehabilitation Management Plan	Section 10.1	A series of risks associated with landform failure are noted in section 9.6, but the section lacks a risk assessment and demonstrable risk mitigation like that of section 6.	Provide a risk assessment that includes clear mitigation and management steps for the identified risks of landform failure presented in section 9.6 of the Rehabilitation Management Plan.	Appendix K-1 Rehabilitation Management Plan, Section 12, presents a comprehensive risk assessment and preliminary trigger action plan (TARP) identifying risks and clear mitigation and management steps for identified risks, including risks of landform failure. A risk assessment is included in Table 16 and preliminary TARP included as Table 17 of Appendix K-1 Rehabilitation Management Plan. Risk assessment will be revised and updated with a final TARP developed as part of the Progressive Rehabilitation and Closure Plan (PRCP) for the Project prior to commencement of construction.
Queensland Department of Environment and Science	1.031	Appendix K-1 Rehabilitation Management Plan	Section 10.1	Section 10.1 of the Rehabilitation Management Plan describes progressive rehabilitation that does not appear to link with the rehabilitation phases proposed in section 9. A more consistent narrative of the proposed rehabilitation actions and schedule is required throughout the management plan. The Rehabilitation Management Plan lacks sufficient structure to ensure the plan can be implemented for the site.	Amend the Rehabilitation Management Plan to provide a clear and actionable sequence for: - the identification of the risks of the project - necessary rehabilitation requirements and scheduling - rehabilitation monitoring, and, - a TARP to ensure the plan can be easily implemented for the project.	Appendix K-1 Rehabilitation Management Plan has been amended to include a rehabilitation risk assessment (Table 16) and preliminary Trigger Action Response Plan (TARP) (Table 17), including triggers based on rehabilitation monitoring. Table 5-11 in Chapter 5 Land Resources and Section 12 of Appendix K-1 present proposed rehabilitation monitoring requirements. More detail on the schedule for progressive rehabilitation will be established as part of the future Progressive Rehabilitation and Closure Plan (PRCP).
Queensland Department of Environment and Science	1.032	Appendix K-1 Rehabilitation Management Plan	Table 5	Avoidance, minimisation and mitigation measures proposed to address vegetation mortality due to ponding are insufficient. Table 5 does not include control measures to avoid vegetation mortality due to ponding. The minimisation control measure of 'conduct early post subsidence inspection and identification of high risk areas' is not a minimisation measure as no action other than identification is proposed. Also the mitigation measure of 'rehabilitate with species that are similar to the pre-existing regional ecosystem' is a remediation measure not a mitigation measure. This measure is also proposed for subsidence impacts to threatened ecological communities (TECs) such as Brigalow and Natural Grasslands. The department considers this to be a remediation measure, that is an action undertaken once an impact has occurred, rather than minimisation and mitigation measures to reduce the potential for an impact to occur as a result of subsidence and associated ponding.	Amend the proposed control measures detailed in Table 5 of Appendix K to propose control measures that would actually avoid, mitigate and minimise subsidence impacts for each environmental value and domain identified in the table. In particular, proposed mitigation measures to address subsidence impacts on the environmental values in Table 5 of 'Ecology - vegetation mortality in subsidised areas due to cracking and ponding' & 'Ecology - subsidence impacts to threatened ecology communities (TECs) such as such as Brigalow (Acacia harpophylla dominant and co-dominant) and Natural Grasslands of the Queensland Central Highlands and the Northern Fitzroy Basin resulting in vegetation mortality'.	Appendix K-1 Rehabilitation Management Plan, Section 12, presents a comprehensive risk assessment and preliminary trigger action plan (TARP) identifying risks and clear mitigation and management steps for identified risks, including risks of landform failure. A risk assessment is included in Table 16 and preliminary TARP included as Table 17 of Appendix K-1 Rehabilitation Management Plan. Risk assessment will be revised and updated with a final TARP developed as part of the Progressive Rehabilitation and Closure Plan (PRCP) for the Project prior to commencement of construction.
Queensland Department of Environment and Science	1.033	Appendix K-1 Rehabilitation Management Plan	Section 10.3.3	Section 10.3.3 of the Rehabilitation Management Plan proposes that, where ponding is large (greater than three metres deep) and persistent (longer than 12 months), permanent drainage infrastructure would be built as required to improve drainage. The modelled subsidence depths in Figure 3 of Appendix K indicates few areas would subside to greater than 3 m, therefore the majority of ponding would not meet these criteria and there is no justification for these criteria (>3m depth subsidence and >12 months duration).	Justify the criteria (>3 m and >12 months) as the trigger for the installation of permanent drainage infrastructure.	Appendix K-1 Rehabilitation Management Plan has been amended; Section 12, presents a comprehensive risk assessment and preliminary trigger action plan (TARP) identifying risks and clear mitigation and management steps for identified risks. The revised Rehabilitation Management Plan does not have fixed triggers for the installation of permanent drainage infrastructure. Ponding areas can have positive environmental outcomes. Based on the case-by-case assessments, installation of permanent drainage channels to divert water around/through the ponding areas only if assessed as necessary and if determined to incur less impacts than the free-draining scenario - refer Table 16. Risk assessment will be revised and updated with a final TARP developed as part of the Progressive Rehabilitation and Closure Plan (PRCP) for the Project prior to commencement of construction.
Queensland Department of Environment and Science	1.034	Appendix K-1 Rehabilitation Management Plan		No clear discussion has been provided in the EIS as to whether any temporary drainage infrastructure would be installed to address ponding impacts at sites where the ponding is not considered to be both large and persistent.	Present details of any potential temporary drainage infrastructure that would be installed and the criteria for its installation.	Where vegetation dieback or changes to vegetation community structure occurs as a result of subsidence ponding, installation of drainage of ponds may be considered on a case-by-case assessments where its determined to incur less impacts than the free-draining scenario. In addition, the ponding areas will be revegetated with species tolerant of inundation (if this does not occur naturally). Any drainage channels that are installed would be permanent and incorporated into the post mining land use (see Appendix K-1 Rehabilitation Management Plan, Section 12).
Queensland Department of Environment and Science	1.035	Appendix K-1 Rehabilitation Management Plan		Subsidence in the catchments of the identified mine footprint creeks is expected to alter and potentially result in the ponding and creation of new semi-permanent ponding and associated aquatic ecosystems. Little information is presented in relation to the planned mitigation, management and monitoring of these new potential ponds. It is unclear how prevalent or widespread such ponding is likely to be. No mapping identifying the potential ponding locations and depths has been provided in the EIS. Mapping would assist the department in understanding the sufficiency of proposed ponding management strategies and the likelihood that persistent and major ponding would be present. The department considers that the management hierarchy has not been adequately addressed for subsidence impacts, due to insufficient information regarding avoidance, minimisation and management strategies.	Provide a comprehensive assessment of the planned mitigation, management and monitoring of all potential ponded areas as a result of subsidence activities due to the project. Present details of modelling and sufficient mapping to clearly quantify the extent of all potential ponding. Provide estimates of how long ponding would persist. Provide a figure of the extent of all predicted ponding (including ponding not considered to be large or persistent) and the period of time that such ponding is to occur and its associated depths for the project.	The amended EIS includes a conceptual ponding assessment in Appendix E-4, and maps of potential ponding after 10 and 20 years of mining are included in Appendix K-2 Subsidence Management Plan as Figure 6 and Figure 7, respectively.
Queensland Department of Environment and Science	1.036	Appendix K-1 Rehabilitation Management Plan	Section 10.3.3	Section 10.3.3 notes that drainage designs for any ponded areas would consider: - actual subsidence depths - the rate of sediment infilling - the rate of pond formation It is unclear from this statement how these aspects would be considered.	Provide details of how: - actual subsidence depths - the rate of sediment infilling - the rate of pond formation would influence ponding drainage design and establishment.	Appendix K-2 Subsidence Management Plan, Section 10.3.3, has been updated to include the following key drainage channel design principles: - Drainage channels will be designed with gradients that protect against erosion and sedimentation - Where practical, drainage channels will use natural, non-dispersive materials and be reflective of natural drainage channels in the surrounding landscape - Regrading or use of rock armouring to limit head cut erosion may be required - Batter slopes, where required, will be designed to be stable and compatible with the slopes in the surrounding landscape - Where dispersive or sodic soils are identified, measures will be implemented to minimise erosion (e.g. amelioration with gypsum and/or capping with non-dispersive soils)
Queensland Department of Environment and Science	1.037	Chapter 5 Land Resources Appendix K2 Subsidence Management Plan	Section 3	The Subsidence Management Plan referred to in Chapter 5 and presented in Appendix K2 limits its details on mitigation measures to a table with a series of dot points listing potential mitigation actions, comprising a list of potential measures to be used for different (broad) classes of impacts. The level of detail is insufficient. There is no detailed discussion of the applicability of these to the site or examples of how these have been successfully used at comparable subsidised sites in Chapter 5. It is not possible to assess the likely success of any of the multitude of potential mitigation actions for subsidence listed in the management plan.	Provide a management plan that has been developed for the specific subsidised locations and environmental values and other assets for the Saraji East mine site. The management plan must step through management measures for each location and value, basis for selecting those management measures, success criteria for each location and how these outcomes would be assessed and measured through monitoring.	Appendix K-2 Subsidence Management Plan has been updated to address key subsidence impacts and mitigation measures such as ponding and surface cracking within each subsidised domain. Risk assessment (Table 6) and trigger action response plan (TARP) (Table 7) is provided in Section 5.0 and recommended monitoring and mitigation measures (e.g. where and when these measures should or should not be used) in Section 6.
Queensland Department of Environment and Science	1.038	Appendix K-2 Subsidence Management Plan		The Subsidence Management Plan does not provide a TARP for corrective actions to address any deviations from baseline conditions and completion criteria.	Include a TARP in the management plan, and for each risk identified in the plan include appropriate and timely corrective actions and responses to address any variations to expected condition or exceedances of any completion criteria.	Appendix K-1 Rehabilitation Management Plan has been amended; Section 12, presents a comprehensive risk assessment (Table 6) and preliminary trigger action plan (TARP) (Table 7) identifying risks and clear mitigation and management steps for identified risks. A TARP has been included in Appendix K-2 Subsidence Management Plan (SMP); for each risk identified in the SMP, appropriate and timely corrective actions and responses have been included.
Queensland Department of Environment and Science	1.039	Appendix K-2 Subsidence Management Plan	Table 2	Table 2 of the Subsidence Management Plan notes which parameters of various subsidence impacts would be monitored. It is unclear: - which parameters would be priority parameters or whether all are to be monitored - the methodology for the monitoring of these parameters - how the baseline information has been utilised to identify appropriate parameters for monitoring.	Provide significant further details of the proposed parameters and monitoring methods. Justify the choice of parameters. Include details of how baseline monitoring has been used to determine the appropriate parameters, locations and extent for the monitoring program.	The monitoring summary table (now Table 9 of updated Appendix K-2 Subsidence Management Plan) has been updated to include monitoring parameters, and methodologies. Additional wording has been added to the Section 6.2 to address use of baseline information in identifying appropriate parameters for monitoring.
Queensland Department of Environment and Science	1.040	Appendix K-2 Subsidence Management Plan	Table 2	Table 2 of the Subsidence Management Plan notes that various subsidence impacts would be monitored at a frequency specified as 'regular visual inspections', conducted throughout the wet season and as required in the dry season. To ensure timely and relevant conduct of corrective actions from subsidence activities, clear timeframes for the inspections are expected.	Provide additional details of timeframes in the Subsidence Management Plan that ensures achievement of the SMART principles as committed to in commitment 28 of Appendix O.	Updated monitoring summary table (now Table 9 of updated Appendix K-2 Subsidence Management Plan) has been updated to include recommended frequency of monitoring for each subsidence impact identified for the Project, creating mitigation measures addressing SMART principles.
Queensland Department of Environment and Science	1.041	Appendix K-2 Subsidence Management Plan	Section 2.1	Section 2.1 of the Subsidence Management Plan proposes a pre-subsidence risk assessment. This risk assessment should have already been conducted for the EIS, in order to understand the degree of impact associated with subsidence activities and, therefore, the sufficiency of avoidance, minimisation and management strategies.	Conduct the risk assessment proposed in section 2.1 of the Subsidence Management Plan and include it in an amended EIS. From such risk assessment, ensure that each impact has been clearly identified, and that avoidance, mitigation and management measures have been proposed to address each risk.	Updated Appendix K-2 Subsidence Management Plan now includes a subsidence risk assessment (see Table 6) and preliminary Trigger Action Response Plan (TARP, Table 7), which outlines avoidance and mitigation/management strategies for each of the identified risks.
Queensland Department of Environment and Science	1.042	Appendix K-2 Subsidence Management Plan	Section 2.1	Section 2.1 of the Subsidence Management Plan notes that monitoring of subsidence would be conducted annually. The monitoring program is proposed to be reviewed every two years or after any major change to operations. The plan does not provide a discussion of what aspects of the program are to be reviewed and for what purpose is the review to be conducted.	Provide details of the scope and intent of these reviews and expected outcomes from such reviews of the monitoring program.	Updated Appendix K-2 Subsidence Management Plan now includes details/discussion of what aspects of the monitoring program are to be reviewed and for what purpose is the review to be conducted, as detailed in Section 6.4 Monitoring with the monitoring summary table (now Table 9 of updated Appendix K-2 Subsidence Management Plan).
Queensland Department of Environment and Science	1.043	Appendix K-2 Subsidence Management Plan	Figure 4 Figure 5	Pre- and post-subsidence topography maps have been provided in Figure 4 and Figure 5 of the Subsidence Management Plan. However, the scale of the maps makes it difficult to trace the contours and could be improved by providing additional contour numbers for each 5 metre contour line.	Provide additional contour numbers to Figures 4 and Figure 5 of the Subsidence Management Plan in 5 metre intervals	In amending the EIS, the legibility of the maps shown in Figure 4 and Figure 5 has been improved through the increased size of labels and increasing the contrast in contour colour.
Queensland Department of Environment and Science	1.044	Appendix K-2 Subsidence Management Plan	Section 2.2 Section 2.3	Section 2.2 and section 2.3 of the Subsidence Management Plan indicate that several baseline studies would be undertaken. It is not clear which of these studies have already been undertaken. However all baseline studies and collection of data required to understand the baseline conditions of areas to be subsidised should have been completed and presented under this EIS.	Undertake all relevant baseline studies to support the Subsidence Management Plan specifications and present the outcomes in the EIS. Analyse the data to describe the baseline conditions and using the results of this analysis identify relevant and effective avoidance, mitigation and management actions.	Baseline studies have been undertaken and included in the EIS including Appendix E-3 Hydrology, Hydraulics and Geomorphology, Appendix C-1 Terrestrial Ecology Technical Report and Appendix D-1 Aquatic Ecology Technical Report. These studies have informed the avoidance, mitigation and management actions described in Table 7 Subsidence Risk Assessment and Table 8 Preliminary Subsidence Trigger Action Response Plan.

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Queensland Department of Environment and Science	1.045	Appendix K-2 Subsidence Management Plan	Table 3	Table 3 provides a list of potential mitigation measures to address subsidence impacts. The list provides insufficient information to determine why, how and when these measures would be implemented. Related to this, section 8.7 of Chapter 8 (Surface Waters) reiterates these mitigation measures, also without sufficient detail to demonstrate how subsidence impacts on surface waters would be managed.	Amend the Subsidence Management Plan to: - provide significant further details of the proposed mitigation measures. - justify the choice of measures, including detailed examples of the successful application of these measures for comparable sites and subsidence impacts. - include details of how baseline monitoring has been used to determine the choice of mitigation measures. - detail how the effectiveness of the mitigation measures would be evaluated and adjusted if required.	Section 4 Subsidence management of Appendix K-2 Subsidence Management Plan presents detail on the proposed management strategies and mitigation measures to be put in place. The TARP included as Table 7 details when these measures would be implemented.
Queensland Department of Environment and Science	1.046	Appendix K-2 Subsidence Management Plan	Section 4	Section 4 of the Subsidence Management Plan states that a key aspect of reporting on the management measures would include assessment of monitoring data (pre- and post-mining) against completion criteria in the Rehabilitation Management Plan. The department considers that the completion criteria lack specificity against matters proposed to be monitored in section 2.7 (subsidence impact monitoring summary). For the reporting to successfully identify subsidence-related impacts that require management actions, there must be clear criteria against key parameters of the relevant subsidence impact. The current completion criteria (as detailed in Chapter 5 of the EIS) do not provide clear and specific criteria for key subsidence impacts.	Review the completion criteria proposed for the project against the subsidence impacts detailed in the Subsidence Management Plan. Provide completion criteria that are consistent with these potential impacts and sufficient to align with the parameters detailed in Section 2.7 and the reporting program detailed in section 4.	The preliminary completion criteria in Chapter 5 Land Resources Table 5-16 and Appendix K-2 Rehabilitation Management Plan have been revised and are considered appropriate for the project. Reporting on subsidence rehabilitation activities and monitoring will also be refined and aligned as part of the development of the future Progressive Rehabilitation and Closure Plan (PRCP).
Queensland Department of Environment and Science	1.047	Chapter 6 Terrestrial Ecology	Section 6.3.4	Incorrect reference to Appendix C-1. "The habitat definitions are provided in Appendix C-1 Terrestrial Ecology Technical Report".	Correct reference is to Appendix C-3 Central Queensland Threatened Species Habitat Descriptions (section 3.4).	Reference corrected.
Queensland Department of Environment and Science	1.048	Chapter 6 Terrestrial Ecology	Section 6.4.2 Figure 6-3	Ground-truthed Regional Ecosystems The field mapping of regional ecosystems presented in the EIS differs from the Queensland Herbarium mapping. The EIS does not state whether these have been ratified by the Queensland Herbarium in accordance with the department's Terrestrial ecology EIS information guideline (ESR/2020/5309). As the ground-truthed mapping appears to be the basis for significant residual impact assessment and offsets, the Queensland Herbarium must ratify the changes and update the REDD mapping for these to be accepted for any offset processes.	Confirm that the field mapping of regional ecosystems has been ratified by the Queensland Herbarium and will be included in the Regional Ecosystem Description Database. If the field mapping has not been ratified provide the following evidence to the department for referral to the Queensland Herbarium as per the Terrestrial ecology EIS information guideline(ESR/202/5309): - appropriate site-level information as detailed in the current regional ecosystem survey and mapping methodology (Neldner et al. 2020) - spatial datasets of site locations and proposed new regional ecosystem polygons - site data sheets - site photographs. This evidence will be referred to the Queensland Herbarium by the department upon receipt. Where the changes to vegetation extent and category proposed in the EIS are not accepted by the Queensland Herbarium, the EIS must be revised accordingly, including all relevant figures in the EIS and if necessary areas of impact and offsets to MSES and MNES must also be revised.	The Amended EIS presents both State mapping of Regional Ecosystems (RE) and ground-truthed vegetation mapping based on findings of multiple field surveys conducted for the Project area by suitably qualified ecologists since 2010. Appendix C-1, Section 4.1.2, characterises Regional Ecosystems (RE) (Table 8) and high value regrowth RE (Table 9) as mapped by DoR. This data is used to inform the assessment of significant residual impacts to regulated vegetation with potential for offset as the ground truthed field data is yet to be ratified by Queensland Herbarium. Field data is appropriate to describe existing biological diversity and condition, including listed flora and fauna species and regional ecosystems, and inform assessment of likely impacts on biodiversity and integrity of ecological processes, connectivity of habitats and ecosystems, including matters of national and state environmental significance. Site level data from various sources referenced in the EIS is available as spatial datasets, supported by site data sheets and photographs. This information is appropriate to describe the likely impacts on the biodiversity and natural environmental values of the affected areas as required by the Terms of Reference for an EIS for the Project. Queensland Herbarium ratification for field mapping of regional ecosystems is not required by the Project Terms of Reference or typical given the concept stage of Project design. An application for a property map of assessable vegetation (PMAV) can follow detailed design for certification to confirm assessment and management requirements, including offset liability, before construction impacts. The PMAV is triggered by assessment of Regulated Vegetation i.e. prescribed RE that are endangered or of concern RE, intersect with wetland, or areas of essential habitat for EVNT flora or fauna within Category B (remnant) area on the regulated vegetation management map – refer CSS/2018/4279 Resources for Matters of State Environmental Significance Information Sheet (des.qld.gov.au). Before construction impacts, BMA will provide site level data as evidence to support ratification of ground truthed vegetation mapping where required to be used as a basis for significant residual impact assessment and offset.
Queensland Department of Environment and Science	1.049	Chapter 6 Terrestrial Ecology	Section 6.4.2 Table 6.3	TEC clarification The EPBC Act description for RE 11.3.2 states that it was listed as endangered after submission with a further explanation in a footnote. However, no statement identifies what threatened ecological community (TEC) this is referring to. It is assumed to be the Weeping Myall Woodlands TEC. It is noted that the EPBC referral decision for the project was made on 18 November 2016 (2016/7791). This was eight years after the listing of the Weeping Myall Woodlands TEC. It is assumed that RE 11.3.2 is not dominated by Acacia pendula and therefore does not fulfil the TEC description.	Provide clarification on the statements in Table 6.3. Provide evidence why the Weeping Myall Woodland TEC was not considered to be represented on or within the vicinity of the project.	Appendix C-1, Section 4.1.4, describes threatened ecological communities having potential to occur within the Project Site based on mapped and observed vegetation communities (Regional Ecosystems). Endangered Weeping Myall Woodlands TEC is assessed as unlikely to occur within the Project Site. Potential RE (RE 11.3.2) containing the TEC was mapped by DoR within the Project Site, however it was not identified through ecological surveys. Likelihood of occurrence for EPBC Act-listed TEC potentially occurring within the Project Site is set out in Table 10 of Appendix C-1.
Queensland Department of Environment and Science	1.050	Chapter 6 Terrestrial Ecology	Section 6.9.1.1	Brigalow In reference to Brigalow it states that approximately 43.14ha would be cleared. However, Table 6.15 identifies a total of 49.64ha of Brigalow (RE 11.3.1; RE 11.4.8; RE 11.4.9) would be directly impacted.	Reconcile the amount of Brigalow that would be directly impacted and update the EIS where required.	The assessment of impacts to terrestrial ecology has been revised and refined with the new spatial and temporal data from modelling of subsidence from mining operations. Appendix C-1 describes and conservatively quantifies direct impacts associated with surface infrastructure, incidental mine gas drainage and ponding, as well as indirect impacts of subsidence across the remaining Project Footprint. Appendix C-1 describes the impact assessment on Brigalow-containing RE (Section 9.1.4.1) and Brigalow TEC (Section 9.1.4.1). Within the Project Site, DoR maps 655.12 ha of RE 11.3.1, RE 11.4.8 and RE 11.4.9 containing Brigalow; in comparison, 526.68 ha of ground truth RE 11.3.1, RE 11.4.8 and RE 11.4.9 was identified within the Project Site. Of this confirmed area, the Project anticipates 49.83 ha of direct impacts from construction of surface infrastructure and incidental mine gas drainage and, during operation, 12.45 ha of direct impacts from ponding and 211.77 ha of indirect impacts from subsidence. RE impacts are detailed in Appendix C-1, Section 9.1.1, 9.1.2 and 9.1.3. Of the 396.54 ha of Brigalow TEC confirmed within the Project Site, conservative impact assessment predict 43.76 ha of direct impacts comprising 19.21 ha by clearing for surface infrastructure, 14.71 ha by incidental mine gas drainage and 9.84 ha within ponding areas, with 176.40 ha remaining within the Project Footprint having potential to be indirectly impacted by subsidence.
Queensland Department of Environment and Science	1.051	Chapter 6 Terrestrial Ecology	Section 6.9.1.1	Pipeline crossings There is a lack of specific detail on the number, location and extent of impacts relating to proposed pipeline crossings of the relevant creeks.		Potential impacts associated with construction and operation of the Project are described in Chapter 6, Section 6.9, including locations of potential pipeline crossings of relevant creeks for water and gas transfers. Further detail is provided in Appendix C-1, Section 9.1.1.1, including list of watercourse crossing locations potentially impacted by the Project in Table 39. Preliminary design of the layout of the IMG drainage network restricts the number of creek crossings to minimise direct disturbance to riparian vegetation and fish passage. Required pipeline crossings will be trenched crossings, with disturbed areas reinstated to stabilise the river bed and banks.
Queensland Department of Environment and Science	1.052	Chapter 6 Terrestrial Ecology	Section 6.9.1.1	Fragmentation It is noted that vegetation would be left as patches between the gas drainage infrastructure. This would likely be subject to indirect impacts from fragmentation, edge effects, disturbance from ongoing maintenance activities, weed incursion and subsidence leading to long-term loss of functional habitat values (such as food and shelter resources). It is considered that these areas would be indirectly impacted and therefore subject to assessment and offsets.	Amend the EIS, if required, to assess indirect impacts to the vegetation patches left between the gas drainage infrastructure. Update to reflect any additional impact area to relevant MNES (such as the Brigalow TEC) or MSES values.	The amended EIS provides additional assessment of indirect impacts to vegetation patches left between gas drainage infrastructure. Potential impacts associated with construction and operation for the Project are described in Chapter 6, Section 6.9, including fragmentation of vegetation communities and habitat. Clearing will cause direct loss of some remnant and HVR native vegetation, as well as fragmentation of some vegetation communities such as Brigalow TEC as discussed in Chapter 21. Further detail is provided in Appendix C-1, Section 9.1.2.1, including discussion of fragmentation and edge effects associated with transport and powerline corridor and gas drainage infrastructure. This may locally restrict movement of the species, particularly where the clearing impact width exceeds the volplane distance of the species (greater than 100 m). The EIS assessment makes conservative allowance for parallel corridors approximately 100 m wide for the pipeline and associated access tracks, however vegetation clearing will be minimised to 20 m to 50 m in the case of vehicle tracks, and 10 m to 20 m for the pipeline with sections of vegetation and habitat, approximately 260 m wide, to be retained between each of these corridors). Given the availability of similar habitat in the region, the expected clearing impact will not typically exceed 100 m for corridors.
Queensland Department of Environment and Science	1.053	Chapter 6 Terrestrial Ecology	Section 6.9.1.1	Impact areas Impact areas detailed in Table's 6.15 and 6.16 are not clearly identifiable in the corresponding Figure's 6.9 and 6.10. The figures depict the biodiversity status of the REs and the fauna habitat types within the project footprint. This corresponds to the 'Project Footprint (ha)' column in the tables.	Depict the residual impact areas on separate figures. These figures would depict the 'Total impact area (ha)' column from Table 15; and the 'TOTAL disturbance surface facility and IMG drainage network (ha)' column from Table 16. Clearly delineate the 'Surface facilities (ha) and 'IMG drainage network (ha)' columns from Table 6.16 on the updated figure for fauna habitat types. Update shapefiles to reflect these changes.	Appendix C-1 includes residual impacts for each threatened flora and fauna (Figure 7-8, 15-21), and combined vegetation community and fauna habitat during construction (Figure 25-26) and operation (Figure 29-30).

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.054	Chapter 6 Terrestrial Ecology	Section 6.9.2.1	Vegetation dieback It is stated that "Where vegetation is intolerant to this inundation (such as Eucalyptus popular), it will die back and, in areas subject to temporary inundation, may be replaced by more tolerant vegetation". It is noted that dieback would occur. However, there is no detail on the magnitude and extent of impact or over what timeframe this may occur. Dieback of remnant vegetation and its replacement by more tolerant vegetation could result in ecosystem change, loss of threatened species habitat and weed incursion.	Provide additional detail on the magnitude, extent and timeframes for vegetation dieback. Relevant tables and figures are suggested. Update the EIS to reflect any additional impact area to relevant MNES or MSES values. Provide further assessment on the scenario and likelihood of ecosystem change and how this may be ameliorated by proposed mitigation measures.	The amended EIS includes a conceptual ponding assessment in Appendix E-4, and potential impacts associated with construction and operation for the Project are described in Chapter 6, Section 6.9, including dieback from inundation due to ponding. As described in Appendix C-1, Section 9.1.2.1, subsided areas containing deeper depressions may be subject to ponding, resulting in changes in the vegetation composition and structure. Ponding areas are likely to be created from subsidence and vary in the period of inundation, with deepest ponding containing water more than 50% of the time (Engeny, 2022). Where ponding is temporary, species (such as Eucalyptus tereticornis, E. camaldulensis) tolerant to periodic inundation are likely to remain (Jackson, 2005). Vegetation intolerant to inundation (such as Eucalyptus populnea) may exhibit individual die back and, in some areas, be replaced by more tolerant vegetation, including weeds. Seasonal inundation and flow along the creeks and their tributaries also provides habitat and breeding sites for aquatic or semi-aquatic species such as frogs and their predators such as snakes. Where vegetation mortality occurs as result of persistent ponding, associated with subsidence, it will be revegetated with species that are tolerant of inundation. There may be instances in which a mix of native and non-native species will be implemented as described in Appendix C-1, Section 10.4.2.
Queensland Department of Environment and Science	1.055	Chapter 6 Terrestrial Ecology Appendix K-1 Rehabilitation Management Plan	Section 6.9.2.1	Subsidence impacts Section 6.9.2.1, references paper 'Jackson, 2005' for evidence that temporary ponding of species such as Eucalyptus tereticornis are tolerant to period inundation. The paper notes: Eucalyptus aggregate, E. camphora, E. crenulata, E. gunnii & E. gunnii divaricata are especially tolerant of waterlogging. In New Zealand and Tasmania these species grow naturally in undrained peat moors where surface water is present for at least six months of the year. They also tolerate stagnant water just below the surface (unlike poplar and willow). They are, however, stunted on permanently flooded soils. However, the Rehabilitation Management Plan proposes that persistent ponding would only be addressed where it is present for more than 12 months and is greater than 3 metres. As per the paper, flooded soils let alone ponding depths up to 3 metres has potential to stunt even these tolerant species. Further to above, section 6.9.2.1 notes: 'Where vegetation is intolerant to this inundation (such as Eucalyptus populnea), it will die back and, in areas subject to temporary inundation, may be replaced by more tolerant vegetation.' Based on the mapping of regional ecosystems for the area and as shown in Figure 6-3, most of the area proposed to be subsided with a final land use of woodland is E. populnea regional ecosystems. In light of this and consideration of the matters raised above about the Rehabilitation Management Plan, the department does not consider that the EIS appropriately employs the impact hierarchy, ensuring that any impacts are first avoided before further measures are implemented. It is expected with the amount of E. populnea regional ecosystems in the vicinity of the northern section of the subsidence panels and as existing vegetation is to be retained where it is initially present, further measures would need to be proposed to ensure that substantial ponding does not occur.	As per # 33 regarding Appendix K-1 Rehabilitation Management Plan, and modelling of potential ponding, present details of modelling and sufficient mapping to clearly quantify the extent of all potential ponding resulting from subsidence due to the project and estimates of how long ponding would persist. Where the modelling or mapping shows extensive ponding across the subsided areas, provide further avoidance, mitigation and management strategies to address such ponding. Develop completion criteria relevant to all surface ponding and update the Rehabilitation Management Plan to address potential impacts.	Amended EIS provides detailed assessment of the spatial and temporal impacts associated with subsidence from operational mining of the underground mine plan via longwall mining methods. Appendix C-1, Section 9.1.21 provides detailed and referenced evidence to support the assessment of impacts associated with subsidence, including potential ponding based on modelling and mapping to clearly quantify the extent and duration of ponding resulting from subsidence as the project progresses. Management strategies specific to subsidence are included in Section 10.3.3. Post subsidence inspections and identification of high risk areas, will identify opportunities to rehabilitate with species similar to pre-existing vegetation communities of the region that are tolerant of inundation. The objectives, completion criteria, and indicators in Table 3 are drawn from BHP's Queensland Coal Rehabilitation Completion Criteria (BHP, 2018). The criteria, objectives and goals outlined in Table 3 of Appendix K-1 are preliminary and final rehabilitation milestone criteria will be developed as part of the PRCP. On completing each rehabilitation milestone, BMA will demonstrate milestone criteria have been met and land is progressing toward the planned PMLU
Queensland Department of Environment and Science	1.056	Chapter 6 Terrestrial Ecology	Section 6.9.2.1	Subsidence impacts It is noted and supported that the worst-case scenario has been assessed in relation to subsidence impacts. It is stated that subsidence would impact the riparian corridors of Boomerang Creek, Plumtree Creek and Hughes Creek. However, there is insufficient detail on likely impacts. It is noted that "In the short to medium term, these watercourses will become more pond-like in nature, with flows potentially restricted".	Provide additional detail on the restriction of flows and changes in inundation levels in riparian zones. Provide specific assessment on the location and extent of riparian vegetation likely to experience dieback. Provide specific assessment on the location and extent of surface cracking/ erosion that may destabilise large trees. Provide specific assessment on subsidence impacts relating to fish passage. Include this in an amended Chapter 7 Aquatic Ecology. Specific modelling of these impacts is required to define and describe likely short term and medium term impacts. Additional tables and figures are required to describe these impacts. Update the EIS to reflect any additional impact area to relevant MNES or MSES values. Provide further assessment on the scenario and likelihood of ecosystem change (conversion from grassland or woodland to ponds) and how this would be ameliorated by proposed mitigation measures.	The amended EIS presents detailed assessment of the underground mine layout in Appendix B-1 Subsidence Modelling Technical Report, Appendix E-3 Hydraulic, Hydrology and Geomorphology Assessment and new Appendix E-4 Conceptual Ponding Assessment, to describe potential impacts, including: changes in hydraulics, hydrology, ponding, fish passage and inundation of vegetation, including large trees and riparian vegetation - refer Appendix C-1 Terrestrial Ecology Technical Report, Section 9.1.2. Figure 29 shows modelled subsidence areas, predicted ponding and potential impacts to vegetation. The amended EIS provides specific assessment on subsidence impacts relating to fish passage in Chapter 7 Aquatic Ecology, Section 7.7.1.1. Specific mitigation measures to address subsidence impacts to fish passage are provided in Section 7.9. Post-subsidence monitoring will occur at all locations outlined in the pre-subsidence monitoring (based on modelled predictions of cracking areas) as well as any other areas that were affected by subsidence not monitored as a part of the pre-subsidence survey. Section 6.2.2 of Appendix K-2 Subsidence Management Plan describes monitoring for surface water impacts. For recurring surface cracking that is not self-healing, or surface cracks that have not self-sealed within 12 months of subsidence, will be repaired. A high level overview of management strategy for surface cracks is provided in Section 4.1.2 of Appendix K-2 Subsidence Management Plan.
Queensland Department of Environment and Science	1.057	Chapter 6 Terrestrial Ecology	Section 6.9.2.1	Wildlife corridors The EIS states that a number of fauna habitat trees in the riparian wildlife corridors may be lost from the effects of subsidence. However, there was insufficient assessment on the potentially affected species. Table 6.17 identifies subsidence impacts to 'fauna habitat types'. However, it is unclear which of these habitat types used by greater glider and koala would be significantly impacted leading to a functional loss of the wildlife corridor.	Provide specific assessment on the likely impacts to arboreal species (in particular, the threatened species greater glider and koala) from the loss of habitat trees and significant impacts to the wildlife corridor. Provide updated measures on how impacts to wildlife corridors can be avoided or mitigated.	In response to the new, updated and amended technical assessments of subsidence and its impacts, the amended EIS includes additional specific assessment on likely impacts to arboreal species (including greater glider and koala) from loss of habitat trees and wildlife corridor impacts is included in Chapter 6, Section 6.10.4. Chapter 6, section 6.12.1 outlines mitigation measures which avoid and minimise impacts to wildlife corridors.
Queensland Department of Environment and Science	1.058	Chapter 6 Terrestrial Ecology	Section 6.10.2	Brigalow TEC It is stated that 275.17ha of the Brigalow TEC may be subject to disturbance (section 6.10.1). Table 6.16 also confirms this total for the project footprint. However, it is noted that the Brigalow section states that 246.07ha of Brigalow falls within the project footprint. Table 21-69 also states 246.07ha. However, Table 21-70 states that 224ha is the predicted significant residual impact for this MNES.	Clarify the extent of Brigalow TEC that is subject to impact and offsetting and amend the EIS where required.	The amended EIS presents an assessment of the underground mine layout to clarifying the potential impact of up to a total of 210.31 ha of the Brigalow (Acacia harpophylla dominant and co-dominant) TEC and also containing endangered REs will be impacted by the Project. Full details of the significant impact assessment are provided in Chapter 21 Matters of National Environmental Significance, Section 21.8.2.
Queensland Department of Environment and Science	1.059	Chapter 6 Terrestrial Ecology	Section 6.10.4	Koala It is noted that a large area of potential habitat for koalas exists within the project footprint (~1,219ha). However, there is no figure in Chapter 6 that shows this potential habitat. The EIS also states "... the overall fragmentation, loss of habitat and disturbance may make their continued presence untenable across much of the Project Footprint". It is unclear how this statement can be reconciled against the significant residual impact assessment that calculated 163ha of impact (on 'preferred habitat') requiring offsets. Complete loss of habitat and ongoing disturbance may lead to local extinction of the species. The department considers that this is an unacceptable impact. Additional assessment is required to justify why direct and indirect impacts to 'suitable habitat' are considered not to result in a significant impact. In particular it is noted that the IMG drainage network extends into 'koala suitable habitat' as depicted in Figure 19 of Appendix C-1 and that the accommodation camp adjoins this habitat. It is considered these areas would be subject to subsidence and disturbance impacts making this habitat potentially untenable	Amend the EIS to: a) provide a figure of potential habitat for the koala. This must also be provided for the other three species of conservation significant fauna likely to be significantly impacted: greater glider, squatter pigeon and ornamental snake b) include figures that must delineate the potential habitat with those disturbance areas considered to be significantly impacted i.e. requiring an offset c) undertake additional assessment to justify why direct and indirect impacts to 'suitable habitat' are considered not to result in a significant impact in particular from the IMG drainage network d) provide detailed measures to avoid and mitigate the loss of habitat and disturbance to koala. Translocation programs should be considered. A draft 'Significant Species Management Plan' is suggested for assessment. Note that this should incorporate measures for all four conservation significant species subject to offsets.	The assessment of impacts to terrestrial ecology has been revised and refined with the new spatial and temporal data from modelling of subsidence from mining operations. A total of 1,160.17 ha of potential habitat for Koala is mapped within the Project Footprint. This includes 140.93 ha of preferred habitat, 930.17 ha of suitable habitat and 89.07 ha of marginal habitat. Direct and indirect impacts to Koala have been discussed in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. Figures of potential habitat have been provided for the Koala, Greater Glider, Squatter Pigeon (Southern), Ornamental Snake, Australia Painted Snips, Grey Falcon and Short-beaked Echidna in Appendix C-1, Figure 15-21).
Queensland Department of Environment and Science	1.060	Chapter 6 Terrestrial Ecology	Section 6.10.4	Greater glider The first sentence refers to the koala and appears to be in error, as it should refer to greater glider.	Confirm that the total potential habitat refers to the greater glider or whether this total should be 806.67ha, and amend the EIS.	Potential habitat areas have been amended. A total of 748.13 ha of potential habitat for Greater Glider is mapped within the Project Footprint. This includes 72.28 ha of preferred habitat, 195.22 ha of suitable habitat and 480.63 ha of marginal habitat. Direct and indirect impacts to Koala have been discussed in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.061	Chapter 6 Terrestrial Ecology	Section 6.12.1	Avoidance There is insufficient detail on how avoidance strategies have been considered or employed for this project. The EIS states that the location of the coal resources is the limiting factor. However there is no discussion of avoiding mining under or adjacent to sensitive environmental area, habitats, waterways and wetlands and environmental values that would be potentially impacted by subsidence.	Present comprehensive avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values including not mining beneath or adjacent to waterways and wetlands, threatened species habitats and communities. Where avoidance is not possible provide detailed reasoning and justification for potential impacts and comprehensive demonstration that impacts would be minimised and mitigated (including evidence of successful management measures in equivalent situations).	Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. The finalised layout of the Project aims to optimise mining to access most of the target resource with the smallest footprint to minimise impacts to land, environment, heritage and community values. At the proposed location, the Project will intersect Hughes Creek and Boomerang Creek which are already subject to diversions and impacts of mining upstream, with the benefit of being able to avoid introducing mining impacts (including impacts to wildlife corridors) at Phillips Creek, Spring Creek and One Mile Creek to the south. An alternate location will result in new impacts and increased disturbance to land and sensitive environmental values such as wildlife corridors, as well as key infrastructure being further away from existing infrastructure and mining operations leading to increased disturbance as well as higher development and operational costs in accessing and processing the resource. The Project will adopt an optimised underground mine plan for the Project to integrate with existing Saraji Mine open cut mine and supporting infrastructure, access dipping coal seams and minimise environmental impacts. Where possible utilisation of the existing Saraji Mine infrastructure has been incorporated into the Project design to minimise the need for additional disturbance. The optimised mine plan provides ideal capacity to mine the target resource within the Project Site with consideration of resource geology and quality, production rates, site constraints and potential environmental impacts.
Queensland Department of Environment and Science	1.062	Chapter 6 Terrestrial Ecology	Section 6.12.2 Section 6.14	Mitigation measures There is excessive use of non-committal language such as "wherever possible", "where practical", "wherever this is safe to do so" in stating proposed mitigation measures. It is noted that avoidance principles have been highlighted and that the design of the IMG drainage has not yet been finalised. This leads to a lack of confidence that measures would be undertaken to an adequate standard.	Amend the EIS to provide clear and measurable commitments to undertake mitigation actions. Actions must be stipulated in relevant draft environmental management plans that must be submitted in an amended EIS.	The EIS has been amended throughout, and specifically in Appendix O-1 Summary of Commitments, to present clear measureable actions to be implemented. The amended EIS commits BMA to develop and implement management and monitoring plans once the Project's detailed design progresses as required by Environmental Authority conditions. The amended EIS indicates the following management plans will be developed to address specific impacts and outline mitigation measures include: - Construction Environmental Management Plan - Weed and Pest Management Plan (construction phase only) - Rehabilitation Plan (construction and operational phase) - Topsoil Management Plan (construction and operational phase) - High Risk Species Management Plan (construction phase only) - Subsidence Management Plan (operational phase) - Offset Management Plan (operational phase) - Groundwater Dependent Ecosystem Monitoring and Management Plan (operational phase). - Site Water Management Plan (operational phase) - Significant Species Management Plan (construction and operational phase) - Progressive Rehabilitation and Closure Plan.
Queensland Department of Environment and Science	1.063	Chapter 6 Terrestrial Ecology	Section 6.13 Section 6.14	Riparian habitat restoration The department considers the project has potential direct and indirect impacts to riparian wildlife corridors that may fragment or sever connectivity for koala and greater glider. However, there was no mention of potential habitat restoration works to maintain connectivity for these species in the 'Fauna' sections.	Amend the EIS to clearly describe potential impacts to habitat connectivity on the greater glider and koala. These impacts must then be addressed in detail in the relevant mitigation measures sections. Incorporate an ongoing riparian restoration program as a mitigation measure with the goal of creating and maintaining greater glider and koala habitat connectivity. Provision of a draft Habitat Connectivity Restoration management plan for assessment is required.	The amendeed EIS provides detailed assessment of potential direct and indirect impacts to habitat connectivity on the Greater Glider and Koala in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. In Chapter 6, Section 6.12.1 outlines mitigation measures which avoid and minimise impacts to fauna, including a Rehabilitation Plan. Appendix K-1 (Rehabilitation Management Plan) outlines ecosystem and land use establishment (Section 9.5.4) and ecosystem sustainability (Section 9.5.5) and rehabilitation methods (Section 10).
Queensland Department of Environment and Science	1.064	Chapter 6 Terrestrial Ecology	Section 6.15	Subsidence management examples The EIS states that management strategies "...will include lessons learnt from subsidence monitoring results from other BMA owned underground operations in the region (e.g. Broadmeadow Mine)". However, there is no analysis provided of what these lessons were.	Provide specific examples of the "lessons learnt from subsidence monitoring results" from relevant projects and how those lessons would translate into management strategies for this proposed project.	The amended EIS includes revisions and updates to Appendix K-2 Subsidence Management Plan to outline controls to monitor, minimise and mitigate environmental impacts associated with subsidence. As described in the amended Chapter 6 Terrestrial Ecology, management strategies will include lessons learnt from subsidence monitoring results from other BMA owned underground operations in the region (e.g. Broadmeadow Mine). Where works are required to repair surface cracks from subsidence, this will be in accordance with the measures within the Subsidence Management Plan found in Appendix K-2 Subsidence Management Plan of this EIS. Clearing of vegetation will be minimised through the use of smaller machinery where practical in the event repair works required machinery. Grasses and other groundcover will be slashed rather than cleared to allow access. Where machinery is required to repair surface cracks or construct subsidence pond drainage channels, vehicles and equipment will be cleaned of all weed seeds and other potential contaminants before entering the site. Progressive rehabilitation will be undertaken as detailed in amended Appendix K-1 Rehabilitation Management Plan.
Queensland Department of Environment and Science	1.065	Chapter 6 Terrestrial Ecology	Section 6.16	Management plans The EIS states that "A number of management plans are proposed to be prepared to address specific impacts and outline mitigation measures to be implemented during the construction and operational phase of the project". The department considers that these draft plans including the overarching "Construction Environmental Management Plan" should be provided for assessment as part of the EIS.	The draft management plans referred to in the EIS must be provided for assessment in an amended EIS. These plans must provide detailed information on actions/ mitigation measures proposed when monitoring thresholds are reached.	Management plans, including Appendix K-1 Rehabilitation Management Plan and Appendix K-2 Subsidence Management Plan, are included within the EIS and will be revised and updated following approval and detailed design. Additional management plans will be prepared for implementation following approval and detailed design.
Queensland Department of Environment and Science	1.066	Chapter 6 Terrestrial Ecology	Section 6.18	MSES The EIS states that there would be a significant residual impact (SRI) to three MSES values. However, there is no detail provided on the impact areas, their location or how the SRI was assessed. It is noted that the full assessment is referred to Appendix C-1. However, the department requires a more detailed assessment of MSES impacts to be provided in the relevant chapters. The department requires this information for conditions on any future draft EA.	A detailed description of potential impacts to MSES values must be presented in relevant EIS chapters including appropriate tables and to inform EA conditions.	The amended EIS includes updates to Chapter 6, Section 6.7, to outline Matters of State Environmental Significance (MSES), specifically relevant location and potential impact areas for the Project. Section 6.16 outlines the assessment process to determine significant impacts to MSES. The full assessment against the Department of the Environment and Heritage Protection (2014) Significant Residual Impact Guideline is detailed in Appendix C-1 Terrestrial Ecology Technical Report of this EIS.
Queensland Department of Environment and Science	1.067	Appendix C-1 Terrestrial Ecology Technical Report	Section 11.2	MSES – wetland Appendix C-1 (Table 45) notes that that a fourth MSES value – regulated vegetation (within a Vegetation Management wetland area) is considered to be subject to an SRI. However, this has not been identified in Chapter 6.	Amend the EIS to reconcile the SRI for regulated vegetation (within a Vegetation Management wetland area) so that it is described in Chapter 6 and is appropriately accounted in MSES offset requirements.	Chapter 6, Section 6.7 and 6.16 updated to include significant residual impact assessment process for Regulated vegetation within a mapped wetland. The full assessment against the Department of the Environment and Heritage Protection (2014) Significant Residual Impact Guideline is detailed in Appendix C-1 Terrestrial Ecology Technical Report of this EIS.
Queensland Department of Environment and Science	1.068	Appendix C-1 Terrestrial Ecology Technical Report	Section 11.2	Connectivity areas An SRI for connectivity areas has been determined but there is no total impact area identified for this value. Appendix C-2 (Table 3) states that a total of 1,269.2ha is subject to an offset. It is noted that Appendix C-1 states that a total of 1,282.2ha of remnant vegetation occurs within the project footprint. Furth	Amend Chapter 6 of the EIS to include the correct impact area for connectivity areas and provide an offset assessment for this value.	The assessment of impacts to remnant vegetation has been revised and refined with the new spatial and temporal data from modelling of subsidence from mining operations. As such, 1,220.34 ha of remnant vegetation occurs within the Project Footprint. Chapter 6, Section 6.7 and 6.16 updated to include significant residual impact assessment process for connectivity areas. The full assessment for connectivity areas against the Department of the Environment and Heritage Protection (2014) Significant Residual Impact Guideline is detailed in Appendix C-1, Section 11.2 of this EIS.
Queensland Department of Environment and Science	1.069	Appendix K-2 Subsidence Management Plan	Section 2.5 Table 2	Ecological monitoring Only baseline and post-mining ecological monitoring are proposed. It is not explicit that operational monitoring of vegetation is required on an annual basis as per Table 2 Monitoring summary. In particular, this is beneficial in instances where vegetation dieback from subsidence requires immediate intervention measures.	Amend the EIS to clearly incorporate ecological monitoring within the operational mining phase.	Ecological monitoring as described in Section 6.13 of Chapter 6 Terrestrial ecology will be implemented through management plans, including Appendix K-1 Rehabilitation Management Plan and Appendix K-2 Subsidence Management Plan, included within the EIS and revised and updated following approval and detailed design. Additional management plans will be prepared for implementation following approval and detailed design.
Queensland Department of Environment and Science	1.070	Chapter 7 Aquatic Ecology Appendix D1 – Aquatic Ecology Technical Report	Section 3	There are no recent baseline field studies presented in the EIS of the aquatic ecosystems at the project site. Surveys conducted in 2007 and 2011 are referred to in the EIS. This data is now more than ten years old and considered to be out of date.	Undertake additional field surveys to collect current baseline data on aquatic ecosystems potentially impacted by the project as well as identifying and sampling control site(s) for monitoring purposes. Include the results of the survey and proposed control sites in an amended EIS. Additional field surveys must include identifying all pools and wetlands within the subsidence area or potentially subject to cracking and fissures. Surveys must be undertaken in conjunction with/ following flow events at the site (so that there is water in the creeks/pools/wetlands) as well as during the dry season.	In addition to surveys completed in 2007 and 2011, Hydrobiology Pty Ltd (Hydrobiology) was commissioned to undertake aquatic surveys (including water quality, habitat availability, and structure, and fauna presence) at several sites within the Project Area. These surveys gathered baseline data on the aquatic ecosystems present within the Study Area and facilitated the delivery of the Aquatic Ecology Baseline and Impact Assessment report, included in Appendix D-1. The field survey, which was designed to collect current baseline data on aquatic ecosystems and identify control sites for monitoring, involved a series of sampling sites across the mapped waterways relevant to the project which were assessed over two survey periods (early and later-wet seasons). Results indicate no threatened aquatic species are present within the Study Area and that the project is expected to have a negligible to low impact on the aquatic ecosystem values of the receiving environments. The Aquatic Ecology Baseline and Impact Assessment has determined that the project is unlikely to result in significant residual impacts on wetlands of high ecological significance.

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Queensland Department of Environment and Science	1.071	Appendix D1 Aquatic Ecology Technical Report	Section 3	The level of detail presented on these studies is deficient. For example the rationale for site selection is not given; sample numbers per site; results such as the number, location, size and depth of instream pools and wetlands.	Present additional details that justify the aquatic ecosystem field surveys design for previous (2007 and 2011) and additional surveys for the project.	In addition to surveys completed in 2007 and 2011, Hydrobiology Pty Ltd (Hydrobiology) was commissioned to undertake aquatic surveys (including water quality, habitat availability, and structure, and fauna presence) at several sites within the Project Area. These surveys gathered baseline data on the aquatic ecosystems present within the Study Area and facilitated the delivery of the Aquatic Ecology Baseline and Impact Assessment report, included in Appendix D-1. The field survey, which was designed to collect current baseline data on aquatic ecosystems and identify control sites for monitoring, involved a series of sampling sites across the mapped waterways relevant to the project which were assessed over two survey periods (early and later-wet seasons). Results indicate no threatened aquatic species are present within the Study Area and that the project is expected to have a negligible to low impact on the aquatic ecosystem values of the receiving environments. The Aquatic Ecology Baseline and Impact Assessment has determined that the project is unlikely to result in significant residual impacts on wetlands of high ecological significance.
Queensland Department of Environment and Science	1.072	Appendix D1 Aquatic Ecology Technical Report	Map 3.1, Map 4.2	It is noted that there are no survey sites in Hughes Creek, a mapped purple MSES waterway with regulated riparian vegetation, that would be subsidised as a result of the project. It would be expected that the EIS would provide a summary of the aquatic environmental values across the whole site and upstream and downstream of the site, particularly in the impact areas.	Field surveys must characterise the aquatic ecosystems at the site and upstream and downstream of the project site and the rationale for survey site selection must be provided e.g. on the basis of habitat such as a perennial/long lasting waterhole, or on the basis of likely impact (area of subsidence, discharge release point), or proximity to infrastructure.	As part of the amended EIS, Hydrobiology was commissioned to undertake Aquatic Baseline and Impact Assessment on multiple locations within the catchment in the vicinity of the Project. Appendix D-1 Aquatic Ecology Technical Report describes environmental values, impacts and management strategies to be considered in the EIS - refer to summary in Chapter 7.
Queensland Department of Environment and Science	1.073	Appendix D1 Aquatic Ecology Technical Report	Section 4.6	The appendix does not clearly identify where waterways providing for fish passage and mapped on the disturbance footprint are potential MSES.	Amend the EIS to identify MSES waterways providing for fish passage impacted by the project and the location of waterway barrier works proposed for and as a result of the project.	The amended EIS has been updated to specifically describe in Section 7.7.1.2 of Chapter 7 (Aquatic Ecology), the design and construction of road and rail crossings, as well as any other waterway crossing by linear infrastructure (e.g. pipes for water supply), will ensure that fish passage is maintained throughout these waterways
Queensland Department of Environment and Science	1.074	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	The extent of potential impacts from subsidence on the aquatic ecosystems is not quantified.	Quantify the potential impacts from subsidence on aquatic ecosystems including: - stream length/width impacted - number of pools impacted - number of potential barriers/blockages to fauna passage - number of potential additional pondage - location and areas of potential erosion - quantified loss of connectivity (e.g. stream length, access to number of drought refugia pools, upstream catchment area etc.)	The amended EIS presents revision of Appendix D-1 Aquatic Ecology Technical Report to provide detailed description of the baseline aquatic ecology values, assessment of potential impacts and mitigation and monitoring strategies. The impact assessment took into consideration the hydrology and geomorphology impacts anticipated in Appendix E-3 and conceptual ponding anticipated by the assessment in Appendix E-4, which quantifies the related subsidence impacts. As described in Appendix K-2, management will be through an adaptive management approach and covers a range of specific issues associated with the potential impacts identified.
Queensland Department of Environment and Science	1.075	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	Mitigation measures proposed for subsidence impacts on aquatic ecosystems are vague and lack sufficient detail to assess their likely effectiveness. The risk assessment assumes that the mitigation implemented would be effective in redressing impacts on aquatic ecosystems to low risk. However this is not demonstrated in the EIS.	Provide further details of the proposed subsidence management for aquatic ecosystems for example: - how abrupt changes in bed level would be mitigated so that aquatic ecosystem values are fully restored - how cracking or fissures could impact wetlands and how this would be managed, with examples of successful comparable mitigated wetlands that have been similarly impacted - how ponding as a result of subsidence would be addressed - how changes to flow patterns and stream hydraulics as a result of subsidence would be addressed so that aquatic ecosystem values are restored and maintained - how fauna passage would be restored and stranding as a result of subsidence would be mitigated - demonstrate the likely success of proposed mitigation using examples of long-term successful mitigation of subsidence impacts on aquatic ecosystems in similar creeks - qualify the use of "where practical" for the implementation of subsidence management measures by explaining the circumstances under which different measures would or would not be practical at the site.	Within the amended EIS, Appendix B-1 predicts subsidence impacts from the underground mine layout. In response, Appendix K-2 Subsidence Management Plan has been updated to provide information on the expected subsidence depths and locations and provides a detailed plan for how the impacts will be managed and monitored. The impact assessment took into consideration the hydrology and geomorphology impacts anticipated in Appendix E-3 and conceptual ponding anticipated by the assessment in Appendix E-4, which quantifies the related subsidence impacts. As described in Appendix K-2, management will be through an adaptive management approach and covers a range of specific issues associated with the potential impacts identified.
Queensland Department of Environment and Science	1.076	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	The use of the term 'sensitive environmental receptors' in evaluating ecological components is not explained.	Define what a 'sensitive environmental receptor' is and how this informs the risk-based impact assessments for aquatic ecosystem values.	Appendix D-1 Aquatic Ecology Technical Report describes the impact assessment methodology, including screening of potential (un-mitigated) impacts of the construction and operation, profiled and screened for inclusion in the impact assessment based on magnitude of threat, sensitivity of receptor and severity of potential impact. This section has been amended to state that species which are less tolerant to variable flow and water quality conditions are unlikely to occur in watercourses in or surrounding the Project Site.
Queensland Department of Environment and Science	1.077	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	The use of the term 'harsh' in relation to environmental conditions is not explained or quantified. The inference is that existing 'harsh' conditions would in some way mitigate further impacts as a result of the project as the ecosystem is already adapted to 'harsh' conditions.	Define what 'harsh' conditions constitute for the site's aquatic ecosystems. Provide evidence that the adaptations to "harsh" conditions outlined for aquatic ecosystems would mitigate against project impacts.	The term 'harsh' has been removed and discussions have been amended to refer to species which are tolerant to a range of conditions, which could be considered 'harsh', including variable water quality, highly variable stream flow and habitat.
Queensland Department of Environment and Science	1.078	Appendix D1 Aquatic Ecology Technical Report	Section 5.3	The claim that taxa that are potentially "sensitive to harsh environmental conditions are rare" in the waterways, as justification for the waterways to not be sensitive environmental receptors does not make sense. Species adapted to an environment would be found there. Species not adapted to the environment would always be rare in that environment.	Amend the EIS to provide a credible, evidence-based assessment of sensitivity, based on the range of tolerances of aquatic fauna, flora and ecosystems relevant to the project, and the potential impacts of the project on these ranges.	The amended EIS assesses the sensitivity of waterways according to a subject matter expert with the rating derived depending on the type of value, the intrinsic worth of the value, and related to legal protection, or by individual or community perception of social or cultural worth. Rarity or uniqueness was considered to increase the importance of a value. Within the revised EIS the detailed impact assessment is provided in Chapter 8 and Appendix D-1.
Queensland Department of Environment and Science	1.079	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	The extent and locations of potential impacts from waterway crossings on the aquatic ecosystems is not quantified	Provide the locations of potential and existing waterway crossings for the project on a map. Any waterway barrier works associated with the project that are not on the mining leases must also be identified, e.g. for powerline crossings of creeks outside of the mining leases.	Figure 73 has been updated to show existing and potential crossing points on waterways where known. Infrastructure works outside of the mining leases which may impact on fisheries significant waterways is not yet understood, however any works which impact on mapped waterways, will be subject to assessment under the Fisheries Act 1994. Assessment will include consideration of whether works will meet Accepted Development Requirements or will require a development approval under the Planning Act 2016.
Queensland Department of Environment and Science	1.080	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	The commitment to ensure fish passage is maintained at crossings is qualified by "where practical". This qualifier is not explained and it is not clear to what extent this commitment would be impractical.	Amend the EIS to: - provide an explanation why the provision of fish passage is not practical - identify and quantify instances where the maintenance of fish passage at crossings on the site is not practical - commit to the provision of fish passage at all crossings.	From Section 7.7.1.2, fish passage in waterways, the design and construction of road and rail crossings, as well as any other waterway crossing by linear infrastructure (e.g. pipes for water supply), will ensure fish passage is maintained throughout these waterways. As best practice, design will firstly consider that waterway crossings within the mining lease will be designed as bridges in accordance with the What is not a waterway barrier work? factsheet (DAF, 2023) design features. Otherwise, the Accepted Development Requirements (ADR) for constructing or raising waterway barrier works will be used to guide designs of culverts or bed level crossings. Any waterway crossings outside of the mining lease area will be subject to Planning Act approval, and pre-lodgement advice will be sought from the State Assessment and Referral Agency to determine the best pathway for the proposed designs, such as bridge, ADR or development approval.
Queensland Department of Environment and Science	1.081	Appendix D1 Aquatic Ecology Technical Report	Section 5.2	Culvert sizing alone is unlikely to provide for fish passage at a waterway crossing.	Amend the EIS to include all relevant considerations for the provision of fish and other fauna passage at waterway crossings, as well as culvert sizing.	Chapter 7, section 7.6.3 has been amended to include the best practice design considerations including consideration of bridge crossings, ADR requirements and consultation with DAF in the development of crossing options where any waterway crossings are required for the Project.
Queensland Department of Environment and Science	1.082	Appendix D1 Aquatic Ecology Technical Report	Section 5.3	As per #73 above, the mitigation measures for subsidence have not been sufficiently detailed or demonstrated to be effective in reducing risks of adverse impacts on aquatic ecosystems.	As per #73 above, mitigation measures for subsidence impacts on aquatic ecosystems must be presented in detail with evidence that measures would be effective at this site.	Within the amended EIS, Appendix B-1 predicts subsidence impacts from the underground mine layout. In amending the EIS, Appendix K-2 Subsidence Management Plan provides information on the expected subsidence depths and locations and provides a detailed plan for how the impacts will be managed. Management will be through an adaptive management approach and covers a range of specific issues associated with the potential impacts identified.
Queensland Department of Environment and Science	1.083	Appendix D1 Aquatic Ecology Technical Report	Section 5.3	As per #74 above, the terminology 'sensitive environmental receptor' is not well defined. The assessment concludes that the risk of adverse ecological impact from all sources of potential impact was low.	Provide a credible, evidence-based explanation of why aquatic ecosystems (and fauna and flora) are considered not sensitive to all the potential impacts of the project (on and off-site, direct and indirect). This explanation also include a detailed assessment of current environmental conditions, species habitat requirements, likely changes to habitats and environmental conditions as a result of the project, proposed mitigation and management measures and their likely efficacy (based on comparable site examples).	Within the amended EIS, the sensitivity of waterways has been assessed by the subject matter expert with the rating derived depending on the type of value, the intrinsic worth of the value, and related to legal protection, or by individual or community perception of social or cultural worth. Rarity or uniqueness was considered to increase the importance of a value. Detailed impact assessment is provided in Chapter 8 and Appendix D-1.
Queensland Department of Environment and Science	1.084	Appendix D1 Aquatic Ecology Technical Report	Section 5.3	The EIS concludes that potential impacts on aquatic ecosystems are known and understood with a moderate to high degree of confidence on the basis of environmental values being well understood from desktop and baseline surveys, and on the basis of expertise on the potential impacts of underground coal mining on aquatic environmental values. However the baseline survey data is over 10 years old and therefore considered out of date. In addition, learnings from comparable underground coal mines have not been presented in relation to this proposal.	Reassess impacts after undertaking field work to characterise current environmental values and condition of aquatic ecosystems potentially impacted by the project. Detail learnings on the potential impacts (by specialist aquatic ecologists) from comparable underground coal mines which are relevant to the aquatic ecosystems at the site and incorporate these in a reassessment of impacts.	Chapter 7 summarised the findings of the recent aquatic baseline and updated field assessment and impact assessment completed in 2021-2022 for the Project. The assessment reviews historical data, environmental monitoring data, associated reports including the groundwater and surface water technical assessments and completes an impact assessment. Sites selected for the survey include upstream and downstream locations for all potentially impacted creeks as well as reference sites within the Isaac River. The EIS has reviewed and revised the impact assessment and mitigation components based on the recent aquatic ecology baseline and impact assessment completed for the project during 2021-2022.

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Queensland Department of Environment and Science	1.085	Appendix D1 Aquatic Ecology Technical Report Appendix E MSES Search Results		The 2 kilometre radius search buffer for MSES is insufficient to incorporate the extent of the site disturbance, in particular linear infrastructure.	Expand the MSES search radius to include One Mile, Philips and other creeks impacted by the underground and surface disturbance footprint.	Chapter 7 summarised the findings of the recent aquatic baseline and updated field assessment and impact assessment completed in 2021-2022 for the Project. The assessment reviews historical data, environmental monitoring data, associated reports including the groundwater and surface water technical assessments and completes an impact assessment. Sites selected for the survey include upstream and downstream locations for all potentially impacted creeks as well as reference sites within the Isaac River. Updated searches were conducted which cover the addition creeks referenced within the comment.
Queensland Department of Environment and Science	1.086	Chapter 8 Surface Water Resources		Chapter 8 lacks details of how impacts to surface waters have been avoided and minimised. Proposed strategies including management, monitoring and remediation, but lack these other aspects of the impact management hierarchy.	Demonstrate how impacts to surface waters as a result of mining activities have been avoided and minimised.	The amended EIS for the proposed Project describes the Project (Chapter 3) and underground mine plan and mining methods developed and refined to avoid impacts. Potential impacts to surface waters identified in Appendix E-1 Surface Water Quality Technical Report (Section 5) are reported with appropriate management and monitoring strategies in Section 6 and Section 7 demonstrating the risks can be effectively managed, through ongoing monitoring and review of effectiveness. As part of the detailed design process, the amended EIS includes a commitment for BMA to review the mine plan based on progress of adjacent open cut mining with potential to avoid subsidence and hydrology impacts in the vicinity of Hughes Creek.
Queensland Department of Environment and Science	1.087	Chapter 8 Surface Water Resources Appendix E-1 Surface Water Quality Technical Report		Chapter 8 lacks comprehensive information on the extent and location of potential impacts to surface waters from subsidence. Further to this, there is a lack of detail about the method used in the assessment of impacts cause by subsidence and subsequently a lack of information on the likely locations of subsidence-related impacts to surface water values.	Provide a comprehensive and detailed assessment of the likely locations of subsidence related impacts and align with the details requested to be provided in a revised Subsidence Management Plan (see earlier comments.)	In the amended EIS, Section 8.5.6 and Appendix E-1 Surface Water Quality Technical Report identify a number of watercourses recognised under the Water Act flowing through the Project Site, including Boomerang Creek, One Mile Creek, Hughes Creek, Plumtree Creek, Spring Creek and Phillips Creek. Of these streams, only Boomerang Creek, Plumtree Creek and Hughes Creek intersect underground mining panels and the predicted area of subsidence following mining operations. Modelling of potential impacts of subsidence in Appendix B-2 predict stream beds of Boomerang and Hughes Creek likely subject to depressions, erosion and sedimentation due to subsidence over longwall panels. Potential impacts to geomorphology and downstream water quality are assessed in Appendix E-1, Section 5 and specifically Section 5.2.4. To mitigate these impacts, an adaptive management framework is proposed in Appendix E-1, Section 6.2, with reference to the Subsidence Management Plan presented in Appendix K-2. BMA will implement the Subsidence Management Plan to manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas.
Queensland Department of Environment and Science	1.088	Chapter 8 Surface Water Resources		The EIS does not adequately address section 3.2, 8.1.12 and 8.3.1 of the TOR. The EIS provides insufficient detailed information on downstream use of water resources. It should also assess potential impacts and develop effective mitigation measures for any identified impacts on downstream users and including assessing how any changes to stream flow, overland flow, or subsidence may impact on downstream surface waters, groundwater recharge or discharge.	The EIS must identify and describe all current and potential downstream water users that may be impacted by the project. This must include reference to existing or proposed downstream mine operations (e.g., Proposed Lake Vermont Meadowbrook Mine). This description should apply downstream to a point where any potential impacts may exist. The EIS must then assess any potential impacts on environmental values and potential downstream users, including mining, stock and domestic users, due to changes in flow regimes or water quality. Amend the EIS to include median annual flows and 50th percentile flow immediately downstream of the site for both pre-mining and post-mining circumstances.	Within the amended EIS, Appendix E-1, Section 3.3, describes the contribution of the catchment related to the Project in the context of existing surface water users downstream. The catchment of tributaries crossing the Project Site is significantly drier and less than 0.4% of the total catchment area for the Lower Fitzroy and Fitzroy Barrage Water Supply Schemes located more than 250 km downstream. Downstream of the confluence with Isaac River, downstream water users include licensed surface water allocations for agriculture uses such as stock watering and ecological, recreational and cultural purposes. Regionally, the Isaac/Connors River System also provides a potable water supply (after treatment). Accordingly, Appendix E-1, Section 3.1, has been amended to identify the environmental values of surface waters within the Project Site and immediately downstream with potential to be affected by the Project as specified in Schedule 1 of EPP (Water and Wetland Biodiversity) and published by DEHP 2011 document for the Isaac River sub-basin of the Fitzroy Basin, including: Aquatic ecosystems; Stock watering (e.g. cattle); Human consumer (e.g. of wild or stocked fish); Primary recreation (e.g. swimming); Secondary recreation (e.g. sailing, fishing); Visual appreciation (e.g. picnic, bushwalking); Drinking water (e.g. raw water supplies taken from river); and, Cultural and spiritual values (e.g. traditional customs).
Queensland Department of Environment and Science	1.089	Chapter 8 Surface Water Resources		The EIS does not provide sufficient information on the potential impacts of the project on overland flow, including changes in hydrology or mitigation of those impacts.	Amend the EIS to assess the impacts on overland flow and changes to hydrology because of the project. Identify mitigation strategies for impacts on overland flow and changes to hydrology.	Section 8.5 and Appendix E-1, Section 5, identifies potential impacts of subsidence and changed geomorphology on stream flow and overland flow. As discussed further in Section 5.2.4.1, downstream floodplains could be impacted if flow paths or overland flows drop into subsidised depressions, causing incision and gully development in locally steep terrain. Revised subsidence modelling in Appendix B-1 improves confidence in the assessment of the subsidence impacts locations and timing, indicating only minor flow paths will be affected with larger flow paths expected to continue on the original course. Impacted locations are discussed in detail and presented in Appendix E-3.
Queensland Department of Environment and Science	1.090	Chapter 8 Surface Water Resources		The EIS does not include sufficient information on the impacts of subsidence on the physical structure and function of waterways and wetlands as a result of the project.	The EIS must fully describe the impacts on topography, geomorphology, hydrology and ecology of waterways and wetlands as a result of subsidence from the project. As a minimum, the EIS must assess the potential impact of: - lowering of bed and banks - creation of in-stream waterholes - changes to local drainage patterns - incision processes - stream widening - erosion - increased overbank flows due to lowering of the high banks - tension cracking through both shallow and deeper underlying strata, (including aquifers) - root shear and loss of riparian vegetation and - changes to water quality (surface water and groundwater).	The amended EIS includes revised subsidence modelling of the optimised underground mine plan improving confidence in the spatial and temporal nature of subsidence impacts on topography, geomorphology, hydrology and ecology of waterways and wetlands. The amended EIS includes detailed assessment of potential impacts as a result of subsidence from the project with appropriate mitigation measures for: - Lowering of beds and banks (Appendix E-3) - Creation of in-stream waterholes (Appendix E-1, E-3 and D-1) - Changes to local drainage patterns (Appendix E-1 and E-3) - Incision processes (Appendix E-1 and E-3) - Stream widening (Appendix E-1 and E-3) - Erosion (Appendix E-1 and E-3) - Increased overbank flows due to lowering of the high banks (Appendix E-1 and E-3) - Tension cracking through both shallow and deeper underlying strata (including aquifers) (Appendix F-3) - Root shear and loss of riparian vegetation (Appendix C-1) - Changes to water quality (surface water and groundwater) (Appendix E-1 and F-3). Relevant mitigation and management measures are collated in an adaptive management framework based on ongoing monitoring and review in the Subsidence Management Plan (Appendix K-1).
Queensland Department of Environment and Science	1.091	Chapter 8 Surface Water Resources	Section 8.4.5	The EIS proposes that baseline surface water data collection would be undertaken over at least two years as part of REMP monitoring. A minimum of 18 data samples over two years would then be used to develop site specific WQOs for the project. The conduct of REMP monitoring is expected to have been part of the assessments included this EIS. Elements detailed in the departmental guideline: Receiving environment monitoring program guideline (ESR/2016/2399) are expected to be included in such a program. The baseline water quality monitoring program is to include field parameters listed in the department guideline: Baseline assessments (ESR/2016/1999) and reflective of the parameters relevant to the environmental values of the receiving environment and the water quality characteristics of mine affected water produced as a result of the project.	Conduct and present details of the REMP monitoring in an amended EIS that addresses the departmental guidelines: Receiving environment monitoring program guideline (ESR/2016/2399) and Baseline assessments (ESR/2016/1999). Baseline monitoring is to be reflective of the parameters relevant to the project's receiving environment and project's MAW characteristics.	Amended Appendix E-1, Section 1.3, describes the assessment methodology including identification of environmental values and definition of applicable water quality objectives (WQO) to characterise the quality of the surface water within the area (Section 4) and assess potential impacts (Section 5). For the purposes of identifying if the project has an impact on the receiving environments, a Receiving Environment Monitoring Plan (REMP) would be developed. Monitoring sites directly upstream and downstream of Saraji East Underground Mine Project will be established for each impacted watercourse as part of the REMP. This would allow for a direct comparison between upstream and downstream WQ and for the accurate evaluation of mining impact. This comparison will allow changes in water quality to be identified, providing the opportunity for quick and targeted mitigation responses as a result. Appendix E-1, Section 7.2, commits BMA to develop and implement a REMP prior to construction to monitor potentially affected waterways and assess effectiveness of management strategies in line with DES 2014 guideline Receiving environment monitoring program guideline (ESR/2016/2399). Amended Appendix F-3, Section 4.1, identifies the data sources and assesment method for identification of groundwater values described in Section 5 and applicable water quality objectives with proposed monitoring outlined in Section 7.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.092	Chapter 8 Surface Water Resources	Section 8.5.2	The potential for water transfer between Saraji East and Saraji mine water systems is raised in the EIS. It is the department's understanding that treated effluent is not currently released into the Saraji Mine MAW dams. It is also the department's understanding that Saraji Mine water may be used to supply other mines in the area. There is no discussion of the potential impacts or effects as a result of treated effluent in the process water dam on Saraji East being transferred to Saraji Mine and beyond.	Detail the potential impacts of effluent contained in the Saraji East MAW being transferred into the Saraji Mine water system and then to other mines, with particular consideration of the impacts of potential algal blooms, including in any storage impoundments. Detail the water quality criteria for export of MAW from the project.	Appendix E-1, Section 6.5 describes site water management to achieve reliability of water supply and minimise risk of flooding, uncontrolled releases and take from surface water allocations. Section 6.1 of Appendix A-2 confirms all mine water produced during the operation phase would be stored and managed through the proposed mine WMS, which has been developed to minimise the likelihood of uncontrolled spills. The purpose of the Project mine WMS is to examine and address issues relevant to the importation (of raw water), generation, use, and management of water on the Project Site. Accordingly, the Project WMS has been designed to operate self-sufficiently with the benefits of being connected to the broader BMA network to allow water sharing. Under normal operating conditions, the Project mine water system will operate independently of the existing Saraji Mine water system. However, should sufficient MAW not be available for CHPP process and dust suppression at the Project, this may be imported from the existing Saraji Mine water system, following water quality testing to confirm that water is of an appropriate quality for the intended use. Similarly, where additional water demands at the existing Saraji Mine need to be met, water satisfying water quality testing may be exported from the Project. Appropriate management of surface water resources will involve the development of a Site Water Management Plan (SWMP) to be developed during the detailed design phase. The SWMP will outline the: - Principles and objectives of Site Water Management across the project. - Outline the chemicals and contaminants of concern involved in the project - Ongoing monitoring requirements of regulated structures proposed as part of the development - Ongoing water balance modelling, - MAW containment adequacy - Pre and Post Regulatory Wet Season requirements for regulated structures A water inventory will be established for the Project with a respective Trigger Action Response Plan (TARP) that identifies excess and insufficient water inventory levels and corrective actions to prevent an impact to mine production.
Queensland Department of Environment and Science	1.093	Chapter 8 Surface Water Resources	Section 8.5.3	The EIS includes discussion of the proposed process water dam. This section notes that dam design would be confirmed during detailed design. However, insufficient information has been provided about the design of this dam and the nature of environmental releases from such a dam, in particular how releases are to be conducted. Such information is required for the assessment of impacts to surface waters and for definition of the EA conditions. Further information is required regarding the proposed drainage structures for both unplanned releases (via the spillway) and planned releases via the release point.	Amend the EIS to: - provide details on the nature and design of proposed release infrastructure, including spillway, release point, and connecting drainage channels or infrastructure. - provide the locations where such infrastructure is to be installed (including GPS locations) and figures showing how and where releases would be directed to Boomerang Creek. - provide discussion of how the release infrastructure would assist in ensuring sufficient mixing with respect to planned releases and the receiving waters of Boomerang creek. - provide details of any proposed reinforcement of banks and existing unnamed tributaries or local drainage channels relevant to releases from the process water dam.	The EIS is amended with Appendix E-2 Mine water balance now presenting detailed discussion of the proposed process water dam (PWD), including details of proposed release infrastructure, location and operation in Section 5. MAW stored in the PWD is the preferred source of water for the CHPP and dust suppression activities. The amended EIS includes the proposed release point has been included as a conservative management approach, consistent with BMA's approach to responsible water management. Should the site experience very rare to extreme rainfall conditions, in excess of the containment volume developed for each storage, BMA may utilise licensed release as a water management strategy in preference to uncontrolled discharge from MAW dams. Spillway discharges (uncontrolled) from the PWD are proposed to be directed to Boomerang Creek (GPS location), as identified in Figure 1. The preliminary consequence category assessment (CCA) has been updated as outlined in Section 2.3 to describe spillway design and crest embankment levels comprising foundation in natural sequences, trapezoidal geometry and rock pad outlet structure with armouring directed to the receiving environment (Section 5.2, Figure 22, of Appendix E-2). Should conveyance of licensed release flows be required between the rock pad outlet structure and Boomerang Creek, a drainage channel would be constructed including a liner barrier system overlaid with rock armouring to dissipate flows. If necessary, the channel will terminate in a level spreader device, to dissipate the energy of the pumped MAW, allowing discharge to Boomerang Creek in a safe, non-erosive manner (Section 5.2, Figure 23, of Appendix E-2). The ultimate configuration of the spillways is expected to be confirmed during the detailed design phase, proceeding the completion of a comprehensive CCA. As outlined in Section 5.3 of Appendix E-3, licensed release point will be operated according to conditions of the EIS for the site, including minimum flow threshold, water quality requirements, sampling, notification, observation and report, and coordination with other releases.
Queensland Department of Environment and Science	1.094	Chapter 8 Surface Water Resources	Section 8.5.3	There is insufficient information on the potential impacts from the storage of sewage effluent in the process water dam and the proposed management of the process water dam in relation to the sewage effluent component. There is the potential for high nutrient levels in the treated sewage effluent that is proposed to be discharged into the process water dam. This may result in algal blooms in the process water dam including toxic algae. Releases from the process water dam during algal blooms would have the potential to release toxic algae into receiving waterways.	Provide the following details on the process water dam as an effluent storage facility: - daily peak design capacity - treatment units and processes - locations of sewage treatment infrastructure, including storage tanks - alarm systems - wet weather storage - proposed effluent quality, including pH, biological oxygen demand, total solids, nutrients, and microbiology - monitoring programs - predicted overtopping of the dam and the potential impact of any such losses to the environment and other water users - design and management measures to prevent potential overflows from the process water dam, including to waters - measures to prevent stratification of waters within the wastewater storage facilities - measures and strategies for protection of groundwater from dam/pond storages, such as pond lining - proposed algal management (including toxic algal management), including measures to reduce water quality degradation in the storage by measures such as aeration and destratification - proposed vector management - proposed weed management - odour control Detail how the proposed sewage treatment process would comply with the department's Model Operating Conditions for ERA 63 (ESR/2015/1668).	Project description has been amended to provide revised details of sewage treatment plant (STP) and effluent management, including process water dam (PWD) as the storage facility for treated effluent - refer to amended Chapter 3 Project Description, Section 3.7.15 Mine water management. As described in Section 2.2.5 of the revised Mine Water Balance Technical Report (Appendix B-2), a sewage treatment plant (STP) will be installed to service the MIA and the construction accommodation village to treat generated sewage. Sewage will be treated by primary filtration to remove solids and disinfected to ensure it is safe to work with before being piped to the Process Water Dam. As described in Section 3.7 of the amended Appendix E-2, treated volumes and effluent from the STP will be insignificant to the volumes managed in the PWD. No irrigation to land or release offsite is proposed. Treated STP effluent will be managed in the PWD and used it for dust suppression on the Project Site. No quality restrictions have been placed on the reuse of MAW by the CHPP or for dust suppression; where potential quality restrictions may arise, blending of raw and MAW will achieve the desired quality. To prevent impacts to surface water quality, including from nutrients leading to algal blooms and aquatic weed growth. As the PWD is a regulated structures, monitoring and reporting will be required by the EA for prection of groundwater and surface water resources. A water quality monitoring and sampling program for water stored within the PWD and groundwater dewatering inventories will commence upon initial mine development.
Queensland Department of Environment and Science	1.095	Chapter 8 Surface Water Resources	Section 8.5.3	While estimates of annual effluent and sludge generated from sewage are given in Table 15.2 and 15.3 in Chapter 15, the methods used to derive these estimates are not provided. In addition, the volume of effluent that would be used for dust suppression and the volume of effluent that would be discharged into the process water dam have also not been provided.	Amend the EIS to: - provide details on how annual effluent and sludge estimates were derived for the project - provide the volume of effluent that would be used for dust suppression and the volume of effluent that would be discharged into the process water dam annually - estimate the dilution factor of the process dam water volume compared with the effluent proposed to be discharged into the dam.	Project description has been amended to provide revised details of sewage treatment plant (STP) and effluent management, including process water dam (PWD) as the storage facility for treated effluent - refer to amended Chapter 3 Project Description, Section 3.7.15 Mine water management. A sewage treatment plant (STP) will be installed to service the MIA, the construction accommodation village, and to treat all sewage generated onsite. Sewage from the CHPP area and from the washdown facilities at the mine portal will be pumped back to the MIA. The STP will be designed to provide sufficient capacity for the construction and operation workforce. Treated effluent from the STP and the WTP will be captured and stored on site at the PWD. Appendix E-2, Section 3.7, describes effluent management. A nominal treated effluent input rate of 23 m3/day has been applied to the PWD, based on a workforce of 125 equivalent persons and a 180 L/day effluent generation rate.
Queensland Department of Environment and Science	1.096	Chapter 8 Surface Water Resources	Section 8.5.3	The EIS states that treated effluent would meet a standard safe for reuse in accordance with the Australian Guidelines for Water Recycling (2006). This statement must be substantiated with additional detail on which use it would be treated for, with reference to the exact uses, treatment process, measures and WQOs targeted.	Provide exact details of the treatment and proposed microbiological 'Class' (A+, A, B, C, D) and/ or water quality objectives (e.g. for E.coli, salinity, turbidity/total dissolved solids etc) for the effluent (recycled water) where it is being reused for dust suppression or any other purposes. Demonstrate that the reuse of treated effluent (recycled water) e.g. for dust suppression would meet the environmental objectives and performance outcomes in Schedule 8, Part 3 of the Environmental Protection Regulation.	As per Section 8.5.2 of Chapter 8, treatment in the Sewage Treatment Plant will eliminate residual pathogen contaminants from wastewater to achieve a Class B standard considered suitable for industrial uses such as wash down water, as defined by the Queensland Government Public Health Regulation (2018). The Australian Guidelines for Water Recycling (NRMCC 2006) should be used as the basis for the treatment and use of treated wastewater. Treated wastewater will be discharged to the process water dam. In this way, wastewater will be captured and preferentially reused as described by the WMS.
Queensland Department of Environment and Science	1.097	Chapter 8 Surface Water Resources	Figure 8-7	The figure in chapter 8 shows that effluent from the STP would be discharged into the process water dam. The same figure (figure 3-14) in Chapter 3 does not include this component of the mine water balance. Reference to the main mine affected water dam varies (mine water dam, process water dam etc). Use consistent terminology throughout the EIS when referring to this dam.	Amend the EIS to: - update figures in all chapters and appendices of the EIS to reflect accurate mine water balance schematics e.g. amend figure 3-14 to include the effluent input from the STP to the process water (mine water) dam - use consistent terminology in text and figures to refer to the process water dam throughout the EIS.	Appendix E-1, Figure 8, and Appendix E-2, Figure 14, present a model schematic and accurate representation of the mine water balance including effluent input from the STP to the process water dam. Reference to process water dam has been updated throughout.

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Queensland Department of Environment and Science	1.098	Chapter 8 Surface Water Resources	Section 8.5.4	A complete and detailed consequence category assessment (CCA) was requested by the department in previous comments on the EIS (dated 23 December 2019). The EIS has not responded to this request, in fact, Table 8-6 from the previous EIS (version dated October 2019), which contained preliminary CCAs for the six mine affected water storages has been substituted with a table that contains generic information about how to undertake a CCA Note: CCAs are about assessing impacts of failures or releases from structures, not about the structures themselves. Consequence Category Assessments do not necessarily rely on detailed designs being available.	Reinstate the Preliminary Consequence Category Assessments in the EIS in Table 8-6. Undertake a full CCA and include the results of this in the EIS, together with proposed management actions to address identified risks.	In the Queensland regulatory context, a consequence category assessment (CCA) is required for water storages associated with ERAs that meet the definition of a structure, as described in 'Structure which are dams or levees constructed as part of environmentally relevant activities' ESR/2016/1934 (DES,2022). Appendix E-2, Section 2.3, presents the outcomes of a preliminary consequence category assessment for proposed Project dams as per guidance provided by the DES (formerly DEHP) 'Manual for assessing consequence categories and hydraulic performance of structures'(the Manual') (DES, 2016). The preliminary assessment of consequence categories has been undertaken for the following failure scenarios. - Failure to Contain – Seepage: Spills or releases to ground and/or groundwater via seepage from the floor and/or sides of the structure. - Failure to Contain – Overtopping: Spills or releases from the structure that result from loss of containment due to overtopping of the structure. - Dam Break: Collapse of the structure due to any possible cause. As per the Manual for assessing consequence categories and hydraulic performance of structures(DES, 2016), a Significant or High consequence category in any failure event category results in the application of a 'regulated structure' status to the structure being assessed. The preliminary CCA indicate a significant risk and regulated structure requirement for PWD and other industrial dams except for RWD and Underground Mine Portal Sump. Performance and management criteria for regulated structures are indicated in Section 2.3 of Appendix E-3. The CCAs for the described structures will be updated and confirmed during the detailed design phase of each structure.
Queensland Department of Environment and Science	1.099	Chapter 8 Surface Water Resources Appendix E-1 Surface Water Quality Technical Report	Section 8.5.6 Section 5.2.1	The EIS provides an estimate of the median and average electrical conductivity (EC) values of controlled releases from the process water dam and estimates of pH. Estimates of other water quality indicators have not been provided. It is unclear whether the assessment of impacts as the result of releases from the process has been sufficiently assessed, further key parameters including sulphates, nutrients, metals, and other contaminants need to be estimated and the impact of such concentrations assessed against the receiving waters.	Amend the EIS to provide further details of the estimated water quality from the process water dam - including but not limited to sulphates, suspended solids, ions, nutrients, metals, and other relevant contaminants. Provide details of how these estimates were derived.	The mine water balance (Appendix E-2) describes the mine water management system as a conservative management approach, consistent with BMA's approach to responsible water management. Consistent with accepted mine water management practices, runoff from undisturbed catchments will be diverted around the mine to reduce volumes of mine affected water generated and stored on site. Mine affected water from stockpiles, CHPP, MIA and portal sump will be transferred to the Process Water Dam. MAW stored onsite (primarily in the PWD) will be preferentially sourced for site water demands such as CHPP process demand and dust suppression. For the current scope, no quality restrictions have been placed on the reuse of MAW by the CHPP or for dust suppression. Where potential quality restrictions may arise, it is expected that the blending of raw and MAW could be conducted to achieve the desired quality. A conservative approach has been taken towards controlled and uncontrolled releases of MAW from the Project. Should the site experience very rare to extreme rainfall conditions, in excess of the containment volume developed for each storage, BMA may utilise licensed release as a water management strategy in preference to uncontrolled discharge from MAW dams. Based on process water quality from existing Saraji mining operations, the expected water quality of MAW within the PWD is likely to exceed Water Quality Objectives (WQOs) for downstream waterways. Accordingly, the licensed release is proposed to occur as event-based releases, whereby releases are only permissible during periods of significant flow. Dilution of released MAW will therefore occur by mixing with Boomerang Creek, Hughes Creek and Isaac River flows. The model results indicate that the modelled water quality concentration is highly variable, and principally influenced by the volume of water stored in the PWD. During periods of significant water storage volume (i.e. >100 ML), the modelled Salinity is generally 600 to 2,000 mg/L and the modelled Electrical Conductivity (EC) is 1,000 to 3,000 µS/cm. The results suggest that while the water quality may be poor during periods of water inventories on-site, the water quality may be suitable for potential licensed release in periods of water accumulation (subject to appropriate testing, controls and release criteria). As per Section 5.3 of Appendix E-2, coordination with proximate mines will occur, to manage the risk of concurrent releases to result in exceedances of water quality objectives in the downstream receiving environment. The coordination is expected to include existing Saraji operations and Peak Downs Mine (which maintains a licensed release point on Boomerang Creek under the relevant EA: EPML00318213).Specifically, BMA are a party to the ongoing development of the 'BHP Real-Time Forecasting System (RTFS) – Hydrologic, Hydrodynamic and Water Quality Models' (Water Technology & Deltares, 2021) which models the potential release water quality in the receiving environment for releases originating from the central mines region, including Goonyella Riverside, Caval Ridge, Peak Downs, Saraji (existing), Norwich Park, Daunia and Poirrel mines. The Project will be included in the next periodic update of the RTFS tool.
Queensland Department of Environment and Science	1.100	Chapter 8 Surface Water Resources Appendix E-1 Surface Water Quality Technical Report	Section 8.6.1 Figure 3	Boomerang Creek, as the proposed receiving waters of the release point from the process dam, already has approximately 4 release points licenced (and entered into the department's WaTERS database). Approximately 15km further downstream from the release point, Boomerang Creek flows into Hughes Creek, which has an additional 3 coal mine release points set up in WaTERS. However, no cumulative assessment is presented in regard to potential impacts of multiple releases on the environmental values of both creeks. Further, there is a lack of discussion of the assimilative capacity of such creeks to take the additional releases from the process water dam. Section 8.6.1 (Erosion and sedimentation) of Chapter 8 (Surface water) notes some of the land uses that have potential to contribute to sediment loads and turbidity stating that "given the potential for cumulative impact on stream health resulting from sediment load and turbidity, it is essential that measures be put in place to limit and control sedimentation during construction of the Project." This highlights the need for a cumulative assessment of impacts. A more comprehensive assessment of the water quality impacts to Boomerang and Hughes creeks from existing mining influences (including point or diffuse sources) is needed before the potential increased impacts from Saraji East releases can be appropriately placed into context. The water quality assessment presented does not adequately characterise the timing, duration, water quality etc. of historical discharges and their impacts on water quality and aquatic ecosystem environmental values. As an example of the type of analysis that is needed in the EIS, please see timeseries below which presents the raw data for EC at Boomerang Creek (upstream (red) and downstream (grey)). While upstream remains low throughout the dataset, the monitoring data for downstream is variable and greater than upstream. However, data from known discharge periods is lacking, and is not presented with discharge timing information (or complete datasets). Discharge period data needs to be completely presented, and accurately compared. (VIEW FIGURE (monitoring points from Figure 3, Appendix E-1) IN DES SUBMISSION)	Amend the EIS to: a) present timeseries graphs for Electrical Conductivity (EC) and other contaminants of potential concern (COPCs) and creek flow rate data for downstream and upstream surface water monitoring locations on Hughes and Boomerang Creek, separated out for upstream sites versus downstream sites (and for each creek separately). b) present EC (and COPCs) and flow indicators on the same timeseries so that it is visually clear. It should be clear whether increasing EC (or COPC) is associated with decreasing or increasing water levels and the timing of creek-specific releases from various coal mine infrastructure clearly identified. This would aid in the assessment of the extent and duration that existing mine influences are having on these creek systems. c) from data analysis discuss current as well as additional potential project impacts to aquatic ecosystems in Boomerang and Hughes Creek in detail for the main COPCs: EC, sulfate, etc. d) complete datasets are required to be presented of all historical stream monitoring for site waterways for quality and quantity, discharge events timing etc. Complete and comprehensive data must be in timeseries format with discharge periods, quality and volumes charted onto timeseries graphs of downstream water quality. e) where available any further nearfield to midfield monitoring data which may be or is collected under receiving environment monitoring programs (REMP) or other programs must be detailed and analysed in the relevant EIS chapters to ensure that risk assessment of creek stretches immediately downstream are comprehensive, and not restricted to the Isaac River (over 20 kilometres downstream).	In the amended EIS, the mine water balance (Appendix E-2) assesses a proposed release point as a conservative management approach, consistent with BMA's approach to responsible water management. Should the site experience very rare to extreme rainfall conditions, in excess of the containment volume developed for each storage, BMA may utilise licensed release as a water management strategy in preference to uncontrolled discharge from MAW dams. The expected water quality of MAW within the PWD is likely to exceed Water Quality Objectives (WQOs) for downstream waterways. Accordingly, the licensed release is proposed to occur as event-based releases, whereby releases are only permissible during periods of significant flow. Dilution of released MAW will therefore occur by mixing with Boomerang Creek, Hughes Creek and Isaac River flows. Any releases from the Project Site will be managed in accordance with licence conditions so would not be expected to cause significant impacts. The model results indicate that the modelled water quality concentration is highly variable, and principally influenced by the volume of water stored in the PWD. During periods of significant water storage volume (i.e. >100 ML), the modelled Salinity is generally 600 to 2,000 mg/L and the modelled Electrical Conductivity (EC) is 1,000 to 3,000 µS/cm. The results suggest that while the water quality may be poor during periods of water inventories on-site, the water quality may be suitable for potential licensed release in periods of water accumulation (subject to appropriate testing, controls and release criteria). Appendix E-2 presents analysis of the release into Boomerang Creek as a time series for modelled stream flow and dilution of EC concentration in Section 4. As per Section 3.3 of Appendix E-2, coordination with proximate mines will occur to manage the risk of concurrent releases to result in exceedances of water quality objectives in the downstream receiving environment. The coordination is expected to include existing Saraji Mine operations and Peak Downs Mine (which maintains a licensed release point on Boomerang Creek under the relevant EA: EPML00318213).Specifically, BMA are a party to the ongoing development of the 'BHP Real-Time Forecasting System (RTFS) – Hydrologic, Hydrodynamic and Water Quality Models' (Water Technology & Deltares, 2021) which models the potential release water quality in the receiving environment for releases originating from the central mines region, including Goonyella Riverside, Caval Ridge, Peak Downs, Saraji (existing), Norwich Park, Daunia and Poirrel mines. The Project will be included in the next periodic update of the RTFS tool. As described in the amended Appendix D-1 Aquatic Ecology Technical Report, Section 5.2.5, the release of mine affected water will afford protection to 95% of species as required for slightly to moderately disturbed systems. This level of protection is also consistent with that defined by DES (2011) for which Saraji East is located (i.e. Upper Isaac River catchment waters contain moderately disturbed ecosystems).
Queensland Department of Environment and Science	1.101	Chapter 8 Surface Water Resources	Section 8.5.7	Insufficient details of maximum embankment heights for mine water dams was provided in the EIS. This information was previously requested in comments on the EIS (submitted 23 December 2019). A new section 8.5.7 has been added which gives details about the capacity and operation of the dams but not their geometry or embankment heights.	As a minimum include details of the embankment heights for the proposed mine water dams.	In the amended EIS, Appendix E-2 Mine water balance presents detailed discussion of the proposed process water dam (PWD), including details of proposed release infrastructure, location and operation in Section 5. Updates to the preliminary consequence category assessment (CCA) outlined in Section 2.3 describe spillway design and crest embankment levels comprising foundation in natural sequences, trapezoidal geometry and rock pad outlet structure with armouring directed to the receiving environment (refer additional information provided in Section 5.2, Figure 22, of Appendix E-2). Should conveyance of licensed release flows be required between the rock pad outlet structure and Boomerang Creek, a drainage channel would be constructed including a liner barrier system overlaid with rock armouring to dissipate flows. If necessary, the channel will terminate in a level spreader device, to dissipate the energy of the pumped MAW, allowing discharge to Boomerang Creek in a safe, non-erosive manner (Section 5.2, Figure 23, of Appendix E-2). The ultimate configuration of the spillways is expected to be confirmed during the detailed design phase, proceeding the completion of a comprehensive CCA. As outlined in Section 5.3 of Appendix E-3, licensed release point will be operated according to conditions of the EIS for the site, including minimum flow threshold, water quality requirements, sampling, notification, observation and report, and coordination with other releases.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.102	Chapter 8 Surface Water Resources	Section 8.6.3 Table 8.11	The EIS provides a range of potential control actions and mitigation measures relating to impacts on surface water. For example, Table 8.11 notes potential controls that could be implemented to address potential risk associated with mine water management. However there is no clear specification of which actions are more relevant when they would be implemented	Clarify which control actions and mitigation measures would be implemented and under what circumstances to minimise impacts to surface waters.	The EIS for the proposed Project describes the Project (Chapter 3) and underground mine plan and mining methods developed and refined to avoid impacts. Potential impacts to surface waters identified in Appendix E-1 Surface Water Quality Technical Report (Section 5) are reported with appropriate management and monitoring strategies in Section 6 and Section 7 demonstrating the risks can be effectively managed, through ongoing monitoring and review of effectiveness. Mitigation measures are presented by Project phase and potential impact in Table 7 of Section 6 of Appendix E-1.
Queensland Department of Environment and Science	1.103	Chapter 8 Surface Water Resources	Table 8.11	Table 8.11 provides an assessment of the potential risk associated with mine water management. No risk assessment has been provided of the likelihood and potential control actions to address other impacts on surface water values detailed in section 8.6 including erosion and sedimentation, chemical contaminants, overland flows, subsidence, and flooding.	Provide an assessment of the potential of each impact detailed in section 8.6 and provide proposed control actions to address the relevant risks for each impact.	To understand the potential risks to surface water due to the project development, a review of the proposed operations was completed, with key risks identified for the construction and operational phase. Subsequently, mitigation(s) and management measures have been developed for each risk identified in Table 10 within Appendix E-1 Surface Water Quality Technical Report. In addition to the proposed mitigation(s) developed for the identified risks, appropriate management of surface water resources will involve the development of Plan documentation, which will be developed during the detailed design phase, including: - A Site Water Management Plan (SWMP) to manage contaminants and containment in regulated water structures. - Receiving Environment Monitoring Program (REMP) to identify potential impacts to surface waters during operation and licensed releases. - Trigger Action Response Plan (TARP) to specify corrective actions in the event of trigger exceedances. - Subsidence Management as proposed by Engeny (2022) to mitigate the potential impact of subsidence on streams and infrastructure.
Queensland Department of Environment and Science	1.104	Chapter 8 Surface Water Resources	Section 8.6.3	The capacity of the mine dam structures have been based on historical climate data, however it is not apparent that predicted future climate change for the life of the structures has been factored into their design.	Detail how predicted future changes to climatic conditions have been factored in to the capacity of the mine dam structures. Adjust the mine dam structure capacities to incorporate climate change considerations where necessary, if these have not already be factored in.	The amended EIS includes updates within Appendix E-2 Mine Water Balance Technical Report to present the probabilistic Water Balance Model (WBM) developed in to assess the proposed WMS system's performance in a range of climatic conditions, including climate change projections developed for the site location. Using the WBM, preliminary water storage capacities were calculated for each structure, such that: - Uncontrolled releases of MAW to the receiving environment are minimised - The regulated structures accommodate the ESS and DSA volumes. The modelling approach and results are described in Section 4. Historical climate data for the Project Site has been obtained from Scientific Information for Land Owners (SILO) Data Drill service (DSITI). The database consists of gridded data covering a 0.05 degree (latitude and longitude) grid. The database commenced on 1 January 1889. The database has been developed by interpolating data from the Bureau of Meteorology (BOM) recording station network. Monthly rainfall and evaporation is presented in Figure 2 and Figure 3, respectively, within Section 1.5 of Appendix E-2. Further to the draft EIS, development of climate sequences are described in Section 4.4.2 of Appendix E-2. The Biophysical Modelling (CCS) program maintained by the Queensland Government (Long Paddock, 2022) provides projections of potential future climate scenarios. he CCS data utilised comprises climate projections based on Global Climate Models (GCMs) for a Representative Concentration Pathway (RCP) of 8.5 Watts/Square Metre [W/m2]. This RCP 8.5 projections are equivalent to 4.3 degrees of warming at 2100, compared to pre-industrial levels. Overall, the developed baseline and climate change sequences suggest potential influences of lower rainfall totals and higher potential evaporation and evapotranspiration estimates on the WBM model will result in: Reduced water storage volumes within water management dams (reducing potential accumulation of water volumes, but poorer water quality); Reduced overall stream-flow in downstream water-ways (such as Boomerang Creek and Hughes Creek); Increased demand for make-up raw water supply. As per Section 4.9.8, the magnitude of the increased raw water sourced is generally minor, representing a 1-2% increase in raw water demand.
Queensland Department of Environment and Science	1.105	Chapter 8 Surface Water Resources	Section 8.6.5	Section 8.6.5 discusses the potential impacts to surface waters from subsidence. This section notes the following: 'Hughes Creek diversion will have a drop of nearly three metres [sic] into the first panel it intercepts with the potential for major instability when the channel bed responds by attempting to regrade to a more stable gradient' This statement indicates the potential for substantial impacts on waterways as a result of subsidence.	Present a revised mine plan that avoids direct subsidence or dewatering due to cracks and fissures in waterways and wetlands, or demonstrate and justify how the impacts to waterways and wetlands as a result of subsidence from the project are unavoidable. If the EIS contends that the impacts to waterways and wetlands as a result of subsidence from the project are unavoidable, the EIS must provide detailed plans and management strategies (including a TARP) to minimise, manage and remediate any potential instability in the waterways or waterbodies.	The amended EIS presents revised subsidence modelling for the optimised underground mine plan predicting the spatial and temporal progress of subsidence at 1, 2, 5, 10 and 20 years in Appendix B-2. The revised subsidence assessment provides improved estimations for predicted subsidence within impacted watercourses. As per Section 5.2.4 of Appendix E-1, Boomerang Creek is expected to be exposed to a maximum subsidence of approximately 1 m, Plumtree Creek to 1.3 m, and Hughes Creek by up to 3.4 m. These effects will initially impact water quality and quantity through increased erosion and reduced water flows due to ponding. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. REMP together with the implementation of a TARP will provide streamlined corrective actions and responses. As such it is expected that construction and operation of the proposed underground mine will have likely little impact on surface water quality in the Boomerang – Hughes Creek catchment and the Isaac River. Subsidence management plan presented in Appendix K-1, Section 5, outlines an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.
Queensland Department of Environment and Science	1.106	Chapter 8 Surface Water Resources	Figure 8-17	Indicative locations of the proposed release point and downstream monitoring points have been provided in Figure 8-17. However, it is expected that the location of such points would influence assessments of assimilative capacity of the receiving environment, proposed water quality objectives (WQOs) and receiving environment monitoring program parameters. As such, the GPS locations of release and monitoring points are required to be specified.	Provide nominal locations of the release point and downstream monitoring points depicted in Figure 8-17 – Proposed monitoring points.	A conservative approach has been taken towards controlled and uncontrolled releases of MAW from the Project. Should the site experience very rare to extreme rainfall conditions, in excess of the containment volume developed for each storage, BMA may utilise licensed release as a water management strategy in preference to uncontrolled discharge from MAW dams. Based on process water quality from existing Saraji mining operations, the expected water quality of MAW within the PWD is likely to exceed Water Quality Objectives (WQOs) for downstream waterways. Accordingly, the licensed release is proposed to occur as event-based releases, whereby releases are only permissible during periods of significant flow. Dilution of released MAW will therefore occur by mixing with Boomerang Creek, Hughes Creek and Isaac River flows. As indicated in Figure 8-1 and Appendix E-1, Figure 6, a nominal location is identified for release and monitoring downstream impacts to Hughes Creek and Boomerang Creek.
Queensland Department of Environment and Science	1.107	Appendix E-1 Surface Water Quality Technical Report	Section 1.3.1	The EIS states "Datasets used in this assessment comprise monitoring data from locations monitored as part of receiving environment monitoring programs (REMP) for Saraji Mine (SRM) and Peak Downs Mine (PDM) between 2010 and 2020, dependent on location. Most of this data was collected from downstream of the existing Saraji Mine and therefore would be similar to the existing baseline conditions of the Project Site." While surface water monitoring data collected from downstream of the existing Saraji mine is useful to collect and characterise in terms of source characterisation which can distinguish between the two different proposed EA coal mine developments (existing Saraji/Peak Downs EAs and new proposed Saraji East mining leases), it cannot be considered that this downstream data constitutes "baseline" condition for these waterways. Further, the EIS proposes that portions of the Saraji East project are to be conducted under the existing Saraji EA, with disturbance to occur between the existing upstream and downstream Saraji mine monitoring points depicted in figure 17, while disturbance to be conducted on the proposed Saraji East mining leases (that is to be part of the proposed Saraji East EA) fall after the existing downstream monitoring points of the Saraji EA. Therefore, distinction of background water quality from upstream water quality for the Saraji East mining leases is required.	Amend the EIS to distinguish between background water quality data (e.g. downstream of the existing Saraji mine) and baseline water quality data (upstream of Saraji or other coal releases from point and diffuse sources). Monitoring data that is directly downstream of coal mine releases is not considered baseline. Provide assessments of existing receiving waters quality with the distinction between background (baseline) characteristics and quality and an assessment of the upstream water quality for the Saraji East mining leases.	Best available reference sites have been selected upstream of mining impacts. Data from these sites has been assessed against EPP (Water) 2019 WQ guideline values and ANZG 2018 guideline values. Wherever recorded parameters deviated from corresponding guideline values, site specific WQOs were developed. Table 4 of Appendix E-1 details the upstream and downstream monitoring points used for comparison of monitoring data to local WQOs Monitoring of WQ parameters in potentially affected waterways (upstream and downstream of impact). The sampling sites will be described including suitability and justification. It is proposed to establish monitoring locations downstream of the project as well as background monitoring sites between the existing Saraji mine and the project site. Existing upstream locations would continue to be monitored (Figure 3) upstream of mining impacts - Boomerang - Hughes Creek catchment MP2/MP24 (PDM), MP1(SRM), MP2(SRM), MP6(SRM), MP4(SRM), MP3(SRM) data is available to demonstrate background water quality to support investigation of any downstream water quality impact.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.108	Appendix E-1 Surface Water Quality Technical Report	Section 1.3.1	The EIS notes uncertainty in the trend analysis of water quality variability from data in the Saraji Mine Trend Report 2011-2016 due to the methodology adopted in the study. However there is no detail provided on these concerns in previous REMF report methodologies and whether the uncertainty is pertaining to water quality or macroinvertebrates analysis, or both.	Amend the EIS to clarify the methodological concerns in previous REMF reports that have been raised and whether the uncertainty is pertaining to water quality or macroinvertebrates analysis, or both.	The amended EIS identifies relevant Water Quality Objectives for the Project Site using EPP (Water), local reference data and the Water Quality Guidelines (ANZG 2018). Water quality data for the catchment upstream of the Project and upstream of the existing mines was derived from additional data collected for Receiving Environment Monitoring Programs or water quality trend assessments between 2012 to 2021 representing the best available reference data at the site location. Consistent with the intent of the Queensland Quality Guidelines (DES 2022) and ANZG (2018) guidelines, the site specific WQOs are proposed for long-term improvement of waterway quality. There was a statistically significant difference for parameters between upstream and background sites (Table 8-4). Fewer exceedances of WQOs were present for sites within the actual mining extent (Turbidity, Sulphur, and Nickel, Table 8-4). This more accurately represents the conditions in the Boomerang-Hughes Creek catchment. Deviations from site specific WQOs could be due to the availability of only one stream (Hughes Creek) compared to the combined data of four water courses within the sub-regional catchment utilised for WQO development. Refer Section 8.4.4 for updated assessment of baseline and background surface water quality.
Queensland Department of Environment and Science	1.109	Appendix E-1 Surface Water Quality Technical Report	Table 15	Table 15 presents the comparison of local monitoring data to local WQOs, primarily in relation to the Environmental Protection Policy (EPP) and other relevant guidance. However, the environmental assessment depicted in Table 15 appears to include primarily downstream coal mine impacted monitoring data from the existing and historical coal mine operations. This comparison is then used to characterise the receiving environment as degraded. This comparison technique using downstream data must not be used in the derivation of local water quality objectives (or guideline). Table 15 needs to be reproduced with only existing upstream, unimpacted monitoring data for comparison to local water quality objectives. If this analysis shows that upstream, unimpacted water quality is not in line with the WQO then a process for locally derived guidelines may be warranted for certain indicators.	Amend Table 15 to include only existing upstream monitoring data for comparison to local WQOs. The characterisation of the upstream water quality must be used to justify any possible alteration to WQOs. Characterisation of these creeks in the current EIS as having "impaired water quality" needs to be fully qualified.	In preparing the amended EIS, best available reference sites have been selected upstream of mining impacts. Data from these sites has been assessed against EPP (Water) 2019 WQ guideline values and ANZG 2018 guideline values. Wherever recorded parameters deviated from corresponding guideline values, site specific WQOs were developed. Table 4 of Appendix E-1 details the upstream and downstream monitoring points used for comparison of monitoring data to local WQOs in the amended EIS.
Queensland Department of Environment and Science	1.110	Appendix E-1 Surface Water Quality Technical Report		An error has been made in the comparison of the monitoring data to the relevant guidelines and triggers. When assessing the potential environmental impact for Livestock drinking water guidelines or Irrigation triggers values it is the total metal/metalloids data which must be utilised. When comparing to the ANZG 2018 Freshwater Triggers for the protection of aquatic ecosystems, it is the dissolved metal/metalloid monitoring results which are applicable. Comparisons to livestock and irrigation guidelines have been done throughout the assessment using dissolved rather than total metals/metalloids.	Correct the relevant sections of the EIS report where comparisons to livestock and irrigation guidelines have incorrectly used dissolved rather than total metals/metalloids.	The methodology for development of sub-regional water quality objectives is presented in Appendix B of the EIS Appendix E-1 Surface Water Quality Technical Report. Influence of streamflow fluctuations and seasonal rainfall variation on physico-chemical parameters and dissolved metals have been assessed and included in the derivation of sub-regional WQOs. The 40th percentile of the dataset for each parameter (excepting 20th and 80th percentile for pH and dissolved oxygen (DO)) was used to develop sub-regional WQOs for best available reference sites as outlined in DES (2022) section 5.2.1.1. Dissolved metals (toxins) were assessed against ANZG 2018 WQOs for slightly to moderately disturbed fresh waters (protection level 95%). Where values exceeded the ANZG 2018 default guideline values, the 40th percentile or the 40th percentile of the 40th percentile was applied (QWQG 2022 sections 5.1.2 & 5.2.1.1, QWQL 2009 section 4.3.5)
Queensland Department of Environment and Science	1.111	Appendix F-1 Groundwater Technical Report	Section 5.5	While the EIS notes that "Environmental values and water quality objectives for groundwater within the Isaac River sub-basin are provided in 'Isaac River Sub-basin Environmental Values and Water Quality Objectives (EHP, 2011)", the relevant groundwater zones for the project site were not identified and the current groundwater quality was not compared to the scheduled groundwater WQOs (Table 14 of EHP 2011).	Address the following in an amended EIS: - determine the relevant scheduled groundwater zones for the site - compare the current groundwater quality with the relevant scheduled groundwater WQOs.	Amended EIS provides discussion of scheduled groundwater zones in Section 3.3.3 of Appendix F-3. The Project is partially located within a Fitzroy Basin Groundwater Zone. The scheduled groundwater WQOs for groundwater zone 34 (the closest groundwater zone which may contain the furthest down dip eastern portion of the Project) was used for the Project impact assessment. Comparison of groundwater quality against the guideline levels for zone 34 is provided in Section 5.3.9 in Appendix F-3.
Queensland Department of Environment and Science	1.112	Appendix F-1 Groundwater Technical Report	Section 5.5	The EIS concluded that groundwater associated with the alluvium is too sporadic to allow for evaluation. It appears that the definition that has been applied in the EIS may be from the Water Act 2000 and not the Environmental Protection Act 1994 (EP Act) and Environmental Protection Regulation 2008 (EP Reg). The definition of groundwater under the EP Reg is "underground water" which does not discriminate between permanent and seasonal or sporadic presence.	Amend the EIS to reflect the EP Reg definition of groundwater the EIS assessment of the environmental values (including intrinsic values) of groundwater at the site.	The amended EIS applies the regional groundwater model (Appendix F-1, Table 2-1) to characterise the groundwater flows with and without mining. The alluvium represented by Model Layer 1 is fully extensive across the model with an average thickness of 8.3 m. The base of Layer 1 is largely consistent with the previous CVM HPE version of the model, with local updates using the bore logs available for the Project area. With respect to Boomerang Creek (the creek north of the Project), the alluvium associated with the creek was set a uniform thickness of 3.75 m consistent with conceptualisation based on drill hole logs along the creek (Site 13).
Queensland Department of Environment and Science	1.113	Appendix F-1 Groundwater Technical Report	Section 5.5	The EIS concluded that groundwater is of limited value for most uses. However, the department considers that, based on the intent of the EP Act and EP Reg, groundwater quality is an intrinsic environmental value that is to be protected and must be maintained within the range of natural quality variations established through baseline characterisation.	Amend the EIS to reflect the intent of the EP Act and EP Reg that groundwater quality is an intrinsic environmental value in the assessment of groundwater values.	The EIS has been amended to state that groundwater associated with the alluvium occurs as a discontinuous and sporadic resource, which is recognised under the EP Act and Environmental Protection Regulation 2008 and is recognised to have intrinsic environmental value.
Queensland Department of Environment and Science	1.114	Appendix F-1 Groundwater Technical Report	Section 6.3 Figure 45	The EIS assessment of impacts does not adequately consider: - the potential impact of all mining infrastructure on groundwater quality, in particular in the alluvium - the impact of drawdown (2m predicted in the Quaternary/Tertiary) on the ephemeral creeks, i.e., reduction in baseflow. - cumulative impacts of drawdown on groundwater level. The existing hydrology of these ephemeral creeks must be maintained and the impact of drawdown on the hydrology of these systems must be determined.	Amend the EIS impact assessment to address the following: - the potential impact of all mining infrastructure on groundwater quality, in particular in the alluvium - the impact of drawdown (2m predicted in the Quaternary/Tertiary) on the ephemeral creeks, i.e., reduction in baseflow. - cumulative impacts of drawdown on groundwater level - the ecological, environmental and landscape values of ephemeral creeks.	Amendments to the draft EIS improve confidence in the groundwater drawdown on the ephemeral creeks; for the Quaternary alluvium, no incremental drawdown impacts predicted as a result of mining at the SEMLP (Figure 3-8) or cumulative drawdown impacts within or around SEMLP (Figure 3-14). The modelling concludes no change in surface water flows in the local creeks including Boomerang Creek is predicted due to the SEMLP. Similarly, no change is predicted to surface water flows in the Isaac River due to the SEMLP. Cumulative impacts of drawdown on groundwater level in Permian coal seams is extends 5 km east and 8 km to the north/south of the Project.
Queensland Department of Environment and Science	1.115	Appendix F-1 Groundwater Technical Report	Figure 33	The regional groundwater flow has been presented in the EIS in Figure 33. However, local groundwater flow contours must be determined and presented for each hydrogeological unit.	Determine and present local groundwater flow contours for each hydrogeological unit in the EIS.	Within the amended EIS, Appendix F-1 predicts total groundwater inflows to the Project amount to 183 ML/year on average (between 2022 and 2042) and ranging up to a peak in the order of 500 ML/year in the year 2038. Chapter 9 Groundwater includes the local groundwater flow contours for each hydrogeological unit based on the outputs for each model layer within the updated regional groundwater model – refer Appendix F-1.
Queensland Department of Environment and Science	1.116	Appendix F-1 Groundwater Technical Report	Section 7.3 Figure 46	The groundwater monitoring and sampling program is described, however, the adequacy of the proposed new monitoring locations and the coverage of groundwater monitoring bores cannot be fully assessed. All mining infrastructure and the surface water drainage features must be included on Figure 46 so that the proposed location of monitoring bores can be further assessed. No groundwater limits were proposed in the EIS. It was proposed that contaminant trigger levels, and contaminant limits could be based on the 85th and 99th percentile values. This approach for setting trigger levels and limits is not consistent with the department's guidelines and is not supported.	Amend the EIS to: - provide further details regarding monitoring locations (including GPS locations) and determine groundwater triggers and limits. - follow the methodology outlined in the Groundwater Quality Assessment Guideline (DES 2021) to determine site specific values. - assess groundwater levels on a quarterly basis at a minimum, in line with the groundwater quality monitoring. - determine groundwater quality limits and groundwater level thresholds before mining activities commence for inclusion in the EA.	The EIS has been amended to include additional monitoring bores to be established prior to Project mining activities occurring. The existing groundwater monitoring network and the proposed new monitoring locations will be augmented over time to ensure the replacement of monitoring points which are lost during mining and in response to changes to mining activities (i.e. operations or closure). The proposed monitoring bores are presented in Figure 9-16 in Chapter 9 in the EIS. The EIS has been amended to make clear that all groundwater monitoring, water level measurements and sample collection, storage and transportation will be undertaken in accordance with the procedures outlined by the DES Monitoring and Sampling Manual (2018) and the Murray Darling Basin Groundwater Quality Sampling Guidelines (1997). Groundwater level monitoring is to continue through operations and post closure. Most of the groundwater monitoring bores will have permanent groundwater level monitoring devices (automated water level loggers) installed. These data loggers compile water level data at a minimum weekly interval, with water quality sampling undertaken manually on a quarterly basis. This information has been added to the EIS. Different methods exist for the assessment of groundwater monitoring data, one of which is the use of statistical tests for the development of indicator parameter limits. However, insufficient baseline parameter values are available currently to determine limits using statistical analysis. Once sufficient (statistical) groundwater dataset is available (a minimum of 12 sample events) and assessment of statistical trends for representative parameters within each new proposed groundwater monitoring bore will be derived.
Queensland Department of Environment and Science	1.117	Appendix F-1 Groundwater Technical Report		The EIS concludes that connectivity between Boomerang and Hughes Creeks and local aquifers is unlikely. However, there is a lack of conceptual site models which fully describe the local hydrogeological units, and no presentation of pit water quality nor local groundwater trends box plot or timeseries. The EIS does not appear to include a groundwater quality assessment in terms of historical or recent monitoring from the region, nor against the relevant water quality objectives.	Provide an assessment of groundwater quality for the site, in terms of upgradient vs down gradient and over time with reference to the Groundwater quality assessment guideline (DES 2021) regarding the assessment methodologies (https://www.publications.qld.gov.au/dataset/groundwater-quality-assessment-guideline).	Appendix F-3 describes the existing groundwater regime(s) for the Project Area is based on a review of previous groundwater investigations (Section 4.1) and data obtained from the following sources: • DRDMW GWDB • Exploration drilling across the Project Area • Data from the Saraji Mine groundwater monitoring network including groundwater level measurements and groundwater quality sampling Groundwater quality is described in Section 5.3.9, with quaternary deposits assessed in Section 5.3.9.1, tertiary deposits in Section 5.3.9.2 and Permian units in Section 5.3.9.3.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Queensland Department of Environment and Science	1.118	Chapter 10 Geochemistry and Mineral Waste	Section 10.7	Mineral wastes generated by the project are proposed to be managed in accordance with the existing management practices at the adjacent Saraji Mine and the conditions of the Saraji EA. The EIS states that the existing Saraji Mine mineral waste management strategy would be refined to accommodate the project and would adopt a range of general practices. The EIS also states that no additional mitigation is required outside of existing waste rock management practices. The EIS does not however describe the existing management practices at Saraji Mine to enable an assessment of this approach. The EIS also does not detail the location of Saraji's existing in-pit spoil dumps where rejects/tailings from the project would be disposed. The frequency or locations for monitoring potential drainage/seepage water from in-pit spoil dumps is also not provided in the EIS. Without this information it is not possible to assess the potential impacts and their management from mineral waste generated by the project.	Amend the EIS to: - Identify and describe in detail the mineral waste strategy for the project including the existing management practices and strategies at Saraji Mine and a summary of the relevant conditions of the Saraji Mine EA and any proposed relevant draft amendments to the Saraji Mine EA conditions. - Provide details of waste management monitoring programs at Saraji Mine. - Include a waste management plan that describes waste rock and coal rejects management for the project and describe any updates to existing Saraji Mine waste management plans that may be required as a result of the tailings/rejects and waste rock from the project being deposited in-pit at Saraji Mine. - Justify why additional mitigation beyond existing waste rock management practices at Saraji Mine is not proposed for the project. - Provide further details on the waste minimisation and monitoring plan referred to in the EIS and clarify if the plan is proposed for the project or is being currently implemented at Saraji Mine.	The EIS has been amended for Chapter 10, section 10.4.2 to recognise the existing Saraji Mine waste management practices for waste rock and coal rejects from the CHPP. Rejects from the CHPP rejects bin are transferred by truck within the mining lease and deposited with waste rock within the existing Saraji Mine in-pit spoil dumps, away from final landform surfaces as per current approved practice. Section 10.4.2 also notes that waste management at the mine is in accordance with existing approved EA reference: EPML00862313 as documented within the Waste Management and Minimisation Plan. Chapter 10, section 10.7.4 details how the existing waste management strategy will be refined to accommodate the Project and details what general practices will be adopted. In the amended EIS, Chapter 10, section 10.7.6 details the mineral waste performance outcomes to be adopted by the Project, noting performance against these outcomes on the Project will also be monitored. Chapter 10, section 10.7.1, recognises the waste management hierarchy and opportunities for waste rock with properties suitable for engineering purposes to be re-used for other purposes. In instances where waste rock properties are unsuitable for engineering and construction purposes, this waste rock will be deposited within in-pit spoil dumps established as part of the existing mineral waste management system in accordance with existing approved management practices. The amended EIS provides additional detail within Chapter 10, section 10.7.2, to describe how coal rejects from the Project will be disposed within existing in-pit spoil dumps at Saraji Mine in accordance with existing practices. Section 10.7.4 notes how the existing mineral waste management strategy will be updated to account for the disposal of reject and waste rock material into in-pit dumps. Further details on the waste minimisation and monitoring plan are provided in Chapter 10, Section 10.7.4. The EIS amendment in Chapter 3, SEcton 3.9 and 3.10, outline Project interactions with Saraji Mine and commits BMA to future amendment to the Saraji EA to accommodate mine waste and other interactions. Chapter 10, section 10.8 details that no residual impacts have currently been identified that require additional mitigation, while 10.7 also notes that no additional mitigation is required outside of existing waste rock management practices.
Queensland Department of Environment and Science	1.119	Chapter 10 Geochemistry and Mineral Waste		The EIS does not detail the location of Saraji's existing in-pit spoil dumps where rejects/tailings from the project would be disposed. The frequency or locations for monitoring potential drainage/seepage water from in-pit spoil dumps is also not provided in the EIS. Without this information it is not possible to assess the potential impacts and their management from mineral waste generated by the project.	Amend the EIS to provide additional details on rejects disposal including: - the location and placement of rejects, including if reject disposal areas would be recorded via map and or GPS measurements - if rejects would be placed away from groundwater and surface water resources - if rejects or waste rock would be stockpiled either on the project site or at Saraji Mine prior to placement in-pit and any proposed containment systems	The EIS amendment in Chapter 10, section 10.7.3, presents an analysis to demonstrate the sufficient disposal capacity is available for the Project mine waste within the existing approved Saraji Mine spoil dump. Figure 10.2 shows the proposed rejects emplacement within the existing spoil dump location, while Figure 10.3 shows the remaining spoil dump capacity available for capping materials.
Queensland Department of Environment and Science	1.120	Chapter 10 Geochemistry and Mineral Waste	Section 10.4.3	The EIS states that it an estimated 40Mt of mineral waste would be generated, whilst Appendix G states the volume of coal rejects and dewatered tailings would be up to 75Mt over the project life.	Clearly describe the volume of mineral waste proposed to be generated by the project.	For the purpose of assessing the scenario of 110 Mt over 20 years, Chapter 10 has been amended to apply an extrapolated mine waste volume based on Appendix G Geochemistry Technical Report (RGS , 2012), which assesses a maximum underground mining plan of 75 Mt based on 3 Mt per annum for 25 years, based on 17 Mt per annum production rate. Chapter 10, Section 10.7.2, details the project is expected to generate 28 Mbcm of rejects throughout the entire production period.
Queensland Department of Environment and Science	1.121	Chapter 11 Air Quality and Greenhouse Gas Appendix H-1 Air Quality Technical Report	Section 11.3.1 Section 4.1	Air emissions from the construction activities were not modelled despite the TOR requiring estimates of air impacts from the construction and operation phases of the project. The dust emission inventory of TSP, PM10 and PM2.5 and impact assessment modelling were only conducted for the operations phase of the project. The EIS states that the main pollutant of concern during construction would be the generation of dust associated with heavy vehicle movements, land clearing, and wind erosion. With the construction of the mine entry portal, conveyor, and CHPP occurring at already disturbed areas within the Saraji Mine mining lease, the generation of dust associated with these activities were considered to be immaterial compared to other localised activities such as Saraji Mine, Peak Downs Mine and Lake Vermont Mine. Therefore, estimates of dust emissions associated with the construction phase of the project were not undertaken. Instead, the dust management strategies are discussed in the report. In order to understand the relative scale of impact on air quality from the construction activities of the project, a dust emissions inventory of the construction phase of the project must be provided.	Provide the dust emission data of the construction phase of the project and compare against the operation phase of the project in order to understand the relative magnitude of the impacts .	With the exception of the Project accommodation village, the balance of Project related construction will occur in areas that are already disturbed with the Saraji Mine ML and are not expected to be more intense than existing uses. The EIS has been amended in Chapter 11 based on Section 4.4.1 of Appendix H-1 Air Quality Technical Report, which compares estimated emission rates due to wind erosion from the construction village area and existing open cut mines within the study area to demonstrate the relative magnitude of emissions. This analysis shows the emissions from the construction village area are negligible when compared to the other sources (les than 0.1%). Due to the expected low impact, the short timeframe of the construction phase, and the availability of effective mitigation measures as described in Section 11.6.1, construction has not been considered further.
Queensland Department of Environment and Science	1.122	Chapter 11 Air Quality and Greenhouse Gas Appendix H-1 Air Quality Technical Report	Section 11.3.1 Section 4.5	There is an error in the estimation of dust emissions. A summary of the dust emission estimates for the project's typical operating conditions and upset conditions were presented in Table 6 and Table 7 respectively (Appendix H-1). For the transport of excess ROM coal to Saraji CHPP, the dust control efficiency of 75% (level 2 watering) and 50% (level 1 watering) was assumed for the two scenarios. However, the TSP, PM10 and PM2.5 emission values presented in Tables 6 and 7 are the same. This indicates an error in the data presented in these tables.	Check the emissions data presented in Table 6 and Table 7 and provide the correct dust emission rates.	The correct dust emission rates are presented in Appendix H-1 Air Quality Technical Report, now Table 7 and Table 8. The relative emission rates of TSP, PM10 and PM2.5 now correctly reflect the different level of control assumed in the different scenarios.
Queensland Department of Environment and Science	1.123	Chapter 11 Air Quality and Greenhouse Gas	Section 11.5.1	An ambient air monitoring program was not provided including the link to Saraji Mine air quality management. Section 11.5.1 discusses the dust dispersion modelling exercise which indicates that the project has the potential to exceed the PM10 and PM2.5 objectives from EPP (Air). The EIS must include an ambient air dust monitoring program with dust deposition and PM10 monitoring, in order to understand the effectiveness of the proposed dust mitigation measures. The data collected from this monitoring program can be used to improve dust mitigation strategies of the mine operations at Saraji Mine and Saraji East and ensure protection of environmental values. No monitoring information has been provided for Saraji or Saraji East, including existing data sets and no monitoring locations (existing or proposed). The EIS suggestion that a monitoring program would be implemented post approval is not supported.	Provide details of the ambient air monitoring program with dust deposition and PM10 monitoring that would be employed for the mitigation of adverse air impacts for mine activities at Saraji Mine and Saraji East. The air quality monitoring program must address at least the following: - sampling practices, procedures and parameters for contaminant testing - selection of sampling locations to demonstrate that samples collected would be representative of the air quality of the area - frequency of sampling to be undertaken at each location including the number of samples to be taken, sampling period/duration continuous or semi-continuous sampling - meteorological data collection including at least the wind speed and wind direction during the air quality monitoring program at the monitoring locations. - include existing monitoring locations and data from Saraji Mine and include proposed monitoring locations for Saraji East.	As per the draft EIS, the air quality monitoring program for the Project will include the use of a continuous dust monitor to monitor PM10, and an automatic weather station to record meteorological conditions at ground level. A temperature inversion tower will also be considered for the Project to allow measurement of meteorological conditions at height. The amended EIS commits BMA to detail a proposed air quality monitoring program, to be developed prior to construction. PM10 sampling locations will be finalised at this time, with reference to consultation with stakeholders, site access requirements and relevant Australian Standards for siting of monitors. Locations will be selected to be representative of the area. Meteorology will be measured at the Project CHPP (see Table 20 Appendix H-1)
Queensland Department of Environment and Science	1.124	Chapter 11 Air Quality and Greenhouse Gas	Section 11.5.1	The modelling for PM2.5 does not appear to have considered different operating scenarios. Therefore, the results presented are only for the typical operating conditions. Chapter 11 discussed that water constraints could lead to upset conditions, as the dust management measures proposed for the site rely on water variability.	Provide modelling results for PM2.5 air contaminant concentrations under upset conditions to understand the worst case scenario impacts of the project.	Relative to the appropriate criteria, the predicted PM10 impacts are larger than those for PM2.5, therefore the scenario modelling has focused on PM10. As PM2.5 is assumed to be proportional to PM10 (at a very conservative rate of 20%), the change in emissions, and therefore impacts, will also be proportional.
Queensland Department of Environment and Science	1.125	Chapter 11 Air Quality and Greenhouse Gas Appendix H-1 Air Quality Technical Report	Section 11.6 Section 5.1.2	The modelling results for the project only (in isolation) showed exceedance of PM10 (24-hour average) above the air quality objectives at the sensitive receptors, under both modelling scenarios (see Table 9 of Appendix H). The adopted PM10 background concentration from Table 5 is 24.7 µg/m3 (24-hour average) or 49% of objectives and 22.8 µg/m3 (annual average) or 91% of objectives. This indicates that the assimilative capacity of the airshed is about 51% and 9% of the criterion for 24-hour and annual average PM10. By adding the background PM10 concentration of 24.7 µg/m3, the cumulative 24-hour concentrations at receptor Saraji Homestead 2 under typical operating condition is 87.4 µg/m3, which is much greater than the air quality objective of 50 µg/m3. The cumulative annual average PM10 concentration is also expected to exceed the air quality objectives at the sensitive receptors. It is therefore not clear how the project would comply with the EPP (Air) objective as the PM10 concentration exceeds the EPP (Air) objectives.	Detail how the EPP (Air) objective would be achieved by monitoring, auditing and reporting and how appropriate corrective actions would be implemented during all phases of the project.	The revised modelling for the Project indicates that, in isolation, the Project is predicted to comply with all air quality objectives. The cumulative assessment shows that infrequent implementation of additional dust management strategies (i.e. in excess of BAU) may be required to be implemented during adverse conditions, in order for the Project to manage its dust impacts at the nearest assessment location. Section 6.2 in Appendix H-1 presents the options that are available to achieve compliance. The Air Management Plan, to be developed prior to construction, will include detail on monitoring, auditing and reporting.
Queensland Department of Environment and Science	1.126	Chapter 11 Air Quality and Greenhouse Gas Appendix H-1 Air Quality Technical Report	Section 11.6 Section 5.3	A large number of mines are located within close vicinity of the proposed project. There was no site-specific ambient air quality monitoring data presented for the project site. Simulating background concentration from the nearby mining operation is complicated due to the unavailability of the emission data. Moranbah's air quality monitoring station data was proposed as representative of the background concentrations (see Table 5 of Appendix H). However, estimates of the cumulative impacts at the sensitive receptors were not provided in the EIS.	Estimate the cumulative ground level concentrations at the sensitive receptors by incorporating the adopted background concentrations.	The EIS has been amended to present further assessment of cumulative air quality impacts. Section 5.3 of Appendix H-1 Air Quality Technical Report presents a cumulative assessment that incorporates ambient monitoring as well as modelling of other mining operations (Saraji Mine and Peak Downs Mine). Section 5.3.1 compares emissions and Section 5.3.2 presents cumulative impacts based on dispersion modelling, in terms of predicted additional exceedances above a modelled baseline. The analysis shows less than one additional exceedance per year is predicted at all receptors, averaged over the life of the mine.
Queensland Department of Environment and Science	1.127	Chapter 11 Air Quality and Greenhouse Gas Appendix H-1 Air Quality Technical Report	Section 11.6 Section 6	Section 11.6 states that an air management plan would be developed. Dust management strategies and mitigation options were also discussed for the construction and operation phase of the project. As an example, for conveyors three options were discussed: partial or full enclosure, belt scrapers, water sprays/floggers. However, these are options and there is no indication of the final dust mitigation measures that would be implemented.	Identify and justify the mitigation measures that would actually be implemented for minimising the dust impact on the receiving environment. Include commitments in the list in Appendix O.	The amended EIS provides additional detail on mitigation measures adopted to manage dust emissions for the Project are: watering of haul roads at a rate of more than 2 L/m2/hour (level 2 watering), water sprays during crushing, water sprays on stockpiles (including stacking and reclaiming), and the use of u-shaped conveyors. These have been included as commitments in Appendix O.

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Queensland Department of Environment and Science	1.128	Chapter 11 Air Quality and Greenhouse Gas	Section 11.6	It is not clear whether a power generation unit would be installed onsite during the construction and operation phase of the project. If there is a possibility that a power generation unit would be used during the construction and operation phases, then information on fuel type, stack height, exit velocity and release of pollutants must be provided in the EIS.	Confirm whether or not a power generation unit(s) would be used during the construction and operation phases. The EIS must provide the following information for any proposed power generation unit: - type of fuel used for the power generation - expected pollutant concentrations and mass emission rates, and, - stack height and gas exit velocity.	No power generation unit is required for construction or operations phases.
Queensland Department of Environment and Science	1.129	Chapter 11 Air Quality and Greenhouse Gas		The management of spontaneous combustion including the mitigation measures is not discussed in the EIS. This must be addressed in the EIS as spontaneous combustion events at the coal stockpile have the potential to release smoke, volatile organic compounds and odour which can cause environmental nuisance and reduced visibility. Prolong inhalation of smoke generated as a result of spontaneous combustion of coal can also create adverse health effects.	Demonstrate and detail how the potential for spontaneous combustion of coal at the underground run of mine (ROM) coal stockpile and other areas would be minimised.	The amended EIS provides additional detail on management of spontaneous combustion is described in Chapter 20 Hazards, Health and Safety, including measures to minimise the risk of above ground and underground spontaneous combustion. Underground coal combustion will be mitigated by providing appropriate ventilation. Additional atmospheric and leakage monitoring will also be applied.
Queensland Department of Environment and Science	1.130	Chapter 11 Air Quality and Greenhouse Gas		There is no information on flare management. To ensure a safe working environment in the underground mines, methane gas extraction and flaring would be required for the project. Flaring of the drained gas would also reduce greenhouse gas emissions. It is not clear how may flares would be installed and what would be the flare stack height. Smoking may result from combustion, depending upon waste gas components and the quantity and characteristics of combustion gases. As a best practice, the flare design must comply with the requirements of USEPA code of Federal Regulations 40 CFR 60.18 and CFR 63.11. NSW EPA Protection of the Environment Operations (Clean Air) Regulation 2010 also specify flare related conditions such as "No visible emission other than for a total period of no more than 5 minutes in any 2 hours" https://legislation.nsw.gov.au/view/pdf/asmade/sl-2010-428	Detail the proposed methane gas flaring system and provide the following information: - number of flares expected to be installed for the project - the flare stack height and locations - flare minimum methane destruction efficiency - flare compliance with the requirements of USEPA code of Federal Regulations 40 CFR 60.18 and CFR 63.11 and NSW EPA Protection of the Environment Operations (Clean Air) Regulation 2010.	The number and locations of gas flares will depend on the beneficial use opportunities and incidental mine gas surface infrastructure installation option progressed. At least one main central flare will be required. The stack height will be determined at this time. The flare(s) will comply with the requirements of USEPA code of Federal Regulations 40 CFR 60.18 and CFR 63.11 and NSW EPA Protection of the Environment Operations (Clean Air) Regulation 2010 and will therefore have a negligible impact on air quality.
Queensland Department of Environment and Science	1.131	Chapter 14 Transport	Section 14.5	The EIS has assumed that 10 percent of the workforce would be sourced locally, and 90 percent assumed fly in fly out (FIFO).	The EIS must also provide an alternative traffic generation assessment for during construction and operational phases for drive in drive out workers.	The assumption that 10 percent of the workforce would be sourced locally, and 90 percent FIFO is appropriate as it assumes the worst case scenario.
Queensland Department of Environment and Science	1.132	Chapter 15 Waste Management	Section 15.3.3 Section 15.4	Tables 15.2 and 15.3 set out waste generation (including quantities) and management strategies for the construction and operational phases of the project. The management strategies for the different waste types (recycling, regulated wastes, general etc) are stated in general terms but lack information on: - location of waste facilities - potential transportation routes - capacities of facilities to receive project waste over the life of the project	Provide further details about the locations of regulated waste facilities, offsite recycling facilities and authorised waste facilities, including potential transportation routes for the waste streams. Detail if the above facilities have the capacity to receive the waste for the life of the project.	Chapter 15 of the EIS provides an assessment of regional waste facilities. Table 15.1 presents locations of waste management facilities with potential to be used by the Project. Section 15.3.3 has additional wording addressing the capacity of these facilities: "IRC's waste management facilities are designed and operated in alignment with the Isaac Waste Management Strategy 2020-2025, which was developed in consultation with mining sector. Early consultation with IRC on Project related resource recovery and anticipated waste disposal volumes during construction and operation have confirmed that the Project is not expected to overburden the existing and future capacities of the Isaac region waste management network". And Section 15.2.3 "The Isaac Waste Management Strategy 2020-2025 (IRC, 2020) provides long-term planning and management strategies to meet the waste management demands of the Isaac region recognising the influence of commercial waste contribution and Queensland waste levy. Through the strategy, IRC recognise the importance of maintaining at least 10 years of landfill life for waste disposal security of the region". Chapter 15 (Waste) includes discussion of potential transport networks in Section 15.5.3: "The transportation of waste removed from site will utilise the existing road network in the local area, which includes parts of Dysart-Moranbah Road, Peak Downs Mine Road, Peak Downs Highway and Lake Vermont Road. Project impacts on traffic and transport conditions are further discussed in Chapter 14 Transport and Appendix J-1 Traffic and Transport Impact Assessment."
Queensland Department of Environment and Science	1.133	Chapter 15 Waste Management	Section 15.4.3	The EIS lists some types of wastes expected to be generated during decommissioning, however quantities and management strategies are not described. Project decommissioning and rehabilitation would occur on a staged basis over several years prior to final closure. The EIS does not describe how treated effluent and biosolids would be managed over these phases.	Provide additional details of all waste expected to be generated, including expected quantities and management strategies for the life of the project, including the decommissioning and rehabilitation phases.	Section 15.4.3 of Chapter 15 (Waste) has been updated to include Table 15.4 to detail the expected waste types and quantities to be generated during the Project decommissioning and rehabilitation phase, as well as the proposed management strategies.
Queensland Department of Environment and Science	1.134	Chapter 15 Waste Management	Section 15.5.1	The EIS refers to a waste minimisation and monitoring plan but provides limited details of the content and whether this plan already exists for Saraji Mine.	Provide further details on a waste minimisation and monitoring plan and clarify if the plan is proposed specifically for the project or is being currently implemented at Saraji Mine.	The reference to a Waste minimisation and monitoring plan is incorrect and a correction is included in the revised Chapter 15 (Waste). Section 15.5.1 of Chapter 15 (Waste) of the EIS states a Project-specific Waste Management Plan will be developed to align with EA conditions and the interface with the existing waste management framework in place at the Saraji Mine.
Queensland Department of Environment and Science	1.135	Chapter 20 Hazards Health and Safety	Section 20.6.2	The EIS defers a full assessment of risks associated with the decommissioning stage to be undertaken in the last years of the operational phase.	Describe the potential risks to people and property that may be associated with all stages of the project, including the decommissioning stage.	Project decommissioning is introduced in Section 3.8 and risks considered through impact assessments in Chapter 4-20, with Appendix K-1 Rehabilitation Management Plan detailing closure and rehabilitation requirements.
Queensland Department of Environment and Science	1.136	Chapter 22 Cumulative Impacts	Section 22.4.3 Section 22.4.4 Table 22.1	Table 22.1 does not list an existing mining operation (Lake Vermont open cut mine) and one proposed mining project (Lake Vermont Meadowbrook Project – EIS in preparation) adjacent to the proposed mining project. The EIS must describe and assess the how these projects (both individually and in combination with the effects of other projects) would contribute to the potential cumulative impacts with the proposed project.	Amend the EIS to incorporate the existing Lake Vermont open cut mine and the adjacent proposed Lake Vermont Meadowbrook Project (EIS in preparation) into the cumulative impact assessment. Describe and assess the how these projects (both individually and in combination with the effects of other projects) would contribute to the potential cumulative impacts of the proposed mining project, including but not limited to, surface water resources (including subsurface flows), groundwater (including drawdown), aquatic ecology, air quality (including greenhouse gas emissions), noise and land resources.	Table 22.1 has been updated to include the Lake Vermont - Meadowbrook Project as this project has been considered within the groundwater modelling assessment (Section 22.4.4) and air quality assessment (Section 22.4.6).
Queensland Department of Environment and Science	1.137	Appendix O Summary of Commitments	General	The EIS contains many qualifiers such as "wherever possible", "where practical", "wherever this is safe to do so" in relation to mitigation measures. Project commitments for many matters in the EIS are vague and need to be more specific and quantifiable to enable an assessment of the acceptability of the project.	Amend the commitments in the EIS to be specific and measurable and remove unnecessary qualifiers.	The EIS has been reviewed and amended to remove unnecessary qualifiers instead making commitments to conditions in accordance with streamlined model Environmental Authority conditions, similar conditions or specific and quantifiable mitigation measures and monitoring to enable assessment of acceptability of the Project.
Queensland Department of Environment and Science	1.138	Appendix O Summary of Commitments	General	The commitments provided in Appendix O-1 are not sufficiently clear to identify which are applicable or could be made into conditions under the Saraji East EA application/relevant to the Saraji East mining leases. Additionally, the department requires clear distinctions between potential impacts for activities proposed to be conducted under the Saraji East EA application and those that are to be conducted under the existing Saraji EA.	Provide draft environmental authority conditions for the proposed Saraji East activities. The following must be included: - Identification of the total areas and descriptions of all prescribed environmental matters for Saraji East. - Location of the proposed water release point (GPS co-ordinates). - Location of upgradient (in addition to downgradient) and downgradient groundwater monitoring points (GPS co-ordinates and target strata). - the location of other upstream and downstream monitoring and extents of impact to provide clear identification of any potential impacts from activities conducted within the tenure boundaries of the Saraji East EA and to identify the success of mitigation and management measures (including GPS coordinates where relevant). Provide any draft amendments to the existing Saraji mine EA that would be required for the new Saraji East mine to be constructed, operated and rehabilitated as proposed or justify in detail why an amendment is not required to accommodate the activities on the Saraji Mine ML as a result of the project.	Through the EIS (Chapter 3, Section 3.10), BMA commits to comply with conditions of approval authorised by a Project-specific Environmental Authority (EA) for underground mining. The EA will authorise mining activities and ancillary activities that are environmentally relevant activities (ERA) under Schedule 2A and Schedule 2 of the Environmental Protection Regulation 2008. The ERAs proposed to be undertaken as part of the Project include: - resource activity ERA 13 – mining black coal - ERA 8 – Chemical storage - ERA 31 – Mineral processing - ERA 63 – Sewage treatment. The EA will impose environmental management conditions on the proposed mining activities on the relevant ML and outline the environmental management requirements BMA will comply with related to regulated structures, water and waste management, monitoring and reporting. Draft EA conditions are not presented for the proposed Project activities, however will be expected to align with streamlined model conditions and support interactions with EA authorising adjacent mining activities operated by BMA. The existing adjacent Saraji Mine currently operates under EA Permit No. EPML00862313. Where consequential changes are proposed to activities and infrastructure on Saraji Mine tenure (transfer of mine water or waste), where required, BMA will make an application for amendment to the existing Saraji Mine EA Permit: EPML00862313. No change in annual product tonnage output or new ERAs are anticipated on Saraji Mine tenure.
Queensland Department of Environment and Science	1.139	Appendix O Summary of Commitments	Ponding of vegetation	No commitment has been provided regarding the management of ponding of vegetation over subsidence areas.	Provide a commitment regarding the management of ponding of vegetation that is consistent with the proposed mitigation and management activities detailed in the EIS and that considers the above comments and recommendations regarding ponding as a result of the activity.	As part of the amended EIS, surface water impacts associated with subsidence ponding were assessed by Appendix E-4 Conceptual Ponding Assessment (Engeny, 2023). Over life of mine, the ponding areas will develop gradually in parallel with underground mining - as described by Figure 6 and 7 of Appendix K-2 Subsidence Management Plan. Appendix K-2 Subsidence Management Plan risk assessment in Table 7 identifies vegetation dieback or changes to vegetation community structure if existing vegetation cannot tolerate inundation caused by ponding or subsidence impacts, and corresponding controls. Key subsidence management strategies for ponding are detailed in Section 4.1.1. Early detection of change in vegetation communities will identify unforeseen decline of vegetation condition or extent of canopy dieback for investigation and mitigation by other measures proposed in a Trigger Action Response Plan. Further management may involve revegetating the ponding areas with species that are tolerant of inundation; and, based on the case-by-case assessments, otherwise installing permanent drainage channels to divert water around/through the ponding areas only if assessed as necessary and if determined to incur less impacts than the free draining scenario.

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Queensland Department of Environment and Science	1.140	Appendix O Summary of Commitments	Subsidence Management Plan reporting	Section 1.5 of the Subsidence Management Plan notes that ongoing reporting would be conducted during the operation of the mine, in accordance with the EA and the plan. Appendix O does not include commitments around reporting following implementation of management measures and their monitoring under the Subsidence Management Plan.	Provide commitments regarding reporting of management actions and monitoring of their outcomes under the Subsidence Management Plan.	As part of the EIS amendment, Appendix K-2 Subsidence Management Plan details internal reporting to be carried out to maximise the efficiency of BMA's rehabilitation activities and external reporting to meet the requirements of the EA. Reporting will be completed after completion of each subsidence monitoring event. The monitoring data will be compiled in the site's monitoring database for internal reporting purposes. Monitoring will be carried out in stages designed to mirror the development of the mining areas. Reporting will occur annually or in accordance with the Project EA. Reporting on subsidence rehabilitation activities and monitoring will also be refined and aligned as part of the development of the future Progressive Rehabilitation and Closure Plan (PRCP).
Queensland Department of Environment and Science	1.141	Appendix O Summary of Commitments	Commitment 84 and 85	Commitments relating to the implementation of the Rehabilitation Management Plan need to adopt SMART principles. The commitments lack specificity as to the actions to be undertaken under the management plan and do not sufficiently address the risks identified in Table 5 of the Rehabilitation Management Plan and elements and actions of the Management Plan.	Provide additional commitments that address the identified risk associated with disturbance activities as detailed in Table 5 of the Rehabilitation Management Plan and the elements and actions proposed in the management plan. Commitments relating to the Rehabilitation Management plan must be written in accordance with SMART principles.	Within the amended EIS, Appendix O-1 Summary of commitments identifies BMA's commitment to develop a Progressive Rehabilitation and Closure Plan (PRCP) for the Project for submission to the DES for approval prior to construction commencement (Commitment 14). Areas significantly disturbed by mining activities will be rehabilitated to a stable landform with a self-sustaining landcover or to a condition where maintenance requirements are consistent with an agreed post mining land use (Commitment 15). Rehabilitation will be undertaken progressively with the mining sequence in accordance with Appendix K-1 Rehabilitation Management Plan. Prior to construction and following the approval of the PRCP, the Appendix K-1 Rehabilitation Management Plan will be reviewed and updated as needed (Commitment 16).
IESC	2.001	Overall	N/A	The IESC recognises that BM Alliance Coal Operations Pty Ltd (BMA) has a long association with the site, where the existing Saraji Mine has been in operation since the early 1970s. Associated with this history is an in-depth understanding of environmental assets in the region. Noting this, the IESC considers that additional justification and evidence is required to validate a number of assertions made within the Environmental Impact Statement (EIS) as outlined below.	N/A	Response has been provided against the individual submission items.
IESC	2.002	Chapter 9 - Groundwater	N/A	Key risks from the proposed project primarily relate to mining-induced ground movement, which is predicted to cause surface cracking and near-surface ground movement, increased regional groundwater drawdown, as well as potentially alter groundwater-surface water interactions.	N/A	To assess risks from the proposed project, the updated regional groundwater modelling presented in Appendix F-1 of the draft EIS comprises two different fracture zones based on the subsidence modelling findings: - < 300 m above target D-seam, shear cracking 30-70 m (50 m) below ground level; and - > 300 m above target seam, fractured zone 30-50 m (50 m) above the Harrow Creek seam (H-seam) and shallow tension cracks up to 15 m below ground level. On this basis, modelling concluded groundwater drawdown due to the SEMLP does not occur in the alluvium, occurs in the regolith above the northern SEMLP panels where the model predicts the regolith is saturated and, in Permian coal seams, is limited to the west due to coal seam sub crops/existing open pit mining, and extends a maximum of 5 km east and 8 km north and south of the SEMLP. No change in surface water flows in the local creeks including Boomerang Creek is predicted due to the SEMLP. Similarly, no change is predicted to surface water flows in the Isaac River due to the SEMLP.
IESC	2.003	Chapter 9 - Groundwater	N/A	To assess subsidence impacts on water resources, the proponent has developed a geomechanically model, extending from the surface to 800 m below ground level (mbgl), over a 5-km east-west and 11-km north-south domain. While this general approach appears appropriate, due to the nature of the modelling, the IESC considers the predictions to be of relatively low confidence. It is unclear whether model predictions have been compared with empirical data from other sites in the Bowen Basin and alternative predictive methods.	A peer review of this additional work should be undertaken.	A peer review has been completed and is presented in the EIS as Appendix F-2
IESC	2.004	Chapter 9 - Groundwater	N/A	The extent and degree of interactions between surface water and shallow groundwater are poorly understood for the creeks in the project area and downstream. In part this is due to the characterisation of the alluvium appearing inconsistent within the documentation. Specifically, Quaternary sediments are noted within the current groundwater assessment as being associated with the Isaac River and Phillips Creek; however, little or no alluvium is mapped adjacent to Hughes Creek (AECOM 2019, p. 63 – 68). Justification for this assertion is required, as alluvial sands are noted by the proponent as also being associated with Hughes Creek in AGE (2012a, p. 6) and Alluvium (2019, p. 22). Ground-truthing of the extent of Quaternary sediments should be completed. The existing hydraulic characteristics of Quaternary and Tertiary sediments in the project area should be investigated. Additionally, the proponent should evaluate the potential for loss of surface flows associated with cracking and subsidence-related alteration of hydrological connectivity.	Justification for this assertion is required, as alluvial sands are noted by the proponent as also being associated with Hughes Creek in AGE (2012a, p. 6) and Alluvium (2019, p. 22). Ground-truthing of the extent of Quaternary sediments should be completed. The existing hydraulic characteristics of Quaternary and Tertiary sediments in the project area should be investigated. Additionally, the proponent should evaluate the potential for loss of surface flows associated with cracking and subsidence-related alteration of hydrological connectivity.	Within the amended EIS, additional groundwater studies to characterise the quaternary alluvium is presented in Section 5.3.5.1 of Appendix F-3 of the EIS. Hand augur bores and groundwater monitoring bores (detailed in Section 5.2.3.1 in Appendix F-3) indicate the limited alluvium along the non-perennial creeks including Hughes Creek. The existing hydraulic characteristics of Quaternary and Tertiary sediments in the project area are investigated in Section 5.3.5.3 (Quaternary) and Section 5.3.6.3 (Tertiary) of Appendix F-3. Changes in hydraulic properties due to longwall mining and surface cracking have been considered in groundwater modelling. Discussion of how the hydraulic parameter changes have been considered is provided in Section 4.3.8.4.1 of Appendix F-3.
IESC	2.005	Chapter 9 - Groundwater	N/A	The proponent has undertaken an assessment to characterise groundwater resources within the area, primarily through the development of a MODFLOW SURFACT groundwater model. This model is a refined version of the previous AECOM (2016) model, which was based on the AGE (2012a) finite difference numerical groundwater model. The calibration data are sparse and only very limited sensitivity analysis has been completed. Accordingly, there can be little confidence in model predictions of drawdown in all areas, especially in high-risk areas such as alluvium and Tertiary sediments associated with Phillips and Hughes creeks and oxbow wetlands.	N/A	To estimate potential impacts to groundwater and relevant receptors, SLR was commissioned to update the existing regulatory-accepted BMA regional groundwater model to include known local hydrogeologic features and mining operations (historic, approved and proposed) in the vicinity of the Project (refer Appendix F-1). A new model calibration was undertaken to match best the latest observation datasets. As described in Section 7, the updated SEMLP groundwater model can be classified as primarily Class 3 using the 2012 Australian Groundwater Modelling Guidelines classification system (effectively "high confidence"), with some aspects meeting the lower Class 2 ("medium confidence") criteria, which is considered an appropriate level for the SEMLP groundwater assessment context. Having been reviewed and accepted previously for other project approval applications (Section 1.1.), Appendix F-1 offers improved confidence in the in the groundwater model with better characterisation of stratigraphy (Section 2.8), sensitivity analysis (Section 5) and peer review (Appendix F-3) undertaken in support of conclusions regarding cumulative impacts of groundwater drawdown within the project area and associated with other resources projects (Section 3.4).
IESC	2.006	Chapter 9 - Groundwater	N/A	Cracking associated with subsidence is a primary uncertainty and the IESC notes use of geomechanically modelling results, Minserv (2017), to inform their assessment. The assumed height of fracturing 150 m above the mined panel should be justified. This assumption is particularly important closer to the open cut where the D24 seam depth is shallower.	The impact of this assumption should be explored in model sensitivity analysis.	The approach to the height of fracturing has been altered in the EIS. The revised approach to the height of fracturing is presented in Section 2.4.6.2 of Appendix F-1. The fracturing applied in the groundwater model in the layers above the longwall panels has been mainly derived based on the outcomes of subsidence modelling for the Project (Appendix B2 of the EIS) based on the overburden thickness above the coal seam. Two different fracture zones were developed in the model, one where overburden thickness was greater than 300m, and one where overburden thickness was less than 300m.
IESC	2.007	Chapter 9 - Groundwater	N/A	The IESC considers the model to be largely uncalibrated due to the lack of observations in coal seam layers 6, 8, 10 and 11 and only a single observation in layers 4, 5 and 9. Only a single recharge sensitivity scenario is presented.	The proponent should demonstrate the sensitivity and uncertainty of the extent and magnitude of drawdown predictions to: a. assumptions in the height of vertical fracturing (after comparative studies and geomechanically model peer review); b. the horizontal and vertical hydraulic conductivity of coal seams, interborder and Quaternary and Tertiary sediments; and c. other model parameters (e.g. recharge, storativity).	The EIS has been updated to include uncertainty and sensitivity analysis for the groundwater modelling. Section 5 of Appendix F-1 presents the sensitivity analysis performed. Section 6 of Appendix F-1 presents the uncertainty analysis which was undertaken using a Type 3 Monte Carlo uncertainty analysis. Discussion of the sensitivity and uncertainty analysis is also included in the peer review of the modelling presented in Section 6 of Appendix F-2.
IESC	2.008	Chapter 9 - Groundwater	N/A	The proponent has mapped several faults east of the site, with the Isaac Fault separating the relatively undisturbed sediments to the west from faulted sediments to the east. Whilst no known faults are mapped within the project area, the IESC notes that Boomerang and Hughes creeks appear to be located above a fault located approximately 1 km to the north-east.	A site-specific assessment should be undertaken to determine whether this fault could act as a conduit to groundwater drawdown.	Further description of structural geology, faults and structures is provided in the amended EIS at Section 9.4.1 and Appendix F-3, Section 5.2.2, including mapped trends in structural geology (Figure 19), inferred and mapped faults within the Saraji Mine footprint (Figure 20) and modelled faults (Figure 21). The faults in the Project Area comprise both normal and thrust faults with mapped trends which describe two dominant structural domains: one trends north north-west, the second trends north-south. There are three key regional northwest-southeast trending fault zones included in the BMA regional scale groundwater model (as included in Figure 21), these include: • Extending 50 km, 500 m immediately east of the Project footprint7 • Extending 70 km, 12 km to the east of the Project • Numerous shorter faults within a fault system, 15 km to the east of the Project
IESC	2.009	Chapter 9 - Groundwater	N/A	The IESC does not have confidence in predicted changes to water quality of the partially backfilled final voids. During the post-closure phase, groundwater levels are predicted to recover within the underground workings, up into the partially backfilled final voids. The proponent considers that there are likely to be limited impacts to groundwater quality but does not provide evidence to support this assertion.	The proponent should assess the quality and quantity of groundwater that may enter the final voids from recovering underground workings and how this may impact on water quality and levels within partially backfilled voids.	Closed open-cut pits, referred to as final voids, can gradually fill with water once mine dewatering operations have ceased. For the project, evaporation losses from the final voids are considered to exceed predicted groundwater inflow and hence the final voids are expected to remain mainly dry, except following prolonged heavy rainfall events. In this case, ongoing evaporation from these final voids will essentially act as long-term groundwater extractions from within the mine area. Therefore water which enters final voids will be evaporated, and will not impact on groundwater quality.
IESC	2.010	Chapter 9 - Groundwater	N/A	An independent peer review to evaluate the groundwater model has not been provided and should be undertaken as a priority in future revisions of the model.	N/A	For independent peer review of the groundwater model, Hydro algorithmics (Noel Merrick) has been engaged and findings have been provided in Appendix F-2.

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IESC	2.011	Chapter 8 - Surface Water	N/A	Limited information regarding calibration, validation, sensitivity analysis and uncertainty analysis has been provided for the surface water models, especially the 1D and 2D hydrological models and the sediment transport model. This is particularly paramount to the water balance model in which MAW storage capacities have been estimated (refer also to Paragraph 13a). Although calibration may not be possible due to insufficient data, uncertainty and sensitivity analyses should be undertaken to indicate the level of confidence in the model's predictions. As part of future updates, the IESC considers that the proponent should refer to the methodology provided by Viney et al. (2021) for modelling impacts on surface water due to coal mining.	N/A	In the amended EIS, Appendix E-3 Hydraulics, hydrology and geomorphology provides details of the 1D and 2D hydrological models and sediment transport models developed to assess the Project impacts, including data and limitations in Section 1.5. The following tasks were undertaken to calibrate the model: Determination and analysis of available rainfall, evaporation and stream flow data for input and calibration of the hydrologic model, and calibration of the hydrologic model to historical events. Stream flow data for Boomerang Creek and Hughes Creek was provided for the period 2017 to 2021, however without associated rainfall data it is not able to be used for calibration of hydrologic models. It is also unclear from the data provided whether the gauges are appropriately configured to accurately measure the high flow events typically used in a hydraulic model calibration.
IESC	2.012	Chapter 8 - Surface Water	N/A	Limited streamflow data have been provided by the proponent. Streamflow data were recorded between mid to late 2010 and June 2013 in Hughes, One Mile, Spring and Phillips creeks as part of monitoring for the existing Saraji Mine (AECOM 2021a, App. A, pp. 24 – 30). One gauging station was installed downstream of release points in each of these creeks. The IESC recommends that the proponent collect daily streamflow data for Phillips, Hughes, One Mile, Boomerang (where the MAW release point is proposed), Plumtree and Spring creeks for at least two years prior to construction to obtain an understanding of the flow regimes and baseline conditions of these creeks as well as the likely extent of groundwater-surface water interactions (refer to Paragraphs 4 and 14). These data can then be used to calibrate and verify surface water models, such as the hydrological model which cannot currently be directly calibrated due to the lack of streamflow data (Alluvium 2019, p. 12). The streamflow data will also enable the proponent to identify how each creek's flow regime may be altered by the project and more reliably predict the repercussions on aquatic and other biota (refer to Paragraph 15).	N/A	EIS has been amended to include in Appendix B of Appendix E-1 influence of streamflow fluctuations and seasonal rainfall variation on physico-chemical parameters and dissolved metals have been assessed and included in the derivation of sub-regional WQOs. Comparing no flow data with flow data, only Turbidity (p = 0.021) and Nickel (p = 0.032) showed a statistically significant difference between flow regimes. Although statistically significant (p > 0.05), the values were still relatively high, suggesting a reasonably small difference between sites. Additionally, onflow data are limited to three 3 sampling events, which is insufficient for replication to be confident of a significant difference. Therefore, no flow and low flow data were combined into one data set. The separation between low flow and high flow was performed by using the standard approach outlined in QWQG 2022 Appendix 1. The 90th percentile (upper 10th percentile) of average daily flow rate at the nearest discharge station (Isaac River Deverill discharge station approx. 21km upstream of the Isaac River – Boomerang creek confluence) was used to differentiate between low flow and high flow data(Figure 25). This value was calculated at 1.46 m3/s (cumecs). There were some statistically significant differences in the data between high flow and low flow conditions. For these variables (Turbidity, TSS,Nitrate, Kjeldahl Nitrogen and Total Nitrogen), the 30th percentile of the high flow data was used as newWQO for high flow conditions. Statistical analysis using scatterplots and regression equations(Pearson's / Spearman's) resulted in weak to very weak correlations between discharge data and parameter values. The only parameter that showed a slight correlation was turbidity (Rho = 0.536, p =0.003). The separation into low flow and high flow data reduces significantly the amount of samples available for comparison. Therefore, it has to be taken into consideration that when differentiating between flow regimes, determined results are based on a smaller data set and should therefore be interpreted with some caution. The amended Appendix E-3 uses stream flow data for Boomerang Creek and Hughes Creek was provided for the period 2017 to 2021, however without associated rainfall data it is not able to be used for calibration of hydrologic models. It is also unclear from the data provided whether the gauges are appropriately configured to accurately measure the high flow events typically used in a hydraulic model calibration. Refer Section 1.5
IESC	2.013	Chapter 8 - Surface Water	N/A	The proponent has not considered climate change impacts on rainfall events and evaporation in the surface water modelling provided. Input climate data for the water balance model consisted of a synthetic data set of daily rainfall and evaporation data obtained from SILO gridded data over the period 1889 to 2017 (AECOM 2021b, p. 26). Although this approach takes historical extremes into account, it does not account for future extremes, such as increased rainfall intensity and altered rainfall frequency and duration. To model a worst-case scenario, it would be prudent to consider the impacts of a Representative Concentration Pathway (RCP) 8.5 emissions scenario because carbon emissions are currently tracking those modelled in this projection (Schwalm et al. 2020). In particular: a. to increase confidence in predicted water storage capacities, the proponent should consider a 'worst case' scenario incorporating higher-than-expected rainfall intensity, duration and frequency. The proponent states that there is sufficient capacity to contain all mine-affected water (MAW) and that uncontrolled releases are only likely to occur as a result of extreme rainfall events (BHP 2021a, 8-33). However, given that climate change scenarios have not been considered, the likelihood of releases is uncertain; and b. evaluation of the difference between the probable maximum flood (PMF) and the 1000-year ARI event would provide further assurance regarding the impacts of flooding.	N/A	As part of the EIS amendment, the WBM modelled the expected operational performance of the WMS, subject to a range of potential scenarios, including baseline climate conditions, potential climate change conditions, and temporary inoperability of water transfer infrastructure. The WBM utilised climate sequences generated for the site location, utilising a stochastic process, to produce 500 realisations of 20 year duration. This water balance assessment concluded that the developed WMS is expected to comprise a net deficit system whereby water sourcing requirements draw-down and manage water inventories. Accordingly, the system can accommodate the expected inflows to the system (pit sump, rainfall, runoff, treated effluent, MAW) without the risk of uncontrolled releases (spills). Similarly, the WMS system is not reliant unlicensed release(s).
IESC	2.014	Chapter 8 - Surface Water	N/A	Subsidence of 1.4 – 2.5 m across much of the undermined area (and up to 3.5 m predicted above a single southern longwall) is likely to cause surface cracks and alter infiltration and surface runoff. In addition, increased hydraulic connectivity between the ground surface and goafs could potentially occur where the height of fracturing above the seam is greater than the depth of cover. Although Tertiary sediments are predicted to develop cracks to a depth of approximately 10 – 15 m below ground, these cracks are expected to self-seal (Minserve 2017, p. 6.2). Justification is required to support this conclusion given the depth of this cracking, and that cracks are likely to provide preferential flow paths even after they are 'visually' sealed. The proponent should provide evidence to demonstrate the capability of such systems to self-seal in the project area.	N/A	As outlined in the amended Minserve subsidence report (2022), water flowing into surface cracks of the tertiary sediment is expected to swell and self seal such that the overall permeability of the tertiary sediments will remain the same as pre subsidence. This finding is reflected in the assessment of subsidence impacts throughout the amended EIS.
IESC	2.015	Chapter 8 - Surface Water	N/A	Surface water modelling predicts a reduction in total flow volumes from upstream to downstream of the mining area, hydraulic behaviour will be altered, and sediment transport reduced by subsidence troughs (Alluvium 2019, pp. 43 – 63). These potential changes require addition evaluation as described below. a. Reductions in total flow have been estimated from upstream to downstream of the project area (e.g. 11.4% for 2-year ARI events (Alluvium 2019, p. 63)). As cracking is predicted above longwalls below Hughes, Plumtree and Boomerang creeks, the IESC considers that a quantitative assessment of stream flow loss in each creek should be undertaken, including whether the number of low- and no-flow days will be reduced. Changes in flow regimes (e.g. flow duration, timing of onset of flow) in ephemeral creeks can have major repercussions for biodiversity and the composition of their aquatic and riparian communities (Datry et al. 2017), and are also likely to affect fish passage. b. Approximately 5.6 km of Hughes Creek is predicted to be impacted by subsidence, particularly along a 1.35-km diversion of the channel. Channel bed deepening is predicted to propagate upstream and increase bank erosion, which may also impact on riparian vegetation and the ecological connectivity it provides. Given that Boomerang Creek is already transport-limited (Alluvium 2019, p. 18), it is recommended that the cumulative effects of subsidence on sediment transport beyond the project area is quantified. An assessment of the impacts on water quality and water-dependent ecosystems due to reduced total flow and altered flow and sediment regimes should also be provided.	N/A	Appendix E-3, Hydraulics, hydrology and geomorphology, presents surface water modelling to predict hydrologic, hydraulic, and geomorphic responses to subsidence from long wall mining. Modelling was first undertaken for the Year 0 scenario using a range of flow events to establish baseline conditions. In the amended EIS, the same flow events were then used in the Year 10 and Year 20 scenarios to inform the likely hydrologic, hydraulic, and geomorphic responses and appropriate mitigation options for each scenario. Gradual development of panels will not necessarily alter the predicted overall impact on flow and sediment capture provided the final subsidence area is similar in size to that predicted. Surface water flow paths can be substantially altered by subsidence such that changes that occur early in the production schedule may result in final surface flow paths that differ considerably from that predicted by using the post-subsidence landform. This is not likely to have much influence on hydrology or flood behaviour but could have implications for potential mitigation works. The amended EIS indicates the nature and extent of cracking is a function of the depth of the longwall panel from the surface and the thickness of the panel extracted, the nature of the overburden strata and the characteristics of surficial soils. The implications of surface cracking for geomorphic response are discussed in Section 3.2 of Appendix E-3 of the amended EIS.
IESC	2.016	Chapter 8 - Surface Water	N/A	Although the proponent has undertaken sampling to characterise water quality for five watercourses (Hughes, One Mile, Phillips and Boomerang creeks, and the Isaac River), the data are insufficient to provide reliable baseline conditions for assessing environmental impacts, such as those from reduced streamflows or potential spills of MAW. The IESC considers that the water quality monitoring program should be expanded prior to mining so that current site-specific objectives can be determined (as outlined in Huynh and Hobbs (2019)). Limitations of the current data set are as follows. a. Data have only been collected for Hughes, One Mile and Phillips creeks between 2010 and mid-2013 (AECOM 2021a, p. 13). It cannot be assessed whether there have been any changes in water quality in these creeks in the last decade and the lack of recent baseline water quality data prevents reliable assessment of any changes that may arise from the project. The proponent should collect contemporary data from these three creeks to provide a more robust baseline against which to judge any impacts of the project on water quality in the creeks. These more recent data could be combined with those already collected to optimise the derivation of site-specific water quality objectives for each creek. b. The proponent stated that data were collected for Boomerang Creek and Isaac River between 2010 and 2020. However, these raw data are not provided and fewer than eight sampling events occurred for many of the parameters tested (AECOM 2021a, Tab. 15, p. 36). Given the likely high variability in water quality data (e.g. from high flow variability), more data on many parameters are needed to provide an adequate baseline against which to assess potential impacts of the project. As a controlled MAW release site is proposed for Boomerang Creek (BHP 2021a, p. 8-33), an adequate baseline data set is especially important for this creek and should be collected from the two proposed monitoring points shown in Figure 8-6 (BHP 2021a). c. No water quality data have been provided for Plumtree Creek. The IESC considers that baseline data should be collected for this watercourse so that likely impacts of the project on this creek can be assessed.	N/A	The EIS has been amended to present water quality objectives (WQO) for the Project Site identified from the EPP (Water), local reference data and the Water Quality Guidelines (ANZG 2018) in Chapter 8 Surface water, Section 8.4.4. Water quality data for the catchment upstream of Saraji East and upstream of the existing mines was derived from data collected for Receiving Environment Monitoring Programs or water quality trend assessments from upstream data between Jul-2012 to Jul-2021 for Hughes, Boomerang and One Mile Creeks. Plumtree Creek was not assessed as this stream has no catchment upstream of the Project, the headwaters having been developed by the existing Saraji mine, and no water quality data was available. Due to high variability of WQ parameters and deviations from the WQ guideline values as outlined in EPP 2019 (Water Isaac River 1301) and ANZG (2018), site specific or sub-regional WQOs were developed. Appendix E-1 Surface water quality technical report, Appendix A describes data sources, sample sizes and raw data analysed for WQO development. Considering the total number of samples, the data set is sufficient to derive statistically valid and robust objectives. Samples have been taken over a period of ten years and variability of flow regimes, seasonality as well as difference between reference sites have been taken into account. In summary, this allowed Sub-regional WQO reflecting the general conditions of the catchment to be generated, even though sample sizes of some parameters and sites are under the recommended amount of data. In the amended EIS Section 8.3.1.1 describes environmental background values were derived from downstream sampling points at Phillips Creek, Isaac River and Spring Creek (Background sites, Figure 8-1).

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IESC	2.017	Chapter 8 - Surface Water	N/A	The proponent provided a summary table of the water quality data in the downstream locations of each of the watercourses (BHP 2021a, Tab. 8.5, p. 8-17). The IESC notes that there are inconsistencies in the 95th percentile values reported in Table 8.5 compared with the individual watercourse data provided in Tables 6 – 14 in AECOM (2021, pp. 25 – 32). For example, several of the 95th percentile values reported in Table 8.5 are higher than the maximum values listed in Tables 6 – 14 (e.g. chromium, selenium, uranium and zinc in Phillips Creek; chromium and selenium in One Mile Creek; and molybdenum, selenium and zinc in Hughes Creek). Thus, it is unclear whether additional data have been included in the calculations for the summary table which were not presented elsewhere in the AECOM (2021a) water quality report. The proponent should clarify the water quality data sources used and confirm whether these calculations are correct.	N/A	The draft EIS has been updated and amended to reflect the findings of a comprehensive data analysis considering background and baseline monitoring data. Updated results are presented in Appendix E-1 Surface Water Quality Technical Report, Section 4.
IESC	2.018	Chapter 8 - Surface Water	N/A	The water quality objectives for physico-chemical parameters were obtained from the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP (Water)) specific to the upper Isaac River catchment. The objectives for dissolved metals were obtained from both the EPP (Water) stock watering values as well as the ANZG (2018) guidelines. The values obtained in the statistical analyses for dissolved metals were compared against the ANZG (2018) objectives for all the metals except selenium, where the EPP (Water) stock water objective was used (20 µg/L). Selenium concentrations were 10 µg/L in four of the five watercourses (BHP 2021a, Tab. 8.5, p. 8-17), exceeding the ANZG (2018) objective (5 µg/L). The proponent should justify the use of the EPP (Water) stock water objective in this instance.	N/A	Selenium now measured against ANZG 2018 guideline value of 5 µg/L. Selenium was not detected in the majority of samples. It might have occurred that the <10µg/L values were used as 10µg/L instead of being classified as non-detect which could have caused the error. However, if the ANZG GLV is 5µg/L, the non-detect value should not be larger than this.
IESC	2.019	Chapter 8 - Surface Water	N/A	In all watercourses draining the project area, turbidity far exceeded the water quality objective (50 NTU) (BHP 2021a, Tab. 8.5, p. 8-17). As subsidence-related mobilisation of sediments is likely to further elevate these already high levels of turbidity, the IESC considers that the proponent should provide more information regarding the potential impacts of the project on turbidity, including predictions of likely ecological and cumulative impacts (refer to Paragraphs 22, 27 and 38).	N/A	According to Appendix E-3 Hydraulics, Hydrology and Geomorphology of the amended EIS, downstream of the mine, Hughes and Boomerang Creek could be subject to increased erosion and bank instability due to bed load starvation and infilling of subsidised areas upstream. Erosion can be mitigated through bank stabilisation measures as outlined in Table 41 of the Appendix E-3 Hydraulics, Hydrology and Geomorphology or section 6.1 of Appendix E-1 Surface Water Quality Technical Report.
IESC	2.020	Chapter 8 - Surface Water	N/A	The proponent states that discharges of MAW will only occur during extreme rainfall events when the released water would be subject to dilution (AECOM 2021a, p. 49) and residual impacts on surface waters are predicted to be minor (BHP 2021a, p. 8-57). However, given that subsidence is predicted to reduce total flow, alter hydraulic parameters and cause ponding, the amount of dilution that could occur is uncertain. The proponent should provide a thorough assessment of the impact of discharges and runoff to surface water quality in all creeks whose flow may be affected by subsidence and/or groundwater drawdown.	N/A	Section 3.2 of Appendix E-3 states that subsidence may have local attenuation effects on low flows through temporary storage in panels, however since the subsidence is confined to relatively small sections of the major streams, the impact to downstream flows is negligible. Sections 3.2.1, 3.2.2 and 3.2.3 further describe that impact to Boomerang and Plumtree Creek will be minor, however there will be impacts to hydraulics, hydrology and geomorphology of Hughes Creek.
IESC	2.021	Chapter 8 - Surface Water	N/A	The proponent asserts that there will be negligible impacts to surface water quality due to the project. However, the potential impacts from erosion, sedimentation and releases of MAW have not been adequately considered by the proponent. The proponent should supply sufficient baseline data (refer to Paragraph 16) from appropriately designed monitoring of the surface waters of all potentially impacted creeks to confirm that water quality and erosion management measures are effective.	N/A	As part of the EIS amendment, baseline data has been collected and site specific WQOs developed from unimpacted best available reference sites. Management/Mitigation measures and plans have been proposed to reduce impacts from erosion/sedimentation. The release of MAW is very unlikely and only considered in rare and extreme weather events (<5%AEP), these would trigger a licensed release which was assessed in the Mine Water Balance Report to not exceed trigger levels for event based releases in downstream water ways.
IESC	2.022	Chapter 7 - Aquatic Ecology / Water-Dependent Ecosystems	N/A	The IESC considers that the effort to identify and characterise all aquatic, terrestrial and subterranean GDEs likely to occur in the project area is not commensurate with the potential impacts of the project. Additional sampling is required to confirm current site conditions and address the following limitations. a. Aquatic baseline ecology surveys appear to be limited to two sampling events undertaken in December 2007 and April 2010 (FRC Environmental 2018, pp. 7 – 8). Only three sites in the project area were surveyed, with no samples collected from Hughes Creek. Further, the three creeks to be undermined in the area have been identified as important corridors for fish passage (BHP 2021a, p. 7-11). The IESC recommends that the proponent conduct detailed aquatic surveys (water quality, habitat availability and structure, turtles, fish, aquatic macroinvertebrates and relevant riparian biota) at several sites on each of the three creeks to be undermined as well as suitable reference sites where impacts are not predicted. These surveys should coincide with a period of flow as well as a period soon after flow has ceased so that remnant pools can also be assessed. Without this more recent and spatially comprehensive baseline dataset, the proponent is unable to assess whether there have been any changes in composition of the aquatic biota in these creeks in the last decade or reliably predict likely impacts of the project (e.g. altered flow regimes) on aquatic and riparian biota. b. The presence of terrestrial GDEs, such as groundwater-dependent vegetation within wetlands and along watercourses and on floodplains, has not been ground-truthed in the project area or where groundwater drawdown may occur. Instead, indirect evidence is used to infer that vegetation in the project area is not groundwater-dependent. Field assessments (see Doody et al. 2019) of the extent of groundwater dependence by vegetation in wetlands, along creeks and on floodplains where drawdown is predicted would enable a more robust evaluation of the likely impacts on terrestrial GDEs in the project area. It is unclear from the proponent's desktop evaluation of subterranean GDEs, and limited sampling of bores in 2011, whether stygofauna are currently present, especially in alluvial sediments where drawdown is predicted. The IESC recommends field sampling for stygofauna, especially in alluvial sediments, to provide a more reliable baseline for assessing potential impacts of the project on this obligate GDE (Paragraph 38).	N/A	Boomerang, Hughes and Plumtree creeks aquatic baseline ecology surveys have been undertaken and are presented in Appendix D-1 and Chapter 7. The study involved review of historical information as well as field sampling to address gaps. The study involved a number of sampling sites across the mapped waterways relevant to the project along with a comparative site at the Isaac River. Surveys were conducted over two survey periods (early and late wet seasons) and assessed, habitat, groundwater dependency, water quality and aquatic biota. The outcome of the assessment indicates that waterways of the study area are ephemeral where flow and pool habitat occur after sufficient rainfall and are subject to long periods with no flow. Pool habitats are typically shallow and short lived and condition ranged for fair to good, with better conditions in the Isaac River sites. There were no GDE's present within the study area. Water quality was generally within guideline values with some of the more disturbed sites showing lower DO and higher turbidity. Macroinvertebrate assemblages were dominated by taxa that are tolerant of a wide range of conditions. Diversity indices were found to be influenced by macrohabitat, water availability and microhabitat diversity. No threatened species were recorded over the sampling events and habitat suitability is not present for threatened species, including the snapping and Fitzroy River turtles to occur within the study or surrounding areas. A total of 604 fish were recorded during the surveys, 9 native and 2 exotic. The highest species abundance and taxonomic richness was found within the Isaac River sites. An impact assessment was conducted based on the desktop and field assessments, concluding that the residual impact of the project will be negligible to low during construction and operation contingent upon the mitigation and management measures being implemented. Additionally, the assessment concluded that there will be no significant residual impact on any aquatic related State or National matter. Ground-truthing of aquatic and terrestrial GDEs has been undertaken and is presented in Appendix D-2 and Chapter 9. The impact of drawdown on verified terrestrial GDEs associated with Hughes Creek has been assessed as 'low to insignificant' and is presented in Chapter 9 . Further baseline data is proposed to be collected for two years to inform a Groundwater Ecosystem Monitoring and Management Plan, with results of existing Water Management System plans, including groundwater, ESCP and two REMPs (Saraji and the neighbouring Meadowbrook Lake Vermont) to provide data to measure if the mining activities have resulted in any impact to known terrestrial GDEs in the Meadowbrook Lake Vermont site, and the small terrestrial GDE intrusion extending upstream into EPC837 from the east. Stygofauna surveys undertaken in 2012 did not detect stygofauna and no suitable resources were identified for further investigation.
IESC	2.023	Chapter 7 - Aquatic Ecology / Water-Dependent Ecosystems	N/A	Although the site is characterised by intermittent flows and it is assumed that the alluvial sediments associated with the creeks do not contain permanent groundwater (BHP 2020a, p. 21-93), drawdown within alluvial sediments associated with Boomerang, Plumtree and Hughes creeks could lead to long-term impacts to GDEs and agricultural water resources. Site surveys identified widespread evidence of Greater Gliders and Koalas in these areas, particularly areas containing Forest Red Gums, taller trees or trees with hollows. Impairment or loss of this vegetation due to groundwater drawdown is likely to have repercussions for these two arboreal species, both listed as Vulnerable under the EPBC Act, as well as other native wildlife. The proponent needs to provide more detail on the likely impacts of limited access to shallow groundwater for the vegetation that supports arboreal and other fauna and provides ecological connectivity within the area.	N/A	In response, the amended EIS includes an assessment of Groundwater Dependent Ecosystems (GDE) in Appendix D-2; specifically, Section 7 and Chapter 9.5.5 advises the impact of drawdown in the alluvium is predicted to be minor to insignificant because riparian trees are facultative phreatophytes which have capacity to utilise moisture from multiple sources including soil moisture, surface water and groundwater to support transpiration. Further baseline surveys over a two-year period followed by the development of a GDEMMP will provide the basis for ongoing management and detection of changes that can be linked to mining operations.
IESC	2.024	Chapter 7 - Aquatic Ecology / Water-Dependent Ecosystems	N/A	Localised changes in topography, including tension cracking and ponding in the channel and along riparian corridors of Boomerang, Plumtree and Hughes creeks, will result in changes to riparian vegetation because species intolerant to ponding will die back in the subsidised areas, potentially being replaced by vegetation more tolerant to inundation (BHP 2020a, p. 6-46). Fauna reliant on the local riparian vegetation are likely to be impacted by loss of habitat. In addition, localised changes may affect terrestrial vegetation including regional ecosystems (REs) listed as 'endangered' or 'of concern' as well as 246 ha of Brigalow (Acacia harpophylla dominant and codominant) TEC (out of 418 ha within the Project Area). Changes to Brigalow vegetation may impact the threatened Ornamental Snake (Denisonia maculata), which has been recorded in the project area on multiple occasions (BHP 2020a, p. 6-45). The proponent needs to provide more detail on the likely impacts of changes in surface water flows and flooding on the habitats and biota that will be affected, including gilgai and oxbow lakes.	N/A	As part of the EIS amendment, modelling of subsidence predictions specific to the proposed underground mine workings were updated by GEONET (2022) and included in Appendix B-1 Subsidence Modelling Technical Report. Subsidence may cause a range of indirect changes in the remaining flora and vegetation communities: • surface cracking and localised changes in topography can affect the health of individual trees and other plants • water ponding from localised changes in topography can alter the soil composition and drainage characteristics, and result in deep depressions becoming ephemeral wet. More detail on indirect impacts of subsidence such as tension cracking and ponding on riparian vegetation is provided in Section 6.9.2.1 (Chapter 6). Particularly cracking clay soils within the Project Site are located in association with REs 11.3.1, 11.4.8, 11.4.9, including areas containing Brigalow TEC, has a tendency to swell following rainfall events as moisture penetrates the soil profile and shrink during dry periods, creating cracks within the soil surface (Lechner et al., 2016). As such, potential cracking as a result of subsidence may not be observed within these soil types, with cracks being infilled from the crumbling of soils during dry periods or filled when soils swell following rain events (Lechner et al., 2016). Where cracking occurs in grasslands, Brigalow TEC and gilgai, minimal impact is expected as root systems are small and restricted to the surface soil layers. Subsidence will also affect the riparian corridors of Boomerang Creek, Plumtree Creek and Hughes Creek. In the short to medium term, these watercourses will become more pond-like in nature, with flows potentially restricted and changes in inundation levels along riparian zones. Areas of Brigalow TEC within deeper depressions subject to ponding may exhibit isolated occurrences of reduced canopy health or tree loss. Ongoing monitoring of the occurrence of and effects of subsidence will be required to identify any potential change in vegetation condition and composition within subsidence areas and to allow appropriate management and/or compensatory measures to be implemented if changes occur.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
IESC	2.025	Chapter 5 - Land Resources / Final Landform	N/A	Kinetic Leach Column (KLC) tests conducted on composite samples demonstrated that leachate concentrations of aluminium, arsenic, copper, nickel, selenium, and zinc exceeded ANZG (2018) guidelines for the 95% species protection level. However, many of the drill-hole samples comprising the composite samples were taken from north-west of the proposed longwalls. The IESC recommends that the proponent do further geochemical characterisation of composite samples collected from areas intersecting the project's longwalls across the entire area to be mined to better represent potential leachate concentrations of contaminants across the site.	N/A	Kinetic geochemical testing provided data on the geochemical characteristics of sample materials over time, if the samples were subjected to a series of drying and wetting cycles. As described in Section 10.3.4 (Chapter 10 Geochemistry and Mine Waste), additional 231 exploration bores have progressed to obtain better representation of geochemistry (refer Figure10-1). Summary of geochemistry testing completed for the Project is presented in Table 10-2.
IESC	2.026	Chapter 5 - Land Resources / Final Landform	N/A	The proponent's assessment of cumulative impacts to water resources is limited in its scope and detail. Specifically, the proponent has confined the investigation of cumulative impacts on groundwater to those associated with the approved Saraji Mine as well as the proposed underground extraction. This assessment predicts additional drawdown to extend approximately 2 km and 3 km further east than under approved operations in the unconfined and confined units, respectively, and connect two previously distinct drawdown zones within each of these units (AECOM 2019, p. 97). The IESC does not have confidence in these predictions of cumulative impacts because they are likely to be underestimates if they omit potential impacts from nearby approved projects such as the Lake Vermont Mine and Bowen Gas Project.	Cumulative impacts on water resources to include estimating potential impacts on groundwater from nearby approved projects such as the Lake Vermont Mine and Bowen Gas Project. Suggest also considering surface water, not only groundwater impacts.	Section 22.4.4 has been updated to include potential impacts from the Lake Vermont - Meadowbrook Project in relation to groundwater drawdown. Appendix F-1, Section 3.4.2, presents findings from simulation of cumulative impacts on different hydrostratigraphic units due to the existing approved mining within the model domain. The simulated cumulative drawdown shows whether the zone of impact from the neighbouring operations is predicted to interact with the zone of impact predicted for the SEMLP in different aquifers (alluvium none, regolith, MCM coal seams – only). Maximum cumulative drawdown impacts in proximity to the SEMLP are shown in Figure 3-14 to Figure 3-21, and for the entire model domain in Appendix E.
IESC	2.026	Chapter 9 - Groundwater		The proponent's assessment of cumulative impacts to water resources is limited in its scope and detail. Specifically, the proponent has confined the investigation of cumulative impacts on groundwater to those associated with the approved Saraji Mine as well as the proposed underground extraction. This assessment predicts additional drawdown to extend approximately 2 km and 3 km further east than under approved operations in the unconfined and confined units, respectively, and connect two previously distinct drawdown zones within each of these units (AECOM 2019, p. 97). The IESC does not have confidence in these predictions of cumulative impacts because they are likely to be underestimates if they omit potential impacts from nearby approved projects such as the Lake Vermont Mine and Bowen Gas Project.		Section 22.4.4 has been updated to include potential impacts from the Lake Vermont - Meadowbrook Project in relation to groundwater drawdown.
IESC	2.027	Chapter 5 - Land Resources / Final Landform	N/A	The proponent has identified surrounding land uses which have the potential to contribute to sediment loads and turbidity. However, the proponent should elaborate on the contribution that the project will have on cumulative impacts and justify their claim that significant regional cumulative impacts on surface water are not expected to occur (BHP 2021a, p. 22-7).	Justification required on potential cumulative impacts of the project on sediment loads and turbidity, and justification statement required that "significant regional cumulative impacts on surface water are not expected to occur"	As part of the EIS amendment, Section 22.4.3 of Chapter 22 Cumulative Impacts has been updated to describe significant regional cumulative impacts on surface water are not expected to occur as potential impacts will be mitigated through the use of a mine water management system, sediment basins, structures, restrictions to site water releases, progressive rehabilitation, spill controls, desilting of mine affected water (MAW) dams, and water quality monitoring. The site water management system for the Project has been designed such that the risk of off-site uncontrolled release of mine affected water during operations is very low and sediment inputs can be controlled through drainage, and erosion and sediment control measures. Given the mitigation measures proposed for the Project (Chapter 8 Surface Water Resources), and the mining industry standards and regulations for water quality protection, there is not expected to be significant regional cumulative impact on surface water.
IESC	2.028	Chapter 5 - Land Resources / Final Landform	N/A	The potential cumulative impact of total flow reductions, altered flow regimes and water quality decline on riverine and riparian biota has not been adequately assessed. Assertions that the project is unlikely to cause significant cumulative impacts because the existing riparian vegetation is already highly disturbed (BHP 2021a, p. 22-7) and that all aquatic species recorded in watercourses in and around the project area are tolerant of ephemeral flow and variable water quality (BHP 2021a, p. 22-7) lack adequate justification. Further, without recent and reliable ecological and water quality baseline data (refer to Paragraphs 16, 22 and 38), the proponent is unable to properly assess potential cumulative impacts of the project and all other nearby land-uses and mining operations. The IESC also recommends that the proponent consider historical (legacy) impacts in the region to provide a greater understanding of potential cumulative impacts from the project.	The potential cumulative impacts section that discusses total flow reductions, altered flow regimes and water quality decline on riverine and riparian biota to extend justification on why impacts are expected to be minimal considering tolerance of existing species and disturbed nature of ecosystem. Addition of historical impacts to region should also be added.	In the amended EIS, Section 6.5 of Appendix E-1 summarises monitoring results from 2010-2021. The water quality data for all sites is summarised in Table 11. Comparisons were made primarily to the EPP (Water) (2019). Turbidity has consistently been detected as higher than the relevant guideline. Section 7.11 of Appendix E-1 states background concentrations of suspended solids in streams adjacent to the Project (median 280 mg/L) were well above applicable WQO for upper Isaac River catchment waters (55 mg/L), indicating that the streams are quite turbid in their existing condition. While a large, long term increase in suspended solids may further degrade aquatic ecosystems, short term increases in storm events are unlikely to have any significant impact (Section 22.4.2 of Chapter 22 Cumulative Impacts). Section 7.2.3 of Appendix E-1 states One Mile, Spring and Phillips Creek have high turbidity concentrations, attributable to the level of disturbance in the upper catchment. Therefore, relatively small sediment inputs from mine-related activities are unlikely to cause significant changes to water quality and to the aquatic ecology. As per draft EIS, during construction, controls will be installed during operation in accordance with International Erosion Control Association (IECA) Best Practice Erosion & Sediment Control guidelines. With design and mitigation measures in place, water quality impacts associated with erosion and sedimentation on the downstream creeks are expected to be minimal.
IESC	2.029	Subsidence	N/A	Although the proponent describes some aspects of subsidence monitoring (BHP 2021b, Tab. 2, pp. 19 – 20), justification to support the effectiveness of proposed mitigation measures is not presented in detail. Additional suggestions to improve subsidence monitoring and mitigation measures follow. a. Both multi-level pore pressure (e.g. using vibrating wire piezometers) and open rock bores that are suitable for downhole geophysics monitoring are required. These can be used to verify changes in the depth of surface cracks, and height of fracturing above longwalls with relatively shallow overburden. Results should be incorporated into future revisions of the groundwater modelling program to verify predictions. b. Infilling cracks, grading or channel re-profiling are the main mitigation measures that have been identified (BHP 2021c, Tab. 5, pp. 15 – 17; BHP 2021b, Tab. 3, p. 21). Larger cracks (> 50 mm) are proposed to be remediated where monitoring of waterways within the subsidence zone indicates cracks fail to self-seal within 12 months of detection. Justification for not remediating smaller cracks which fail to self-seal is required. The IESC also notes that the proponent has not explained how they propose to locate or remediate cracks that are obscured by alluvial sediment or provided convincing evidence from independent studies to demonstrate the success of grouting and other remediation measures. The proponent should justify the effectiveness of the proposed remediation options in a revised subsidence management plan.	N/A	The suggestions regarding improvements to subsidence monitoring are noted. Section 6 of Appendix K-2 discusses the monitoring proposed to be undertaken as part of subsidence management. The water balance model used to assess the behaviour of the predicted ponding will also be updated as part of the ongoing surface water monitoring program and refined overtime using water quality and water level data collected through the surface water monitoring program. Section 4.1.2 of Appendix K-2 has been added to discuss surface crack repairs. Monitoring of the Project area, including waterways within the Project area, will occur during the operational phase of the Project to identify cracks and assess the type/amount of work needed to repair individual surface cracks. Cracks obscured by alluvial sediment within waterways may not be able to be identified visually, however any adverse environmental impacts that occur as a result of these cracks will be identified through other forms of monitoring (e.g. streamflow monitoring, groundwater monitoring, erosion monitoring, riparian vegetation monitoring, etc). As discussed in Section 4.1.2, a case-by-case assessment will be conducted upon identifying smaller cracks (e.g. less than 50mm) to determine if repair is required or if the safety and environmental risks associated with the smaller cracks are negligible. Areas disturbed by surface crack repair works will be monitored to ensure that they re-establish vegetation and achieve rehabilitation completion criteria.
IESC	2.030	Chapter 9 - Groundwater	N/A	The proponent has committed to develop and establish a groundwater monitoring program (reviewed annually) prior to commencement (AECOM 2019, p. 116), which will primarily detect changes to groundwater levels and quality within the Quaternary and Tertiary aquifers and the Permian coal seam. Furthermore, the proponent has committed to develop a groundwater monitoring database based on the monitoring program and update this monthly.	The IESC recommends that the groundwater model should be revised at regular intervals as additional relevant information becomes available.	In case of future use of the Project model, updates could be conducted to further refine the model if it was deemed that an increase in model confidence level was required, but the applicability of this would be dependent on the purpose of the future modelling and availability of data to inform future changes. As it stands, the current model is deemed fit for purpose for the Project impact assessment. The EIS has been updated to reflect this position.
IESC	2.031	Chapter 9 - Groundwater	N/A	The monitoring network is proposed to include existing bores (AECOM 2019, Tab. 13, pp. 57 – 58) and four new bores (one which is over the planned longwall panels) to augment the monitoring program as existing bores are lost (AECOM 2019, Tab. 30, p. 110; AECOM 2019, Fig. 30, p. 112). The IESC supports the additional monitoring for changes in groundwater level at the site, and recommends that these bores be installed as soon as possible.	N/A	The additional monitoring bores proposed for the project will be installed as soon as practical in accordance with design and installation requirements.
IESC	2.032	Chapter 9 - Groundwater	N/A	The IESC notes that the proponent has not specifically provided triggers for groundwater level decline. The proponent should collect a minimum of two years of monitoring data to establish baseline conditions at the site and use this information to specify and justify triggers. Additionally, an explanation of potential mitigation actions is required if trigger levels are exceeded.	N/A	The amended EIS includes data to describe potential for groundwater dependent ecosystems and surface-groundwater connectivity, which is presented in Appendix D-2 and Chapter 9. With this data, the EIS updates allow further characterisation of the seasonal ecohydrological function and baseline condition of terrestrial GDEs on Hughes Creek, off lease to the east of EPC837 where impact to mapped terrestrial GDEs may potentially be propagated due to groundwater level changes. The purpose of the baseline data collection is to provide a basis for detection of future declines in ecological condition of GDEs subject to monitoring that can be linked to mining related activities. Further data collection will inform ongoing review of requirements for monitoring to be undertaken, and methods tailored to the assessed level of risk to GDE function.
IESC	2.033	Chapter 9 - Groundwater	N/A	The IESC recommends that after mine closure, groundwater level data are compared to model predictions of long-term water recovery.	N/A	During post closure it is envisaged that the groundwater level data will provide recovery data, which will be compared to long-term model predictions. The monitoring program will also provide opportunities to combine groundwater monitoring data from multiple mines operated by BMA. The combined monitoring dataset may allow for the regional Bowen Basin groundwater models and model predictions to be refined, and for the assessment of potential cumulative impacts from multiple mining operations.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
IESC	2.034	Chapter 9 - Groundwater	N/A	Recent additional groundwater quality data (i.e. collected within the last three years) are required to compare with earlier monitoring results undertaken in the project area. The IESC recommends that a specific groundwater quality TARP should be developed.	N/A	The amended EIS collates additional groundwater quality data from historic and existing monitoring bores in the vicinity of the Project, including data collected within the last three years (2008-2022). These bores provided detailed water quality data of groundwater resource for assessment of the Project. The monitoring bore locations are shown in Figure 30 and construction details are summarised in Table 21 of Appendix F-3 Groundwater Resources Technical Report. In the amended EIS, groundwater quality data is compared to the EA condition trigger levels indicating the latest groundwater quality data does not readily comply with the trigger values derived in the EA due to elevated total metal concentrations. These data are included in the water quality monitoring data template in Appendix A to Appendix F-3 of the EIS. These data allow for the evaluation of data and aid in the compilation of proposed trigger levels for the Project. The data from the Saraji Mine monitoring bores, used to describe baseline groundwater conditions, have trigger levels, which have been included in the Saraji Mine EA conditions (EPML00862313, dated 10 March 2022). It is considered that these monitoring bores and trigger levels will be used for the Project. These triggers are included in Table 44. As described in Section 7.7.1 of the amended EIS, site-specific groundwater quality will be monitored to determine additional bore specific trigger levels, evaluate spatial and temporal trends, and gauge whether water quality objectives are being protected or enhanced. - An objective of the GMP will be to detect possible water quality change trends, which could materially change water quality (i.e., no longer able to meet WQOs or current use) due to the Project. All documentation and information related to groundwater level and groundwater quality monitoring will be kept in a secure archive, and readily available to scrutinise against regulatory criteria and trigger levels.
IESC	2.035	Chapter 9 - Groundwater	N/A	The EIS contains inconsistent information about the distribution of alluvium in the project area. The proponent should ground-truth the presence of Quaternary and Tertiary sediments along all watercourses draining the project area and measure depths to groundwater. Where saturated alluvium is identified along watercourses, appropriate groundwater monitoring and mitigation measures should be implemented. The groundwater monitoring network design should be reviewed once these studies are completed.	N/A	As described in Appendix F-3 Groundwater resources technical report, the conceptualisation of current groundwater resources indicates three separate groundwater systems are relevant to the Project; these aquifer systems are associated with the following geological units: - seasonal or sporadic alluvium groundwater - localised basal sand and gravel at the base of Tertiary sediments - deeper Permian coal seams. The amended EIS includes an assessment of the alluvium (3D Environmental, 2022), identified in the field at Boomerang Creek, Plumtree Creek, and the former Hughes Creek, and along Phillips Creek was conducted. The hand auger holes and logged sediments are summarised in Table 18 of Appendix F-3. Existing hydrological understanding, groundwater levels and flows, and quality for alluvium are described in Section 9.4.4, 9.4.5 and 9.4.6, respectively. Hand augur bores and recently installed (2020) groundwater monitoring bores, as detailed in Section 5.2.3.1 of Appendix F-3 Groundwater Resources Technical Report, substantiate the limited alluvium along the non-perennial creeks (Boomerang Creek, Plumtree Creek, One Mile Creek, and the former Hughes Creek). These drilling results indicate: - Thin moist to dry alluvium within these creeks - Shallow bedrock below the non-perennial creeks - Limited effective storage in the river sand (i.e., dry due to drainage from the sand) - The deepest alluvium within the Project footprint was 3.75 m deep.
IESC	2.036	Chapter 8 - Surface Water	N/A	The surface water monitoring plan and site-specific trigger values have not yet been developed. The proponent is required under the Environmental Authority to develop a Receiving Environment Monitoring Program (REMP), which the proponent has committed to develop and implement prior to construction (BHP 2021a, p. 8-51). The proponent has provided a preliminary response plan regarding exceedance of water quality objectives (BHP 2021a, Tab. 8.12, p. 8-55) and has committed to developing a TARP prior to construction (BHP 2021a, 8-54). Further information should be provided regarding site-specific water quality objectives, water quality monitoring locations and frequency, streamflow gauging and sediment sampling. a. The proponent should follow the guidance provided in the IESC's explanatory note on deriving site-specific water quality guideline values (Huynh and Hobbs 2019) in addition to the EPP (Water) Isaac River Sub-basin Environmental Values and Water Quality Objectives (DEHP 2011) and the Deciding Aquatic Ecosystem Indicators and Local Water Quality Guidelines (DES 2018) (BHP 2021a, p. 8-18). b. Although the proponent states that water will be monitored at upstream and downstream locations during emergency release events (BHP 2021a, p. 8-52), the frequency of monitoring during other times should also be specified. The IESC considers that regular and event-based water quality monitoring of the discharge water, upstream water and water immediately downstream of the licenced discharge points should occur to determine whether and when analytes exceed water quality guidelines. c. The movement of sediment and attached metals is considered to be a potential impact to aquatic ecology (AECOM 2021a, p. 37). However, baseline monitoring of sediment quality does not appear to have been undertaken. The IESC recommends appropriate sediment monitoring to assess whether sedimentation and contamination may occur, especially in creeks deemed to be important for fish passage. d. Little information is provided in the EIS regarding the frequency or location of streamflow monitoring during construction, operation and post-closure. The proponent states that additional baseline data on surface water flows and quality will be collected for the development of the REMF; however, no details are provided. The proponent should provide details on the ability (statistical power) of the proposed streamflow monitoring program to detect whether impacts on streamflow are greater than predicted. The monitoring program should also be able to measure the effectiveness of any mitigation and management measures that are implemented.	N/A	With additional baseline data included in the amended EIS, Appendix E-1, Section 1.3, describes the assessment methodology including identification of environmental values and definition of applicable water quality objectives (WQO) to characterise the quality of the surface water within the area (Section 4) and assess potential impacts (Section 5). Water quality datasets used in this assessment comprise water quality data from locations monitored as part of receiving environment monitoring programs (REMP) for Saraji Mine (SRM) and Peak Downs Mine (PDM) between July 2012 and July 2022, dependent on location. Data was collected and assessed for the following purposes: -From upstream of any mining activity to develop sub-regional WQOs -From downstream of the existing Saraji Mine to assess the existing baseline conditions of the Project Site. Within the amended EIS, site specific WQOs have been developed from data collected from unimpacted best available reference sites. Historic water quality data for the catchment upstream of proposed Project mining and upstream of the existing mines were compared to WQOs outlined in ANZG 2018 and EPP (Water and Wetland Biodiversity) 2019 (Isaac River 1301). Due to significant differences in measured water quality background parameters between this sub-regional catchment and the set WQOs for the regional catchment, it was considered appropriate to develop site-specific WQOs (Table 3 of Appendix E-1). Methodology for the development of site specific or sub-regional WQOs is outlined in Appendix C of Appendix E-1 and data sampling locations for site specific WQOs development are presented in Figure 5 of Appendix C-1. Default (existing) guidelines values are presented alongside the site specific WQOs wherever these are different from the developed WQO. Appendix E-1, Section 4.2, provides further information on interpretation and assessment of water quality. For the purposes of identifying if the project has an impact on the receiving environments, a Receiving Environment Monitoring Plan (REMP) would be developed. Monitoring sites directly upstream and downstream of Saraji East Underground Mine Project will be established for each impacted watercourse as part of the REMF. This would allow for a direct comparison between upstream and downstream WQ and for the accurate evaluation of mining impact. This comparison will allow changes in water quality to be identified, providing the opportunity for quick and targeted mitigation responses as a result. Actions undertaken in response to an exceedance in water quality criteria are outlined in Table 9, within Section 7.5 of Appendix E-1.
IESC	2.037	Chapter 8 - Surface Water	N/A	The proponent has broadly outlined measures to mitigate impacts on surface water; however, specific details have not been provided in the EIS. Using more recent baseline data on water quality and the community composition and condition of riparian zone vegetation and aquatic biota, the proponent should propose appropriate mitigation and management strategies to minimise potential impacts of altered flow regimes and/or water quality on riparian vegetation and aquatic biota in Plumtree, Boomerang, Phillips, One Mile and Hughes creeks and further downstream in the Isaac River. A suitable monitoring strategy, including sampling appropriate reference sites, should be outlined that allows the proponent to demonstrate the effectiveness of these mitigation strategies in protecting the ecological integrity of the ephemeral streams and the Isaac River into which they flow.	N/A	With additional baseline data included in the amended EIS, Appendix E-1, Section 1.3, describes the assessment methodology including identification of environmental values and definition of applicable water quality objectives (WQO) to characterise the quality of the surface water within the area (Section 4) and assess potential impacts (Section 5). Water quality datasets used in this assessment comprise water quality data from locations monitored as part of receiving environment monitoring programs (REMP) for Saraji Mine (SRM) and Peak Downs Mine (PDM) between July 2012 and July 2022, dependent on location. Data was collected and assessed for the following purposes: -From upstream of any mining activity to develop sub-regional WQOs -From downstream of the existing Saraji Mine to assess the existing baseline conditions of the Project Site. Within the amended EIS, site specific WQOs have been developed from data collected from unimpacted best available reference sites. Historic water quality data for the catchment upstream of proposed Project mining and upstream of the existing mines were compared to WQOs outlined in ANZG 2018 and EPP (Water and Wetland Biodiversity) 2019 (Isaac River 1301). Due to significant differences in measured water quality background parameters between this sub-regional catchment and the set WQOs for the regional catchment, it was considered appropriate to develop site-specific WQOs (Table 3 of Appendix E-1). Methodology for the development of site specific or sub-regional WQOs is outlined in Appendix C of Appendix E-1 and data sampling locations for site specific WQOs development are presented in Figure 5 of Appendix C-1. Default (existing) guidelines values are presented alongside the site specific WQOs wherever these are different from the developed WQO. Appendix E-1, Section 4.2, provides further information on interpretation and assessment of water quality. For the purposes of identifying if the project has an impact on the receiving environments, a Receiving Environment Monitoring Plan (REMP) would be developed. Monitoring sites directly upstream and downstream of Saraji East Underground Mine Project will be established for each impacted watercourse as part of the REMF. This would allow for a direct comparison between upstream and downstream WQ and for the accurate evaluation of mining impact. This comparison will allow changes in water quality to be identified, providing the opportunity for quick and targeted mitigation responses as a result. Actions undertaken in response to an exceedance in water quality criteria are outlined in Table 9, within Section 7.5 of Appendix E-1.

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IESC	2.038	Chapter 7 - Aquatic Ecology / Water-Dependent Ecosystems	N/A	The IESC suggests that additional data are required to provide a reliable baseline for assessing potential impacts of the project on water-dependent ecosystems in the project area. These data should be collected from monitoring sites located in areas where impacts are predicted as well as appropriately dispersed reference sites where impacts of the project are unlikely (enabling the proponent to distinguish project-related impacts from background changes over time). In particular, the IESC recommends the following: a. An ecohydrological conceptual model is required that illustrates potential impact pathways and likely ecological responses by water-dependent ecosystems to predicted changes in surface water and groundwater quantity and quality in the project area and downstream. This model should specify pathways where mitigation measures are feasible for avoiding or reducing impacts of the project on water-dependent ecosystems, and could be used to identify relevant parameters and ecosystem components for targeted monitoring. b. As the available data on aquatic biota are spatially restricted and over a decade old (refer to Paragraph 22), the IESC recommends that the proponent should survey habitat availability and structure, turtles, fish, aquatic macroinvertebrates and relevant riparian biota at several sites on each of the three creeks that are to be undermined as well as at suitable reference sites where impacts are not predicted. These surveys should be done during periods when the creeks are flowing and in remnant pools after flow ceases, and a monitoring regime should be established at these sites to detect any impacts on aquatic and riparian biota. There is merit in sampling some of the same sites where water quality is to be monitored. Where feasible, the biota of standing waters (e.g. oxbow lakes near Boomerang Creek) should also be surveyed as their water regime is likely to be altered by subsidence. c. Based on indirect evidence, the proponent asserts that there are no GDEs in the project area (refer to Paragraph 22). However, Figure 37 (AECOM 2019, p. 87) shows the northern end of the project area has "moderate potential" for GDEs as shown in the GDE Atlas. It is plausible that some of the oxbow-lake, riparian and floodplain vegetation in the project area occasionally accesses groundwater and, therefore, is a terrestrial GDE. The IESC recommends that the proponent undertake field assessments of potential groundwater use (using methods described by Doody et al. 2019) by terrestrial vegetation, especially that growing in alluvial sediments or areas where the water table may be less than 10 mbgl. If areas of terrestrial GDEs are found where groundwater drawdown is predicted, offsets may be needed because of the lack of other mitigation options. Monitoring the response of terrestrial GDEs to drawdown in these locations will enable the proponent to identify what offsets will be required. d. Stygofauna, an obligate GDE, were sampled twice in 2011 in seven bores screened in Tertiary and Permian sediments. Alluvial sediments, where stygofauna are more likely (Glanville et al. 2016) were not sampled. The IESC recommends that more recent stygofauna survey data be collected and include multiple samples from alluvial sediments in areas where drawdown is predicted as well as from reference bores where drawdown is not likely. If a pilot survey of ten bores yields any stygofauna, the proponent should collect a more comprehensive set of samples as recommended by DSITI (2015) so that potential impacts of the project on stygofauna can be assessed and, if necessary, monitored. If no stygofauna are collected, this increases confidence in the proponent's assertion that this GDE is not present in the project area.	N/A	The amended EIS includes additional data to provide assurance of a reliable baseline for assessing potential impacts of the project on water dependent ecosystems in the project area. This data was collected from monitoring sites in impact areas and at reference sites enabling monitoring of project impacts from background changes over time. In response to recommendations from IESC: a. Appendix D-2 Groundwater dependent ecosystems presents evidence-based ecohydrological conceptual model demonstrating potential impact pathways and likely ecological responses of groundwater dependent ecosystems is presented within to inform assessment of predicted changes in surface water and groundwater quality and quantity, and baseline for targeted monitoring. b. Appendix D-1 Aquatic Ecology Technical Report summarises additional field surveys, baseline data and impact assessment to describe habitat availability and structure, turtles, fish, macroinvertebrates and riparian biota in the vicinity of the impact area and reference sites, providing evidence-basis for assessing ecological impacts from subsidence and subsidence-induced changes to hydraulics, hydrology, geomorphology and aquatic function. c. Appendix D-2 Groundwater dependent ecosystems presents evidence-basis derived from field surveys of soil,, water and vegetation to identify potential for GDE in the Project area as described in Chapter 9, Section 9.4.9. d. Stygofauna sampled twice in 2011 in seven bores screened in Tertiary and Permian sediments did not confirm presence, and available groundwater resources are not reliable resources for stygofauna populations. On this basis, there is sufficient evidence no stygofauna is present in the project area.
IESC	2.039	Chapter 5 - Land Resources / Final Landform	N/A	The proponent plans to refine the existing Saraji Mine mineral waste management strategy for in-pit spoil dumps to include waste from the proposed project. The IESC considers that specific details on the final landform and the updated management strategy should be included as part of this project.	Confirm action required	Chapter 10, section 10.7.3 details that BMA has completed an analysis to demonstrate the sufficient disposal capacity is available for the Project mine waste within the existing approved Saraji Mine spoil dump, assuming of Bauhinia put due to progress of the Project. Figure 10.4 shows that rejects and capping material remain below maximum approved spoil dump capacity. Section 10.7.4 details the mineral waste management strategy the Project will focus on.
IESC	2.040	Chapter 5 - Land Resources / Final Landform	N/A	The final landform of the undermined project area is likely to have a substantially altered topography (e.g. multiple parallel troughs up to 2.5 m deep) that will have lasting effects on runoff, flooding patterns and groundwater recharge, especially where cracking occurs. The proponent should provide details of how this final landform will be remediated, especially where native vegetation is likely to be established and where surface runoff contributes to streamflow in the creeks draining the project area.	The final landform and altered topography should be discussed in detail, specifically, details of how this final landform will be remediated, especially where native vegetation is likely to be established and where surface runoff contributes to streamflow in the creeks draining the project area.	Landform design and planning for rehabilitation is discussed in Section 9.4 in Appendix K-1. Phasing of rehabilitation is discussed in Section 9.5 of Appendix K-1. A detailed rehabilitation schedule will be refined and submitted in combination with the EA approval prior to construction commencing.
Department of Employment Small Business and Training	4.001	N/A	N/A	Thank you for the opportunity to comment. DESBT has nil comments for the submission.	N/A	No response is required for this submission.
Submitter 1	5.001	Chapter 1	N/A	The project goal is to develop a greenfield single-seam underground coal mine and associated project infrastructure, which would involve the extraction of up to seven million tonnes of metallurgical product coal per year, for the export market. The potential impacts of further releases of carbon emissions are not assessed and present a considerable threat for our environment in a context of climate change.	This project needs to be simply abandoned.	The Project's potential air quality and GHG impacts are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential GHG and climate change impacts included a preliminary climate change risk assessment for the Project.
Office of Industrial Relations	6.001	N/A	N/A	No interest from Office of Industrial Relations Major Hazard Facilities Unit.	N/A	No response is required for this submission.
Queensland Ambulance Service	7.001	N/A	N/A	Nil response from the Queensland Ambulance Service.	N/A	No response is required for this submission.
Mackay Regional Council	8.001	N/A	N/A	Council has reviewed the draft EIS documentation and notes that the EIS addresses most of the areas of Council's interests listed above, although not distinctly separating the specific impact on the Mackay Region (as opposed to the wider Mackay, Isaac and Whitsunday (MIW) Region). In summary, the EIS has provided sufficient information to evaluate the potential beneficial and adverse environmental impacts from a Mackay Regional Council perspective and Council does not recommend any specific changes to the EIS documentation.	N/A	No response is required for this submission.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Communities, Housing and Digital Economy	9.001	Appendix L - Social Impact Technical Report	N/A	The department supports the Housing and Accommodation Plan in the Social Impact Management Plan, the proposed (related) implementation of management measures and the Social Impact management Plan Framework and Program for Housing and Accommodation.	N/A	N/A
Department of Education	10.001	N/A	N/A	The Department of Education has reviewed the Saraji East Mining Lease Project and provides a NIL response. This is subject to the final conditions in the approval package is able to avoid and/or mitigate any impacts to the surrounding school network, during construction and operation of the mine. The department would like to remain a relevant stakeholder for this project and requests that the department is given opportunity to review any changes made to the project to ensure state interests for education can be appropriately considered.	The department would like to remain a relevant stakeholder for this project and requests that the department is given opportunity to review any changes made to the project to ensure state interests for education can be appropriately considered.	Thank you for your interest and response.
Department of State Development, Infrastructure, Local Government and Planning	11.001	Chapter 17: Social Appendix L-1 Social Impact Assessment	Section 17.4.5 – Economic and employment profile Section 17.5.4 – Population, housing and accommodation	The EIS and Social Impact Assessment (SIA) adequately identifies and addresses the social impacts of the project in the SIA study area, however information and data referenced in the document is dated.	Update and review social conditions and statistics to ensure Social Impact Management Plan (SIMP) addresses any significant changes in the SIA study area, particularly in the areas of Labour Force, Skills Shortages, population, housing and accommodation.	Chapter 17 of the EIS and the Social Impact Assessment have been updated with more recent data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018), including updates to labour force, skills shortages, population, housing and accommodation.
Department of Transport and Main Roads cover letter	12.001	Traffic Impact Assessment	N/A	The comments raise several technical matters requiring update to the draft EIS in addition to objecting to the proposal by BM Alliance Coal Operations Pty Ltd to create a new level crossing, unless the crossing is a private (occupational) crossing supported by the railway manager (Aurizon). The Queensland Level Crossing Safety Strategy 2012–2021 and the Queensland Level Crossing Safety Strategy 2012–2021 2019 Update: On Track to ZERO Harm both strongly discourage new level crossings as a matter of policy. The EIS requires additional information to illustrate that all alternatives to creating a new level crossing have been investigated, and if a new private (occupational) crossing is proposed, that the new crossing is supported by the railway manager.	N/A	Consultation is ongoing with the railway manager (Aurizon Network) in relation to various interactions (including various existing crossings) involving the railway in the vicinity of Saraji Mine. This represents routine activity and the crossing will be constructed following then necessary completion of a relevant new or amended formal agreement with the railway manager prior to the commencement of the project. BMA has in place many such agreements with the railway manager. Based on the ongoing interactions and long-standing relationship, seeking a written in-principle agreement would not be aligned to how the two parties manage the ongoing relationship nor would the network manager accept the merits of the concept of an in-principle agreement
Department of Transport and Main Roads cover letter	12.002	Executive Summary	N/A	The 'Road' and 'Regional road network' sections of the Executive Summary report on the conclusions of the transport assessment. Appendix J requires review as per TMR's comments and therefore the statements in the executive summary about the assessment may need to be updated for accuracy.	Review the 'Road' and 'Regional road network' sections of the Executive Summary to reflect any changes to the assessment.	The Executive Summary reflects the EIS findings of Appendix J-1 Traffic and Transport Impact Assessment and management commitments identified in Appendix O-1 Summary of commitments.
Department of Transport and Main Roads cover letter	12.003	Executive Summary Appendix O Summary of Commitments General	Mitigation measures and management	The eighth dot point identifies the following commitment: 'a Traffic Management Plan will be prepared and implemented prior to construction considering the requirement for escorts and/or public notices during the transportation of oversize vehicles on public roads.' Further commitments are required by TMR to ensure any impacts on the State-controlled road network are assessed and addressed. These requirements are explained in more detail in TMR's comment on Appendix O.	Revise the Executive Summary to reflect TMR's requested changes to Appendix O Summary of Commitments.	The Executive Summary reflects the EIS findings of Appendix J-1 Traffic and Transport Impact Assessment and management commitments identified in Appendix O-1 Summary of commitments, including Traffic Management Plan as required by Department of Transport and Main Roads (Commitment 82).
Department of Transport and Main Roads cover letter	12.004	Appendix O Summary of Commitments General	General	The EIS has not provided detailed proposal plans for the project's proposed interfaces with the existing railway corridor.	Amend the EIS to provide the required detailed design plans to clarify the project's interfaces with the Norwich Park Branch Rail Line including but not limited to, fencing arrangements to prevent unauthorised access, earthworks, stormwater drainage, services and utilities and the design of new rail transport infrastructure and other rail infrastructure. The design of the development will need to ensure that emergency and maintenance access to the railway corridor is not obstructed or interfered with and that the existing and future operations of the railway corridor are not compromised. Additionally, the placement, design and management of stockpile areas and dangerous goods must ensure there are no adverse impacts on the railway corridor, amongst other relevant considerations.	The amended EIS discusses Project interface with rail and level crossings in Section 14.7.2, which summarises detail provided in Appendix J-1 Traffic and Transport Impact Assessment and its Appendix G Rail Interface Concept Design. For the amended EIS, the concept design was undertaken in two phases; identifying a suitable access location in the vicinity of the location nominated in the EIS and preparing a concept design for the intersection. The initial phase to identify a suitable location highlighted that there was insufficient space between the existing roadway and rail line to accommodate traffic stopped at a rail level crossing (referred to as "short stacking by TMR). To meet current road design standards, the existing roadway would need to incorporate a horizontal shift to the west of approximately 10m. This shift can be accommodated within the existing road reserve. The design undertaken for the intersection is only at a concept level and a series of recommendations, including topographic survey, has been made to assist the progression of this project through to subsequent stages of design. This assessment concluded that the new level crossing (Level Crossings A) may not have sufficient queue length to contain the long vehicles expected. This issue is expected to arise for a short time period during peak hours in FY2023 when the construction phase and operation phase overlap. The following mitigation measures would be considered during the detailed design phase to address the queue length issue: • 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. During the detailed design stage of the Project, railway safety assessment will be completed via Australian Level Crossing Assessment Model (ALCAM) as required by the rail authority. If required, these assessments will be conducted on all level crossings substantially affected by the Project to finalise the required treatment options.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Transport and Main Roads cover letter	12.005	Appendix O Summary of Commitments General	Section 3.4.1 Figure 3-3	Figure 3-3 shows the project consists of a rail spur and balloon loop connection with the existing Norwich Park Branch Railway (railway corridor). Additionally, the project proposes to locate stockpiles, coal processing plants, multiple dams etc immediately adjacent and downstream of the railway corridor. The EIS does not detail the interface of the proposed bulk earthworks with the existing railway corridor. The EIS also does not mention any potential impacts of blasting impacts on the state-controlled transport infrastructure. These are matters/issues which fall within considerations identified and explained through State Code 2: Development in a Railway Environment, of the State Development Assessment Provisions which should be addressed within the draft EIS for completeness.	Amend the EIS and supporting reports to demonstrate how the project will comply with PO3, PO5, PO11 to PO15 of the State Code 2: Development in a Railway Environment, of the State Development Assessment Provisions and Part 2.7 - Filling, Excavation and Ground Disturbance of the Guide for Development in a Transport Environment: Rail. In particular, the proponent should provide the following, amongst, other relevant information: - (a) Preliminary Geotechnical Investigation A RPEQ certified preliminary geotechnical investigation of the site. This should provide preliminary geotechnical design information on the following, amongst other relevant considerations, to inform the structural engineering design and construction management of the development: - earthworks, including methods for the excavation, the excavation and drilling of rock, the stability of open excavations, and filling/back filling and compaction; - permanent and temporary retention options, design loads and geotechnical design parameters; - suitable options for foundation structures, design loads and geotechnical design parameters; - groundwater management; - vibration impacts from drilling, boring, blasting and excavation; - advice on effects on the existing rail transport infrastructure and relevant construction issues. (b) RPEQ certified concept plans for earthworks and structures Provide RPEQ certified conceptual structural engineering design and earthworks plans for the development, including cross sections/elevations and any required supporting technical details showing the earthworks/batters/retaining structures in proximity to the existing railway corridor. This should include: - the location and extent of proposed excavation and filling (earthworks), including likely volumes of cut and fill adjacent to the railway corridor; - the maximum depth of any excavation adjacent to the railway corridor; - the maximum height and intended form/design of any proposed retaining walls or structures adjacent to the railway corridor; - where proposed excavations, filling/backfilling or retaining works will be greater than 1m in depth or height abutting the railway, RPEQ certified drawings should be provided demonstrating that the works will not de-stabilise rail transport infrastructure or the rail corridor land supporting this infrastructure. This should include the loading configuration of any embankments and retaining walls, including foundation and retaining structures; and - demonstrate that any retaining structures, excavations, filling/backfilling and structures will be located outside the railway corridor. (c) Blasting - provide proposal plans demonstrating that any blasting activities will be adequately setback from the railway corridor; - demonstrate that the development does not involve blasting or provide a blasting management plan that has been prepared in consultation with and approved by the railway manager (Aurizon). Aurizon can be contacted at: CorridorEnquiries@aurizon.com.au The construction of the development will need to address vibration, ground movement and loading impacts on the existing railway corridor.	BMA has included a commitment to develop the Project in accordance with State Code 2: Development in a Railway Environment of the State Development Assessment Provisions. During detailed design, BMA will undertake assessment of the threshold quantities identified in A023.1 for the handling or storage of hazardous chemicals. This is described in Appendix A-3 (Approvals Framework).
Department of Transport and Main Roads cover letter	12.006	Appendix O Summary of Commitments General	Section 3.4.1 Figure 3-3 Section 14.2	Figure 3-3 shows the project consists of a rail spur and balloon loop connection with the existing Norwich Park Branch Railway (railway corridor). Additionally, the project proposes to locate stockpiles, coal processing plants, multiple dams etc immediately adjacent and downstream of the railway corridor. Chapters 3 and 14 of the EIS do not reflect the requirements under section 255 of the Transport Infrastructure Act 1994 that the railway manager's written approval must be obtained where carrying out works in or on a railway corridor or otherwise interfere with the railway or its operations.	Amend the EIS to reflect the requirements under section 255 of the Transport Infrastructure Act 1994 that the railway manager's written approval must be obtained where carrying out works in or on a railway corridor or otherwise interfere with the railway or its operations. Prior to completing an application for registration of a rail siding, it is recommended that the proponent contact the Office of the National Rail Safety Regulator (ONRSR) to enter into discussions regarding the process associated with registration of their rail infrastructure. The proponent should contact ONRSR via email contact@onrsr.com.au in relation to this matter. Under section 83 of the Rail Safety National Law (RSNL) a rail infrastructure manager of a private siding that is connected to or has access to a railway operated by an accredited rail transport operator must be registered to operate that siding or other sidings which they manage, unless they are otherwise accredited or hold an exemption. A rail infrastructure manager of a proposed private siding/s is required to apply for registration before commencing construction of the private siding or undertaking any railway operations. ONRSR may take up to 6 months to review an application for registration.	The amended EIS has outlined in Section 3.7.12 of Chapter 3 (Project Description) and Section 14.7.2 of Chapter 14 (Transport), BMA commit to consultation with relevant authorities in compliance with section 255 of the <i>Transport Infrastructure Act 1994</i> .
Department of Transport and Main Roads cover letter	12.007	General	Section 3.5.1 Table 3.5 Section 3.5.1 Figure 3-4	Table 3.5 does not identify the existing railway corridor land parcel/s that the proposed rail spur and balloon loop will connect with. However, Figure 3-4 identifies the existing railway corridor lots.	Amend Table 3.5 to identify the relevant land parcels and ownership that the proposed rail spur and balloon loop will connect with.	The EIS presents an updated table of land tenures relevant to proposed rail spur and balloon loop, including title ownership in Table 3-5 of Chapter 3 (Project Description). The proposed rail spur and balloon loop connect with Lot/Plan 26CNS125 owned by Aurizon Network Pty Ltd (Queensland Rail).
Department of Transport and Main Roads cover letter	12.008	Chapter 03 Project Description Appendix J-1 Traffic and Transport Impact Assessment Executive Summary	Section 3.6.4 Section 6.2.6 Section 9.1.6	Section 3.6.4 of Chapter 3 states: 'Construction equipment will mainly be transported by road to the Project Site, on standard or over-dimensional loads. The majority of the materials and equipment for the construction stage will be sourced from Mackay and/or Rockhampton. Large items that cannot be divided into smaller components, such as large coal crushing and handling equipment, will be transported on State roads under permit. Where necessary, these vehicles will be accompanied by safety escorts.' However, the Traffic and Transport Assessment sections 6.2.6, 9.1.6 and the Executive Summary state: 'The assessment concluded that Project heavy vehicles are typically road trains and articulated vehicles and it is not expecting any Over-Size-Over-Mass (OSOM) vehicles.'	Confirm the statements regarding OSOM provided in the Appendix J Traffic and Transport Impact Assessment are correct and that there will not be a requirement for OSOM movements during all phases of the project. However, if OSOM movements are likely, amend the EIS to correctly quantify them (e.g. in the Construction and Operation Phases transport summaries and in Appendix J Traffic and Transport Impact Assessment).	Construction equipment will be transported by road to the Project Site on standard freight vehicles, not over-size, over-mass (OSOM) loads. Most of the materials and equipment for the construction stage will be sourced from Mackay and/or Rockhampton. This is confirmed in Chapter 3 (Project Description) Section 3.6.4 Transport of plant and equipment.
Department of Transport and Main Roads cover letter	12.009	Chapter 03 Project Description Chapter 14 Transport	Section 3.7.13 Figure 3-11 Section 14.4.1 Section 14.4.1 Figure 14-3 Section 14.6.2 Section 14.7.2	Figure 3-11 identifies an intersection upgrade immediately located west of the existing railway corridor on Dysart-Moranbah Road (/Saraji Road). Section 14.4.1 and Figure 14-3 note that a new railway level crossing on the Norwich Park Branch Railway (railway corridor) is proposed. The level crossing will include boom gates and flashing lights control on Norwich Park Branch rail line. Section 14.6.2 identifies short stacking/vehicle queueing will be an issue at this new level crossing at the new Dysart-Moranbah Road intersection. Approximately 34m is available. Section 14.7.2 states: 'During the detailed design stage of the Project, ALCAM assessments may be required by the rail authority. If required, these assessments will be conducted on all level crossings substantially affected by the Project in order to finalise the required treatment options.'	TMR does not support new open railway level crossings in accordance with the Queensland Level Crossing Safety Strategy 2012 to 2021 which seeks to eliminate railway level crossings, with a clear objective to add no further open level crossings to the network. In addition, any proposed private (occupational) crossing of the railway corridor must be eliminated and minimised wherever practical and possible. If the project is proposing a new private (occupational crossing), the Proponent would need to provide an options analysis investigating all other means of access to the site. A new private (occupational) crossing would only be considered by the railway manager (Aurizon) in a very limited set of circumstances. The placement and design of any proposed occupational crossing would be subject to Australian Level Crossing Assessment Model (ALCAM) and the railway manager's assessment under section 255 of the Transport Infrastructure Act 1994. TMR recommends the Proponent discuss the matter with Aurizon as soon as practical to avoid delays and resulting difficulty in obtaining project approvals. Amend the EIS to provide an options analysis investigating all other means of accessing the site without creating a new level crossing. Amend the EIS to provide Aurizon's written in-principal agreement as to the proposed level crossing arrangement for the project.	Consultation is ongoing with the railway manager (Aurizon Network) in relation to various interactions (including various existing crossings) involving the railway in the vicinity of Saraji Mine. This represents routine activity and the crossing will be constructed following then necessary completion of a relevant new or amended formal agreement with the railway manager prior to the commencement of the project. BMA has in place many such agreements with the railway manager. Based on the ongoing interactions and long-standing relationship, seeking a written in-principle agreement would not be aligned to how the two parties manage the ongoing relationship nor would the network manager accept the merits of the concept of an in-principle agreement.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Transport and Main Roads cover letter	12.010	Chapter 03 Project Description Chapter 14 Transport	Section 3.7.13 Figure 3-11 Section 14.4.1 Section 14.4.1 Figure 14-3 Section 14.6.2 Section 14.7.2	Figure 3-11 identifies an intersection upgrade immediately located west of the existing railway corridor on Dysart-Moranbah Road (/Saraji Road). Section 14.4.1 and Figure 14-3 note that a new railway level crossing on the Norwich Park Branch Railway (railway corridor) is proposed. The level crossing will include boom gates and flashing lights control on Norwich Park Branch rail line. Section 14.6.2 identifies short stacking/vehicle queueing will be an issue at this new level crossing at the new Dysart-Moranbah Road intersection. Approximately 34m is available. Section 14.7.2 states: 'During the detailed design stage of the Project, ALCAM assessments may be required by the rail authority. If required, these assessments will be conducted on all level crossings substantially affected by the Project in order to finalise the required treatment options.'	TMR does not support new open railway level crossings in accordance with the Queensland Level Crossing Safety Strategy 2012 to 2021 which seeks to eliminate railway level crossings, with a clear objective to add no further open level crossings to the network. In addition, any proposed private (occupational) crossing of the railway corridor must be eliminated and minimised wherever practical and possible. If the project is proposing a new private (occupational crossing), the Proponent would need to provide an options analysis investigating all other means of access to the site. A new private (occupational) crossing would only be considered by the railway manager (Aurizon) in a very limited set of circumstances. The placement and design of any proposed occupational crossing would be subject to Australian Level Crossing Assessment Model (ALCAM) and the railway manager's assessment under section 255 of the Transport Infrastructure Act 1994. TMR recommends the Proponent discuss the matter with Aurizon as soon as practical to avoid delays and resulting difficulty in obtaining project approvals. Amend the EIS to provide an options analysis investigating all other means of accessing the site without creating a new level crossing. Amend the EIS to provide Aurizon's written in-principal agreement as to the proposed level crossing arrangement for the project.	The amended EIS presents BMA's commitment to undertake consultation with the Aurizon railway manager to obtain written in principal agreement for proposed level crossings is the responsibility of BMA. Following the BMA consultation with Aurizon, written in principal agreement will be provided if successful.
Department of Transport and Main Roads cover letter	12.011	Chapter 03 Project Description Chapter 08 Surface Water Resources Appendix E-3 Hydrology, Hydraulics and Geomorphology Technical Report	Section 3.4.1 Figure 3-3	Figure 3-3 shows the project consists of a rail spur and balloon loop connection with the existing Norwich Park Branch Railway (railway corridor). Additionally, the project proposes to locate stockpiles, coal processing plants, multiple dams etc immediately adjacent and downstream of the railway corridor. The flood impact assessment undertaken is focussed on the issue of underground mine subsidence, and what impacts this might have on surface water flooding. A Stormwater Management Plan and Flood Impact Assessment have not been provided to quantify the stormwater and flooding impacts of the project and indicate how they are to be managed.	Amend the EIS and supporting documents to demonstrate how the project complies with PO16 to PO17 of the State Code 2: Development in a Railway Environment, PO10 to PO12 of the State Code 6: Protection of State Transport Networks of the State Development Assessment Provisions and Section 2.8 of the Guide to Development in a Transport Environment: Rail. Provide a Stormwater Management Plan and Flood Impact Assessment demonstrating that the management of stormwater (quantity) post development can achieve a no worsening impact (on the pre-development condition) for all flood and stormwater events that exist prior to development and up to a 1% Annual Exceedance Probability (AEP). This should include at least the following flood and stormwater events: 63.2%, 50%, 20%, 10%, 5%, 2% and 1% AEP. Stormwater and flood management for the project must ensure no worsening or actionable nuisance to the railway corridor, caused by peak discharges, flow velocities, water quality, sedimentation and scour effects. The report should also demonstrate that flood storage capacity is maintained on the site with the development. Overland flow paths/hydraulic conveyance should be maintained on the site as part of the project. In particular, the following should be addressed: - Pre-development condition: Verify the existing drainage characteristics of the site, in relation to the railway corridor such as through a site detail and contour survey. All relevant legal points of discharge for the development site should be identified. - Earthworks plan: Provide an earthworks plan, including cross sections/elevations, and any required supporting technical details clearly showing the location and extent of proposed excavation and filling (earthworks), including likely volumes of cut and fill adjacent to the railway corridor and the resulting cut: fill balance. - Catchment analysis: Provide pre-development and post-development catchment plans that clearly identify all internal catchments on the site, external catchments draining into the site, the flow paths (direction of flow) within each catchment, the size of each catchment and the legal point of discharge for each catchment. - Flood impact assessment: provide a hydraulic and hydrological analysis demonstrating the design flood peak discharges for the site and surrounding area which exist in the pre and post development scenarios for all flood and stormwater events up to a 1% Annual Exceedance Probability addressing the following: - At least the following flood and stormwater events: 63.2%, 50%, 20%, 10%, 5%, 2% and 1% AEP. - The flood model needs to adequately encompass the existing and future railway corridor. Mapping (afflux, water level/depth and velocity) should be provided to clearly illustrate the pre-development scenario, and the post development impacts for all relevant design events. Maps scales should be altered to clearly show the potential impacts on the state-controlled transport corridors. The afflux maps should be revised such that a negligible impact is referred to as +/- 10mm. The report should demonstrate that flood storage capacity is maintained on the site with the development and any early temporary works. Overland flow paths/ hydraulic conveyance should be maintained on the site as part of the project. - The flood model should be underpinned by a revised General Arrangement Plan which clearly shows the pre and post development impervious area on the site. - The flood model should be underpinned by an earthworks plan that clearly shows the location and extent of proposed excavation and filling (earthworks), including likely volumes of cut and fill and the resulting cut: fill balance. - Include details of the mitigation measures proposed to address any potential stormwater and flooding impacts of the project. - Maintain the pre-development condition: The pre-development flow scenario will need to be replicated in the post development condition. The project should not impede or interfere with any drainage, stormwater or floodwater flows, including sheet flows, from the railway corridor or vice versa. Retaining structures, filling/excavation, landscaping, buildings and structures or any other works to the land should be designed to include provision for drainage so as not to adversely impact on the railway corridor. The development design will need to address any concentration of flows, potential for back-up/ponding and scour/erosion which may undermine the railway corridor. - Water quantity assessment: The peak discharge analysis should provide adequate details of the pre and post development impervious area of the site and give adequate consideration to the detention basin requirements of the QUDM, Fourth Edition. - Conceptual drainage layout: Provide a conceptual stormwater drainage layout plan showing the proposed internal stormwater network on the site, including, drains, pits, dams, detention basins and the like, demonstrating how all surface water flows will be collected and conveyed to the legal points of discharge. This should include the conceptual design and sizing of drainage infrastructure such as but not limited to diversion drains. - Mitigation measures: Include details of the mitigation measures proposed to address any potential stormwater and flooding impacts of the project. The design flood peak discharges should be shown for the mitigated case to demonstrate there is no worsening impact on the railway corridor. All mitigation measures must be located on the site and not in the railway corridor.	BMA commitment to comply with performance outcomes for development in a railway corridor is outlined in Section 3.6 of Appendix J-1.During the detailed design stage of the Project, drainage design and hydrology assessments may be undertaken

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Transport and Main Roads cover letter	12.012	Chapter 03 Project Description Chapter 20 Hazards, Health and Safety	Section 3.7.14 Section 20.5.4 Section 20.6.4	The development involves dangerous goods in proximity to the existing railway corridor including the use and transport of dangerous goods to and from the site. Any development in proximity to a railway corridor must be designed and constructed to ensure that impacts of a fire, explosion, spill, gas emission or dangerous goods incident can be appropriately mitigated. These are matters/issues which fall within considerations identified and explained through State Code 2: Development in a Railway Environment, of the State Development Assessment Provisions which should be addressed within the draft EIS for completeness.	Amend the EIS and supporting documents to demonstrate how the project will comply with PO23, Table 2.2.1, of State Code 2: Development in a Railway Environment of the State Development Assessment Provisions. In particular, the proponent should demonstrate whether the proposed uses on the site will involve the handling or storage of hazardous chemicals above the threshold quantities identified in AO23.1. Where these thresholds are exceeded, the proponent is required to provide information demonstrating how the project will be designed and constructed to minimise the impacts of a fire, explosion, spill, gas emission or dangerous goods incident on the railway corridor. The proponent should provide a Registered Professional Engineer of Queensland (RPEQ) certified risk assessment in accordance with Chapter 2.6 – Dangerous Goods and Fire Safety and Appendix 1 – Development Risk Assessment Guide of the Guide to Development in a Transport Environment; Rail and demonstrate how measures will be incorporated into the development design to minimise the identified risks. This should address the following risks, amongst other identified risks: ☐ minimising or controlling the outbreak of fire; ☐ controlling smoke and/or gas release dispersion; ☐ minimising heat build-up in structures; ☐ limiting the possibility of structural components being blast damaged; ☐ providing stability or contingency measures in the project; ☐ providing safe emergency access and egress to and from the railway; and ☐ ensuring effective containment and clean-up of dangerous goods incidents.	BMA has included a commitment to develop the Project in accordance with State code 2: Development in a Railway Environment of the State Development Assessment Provisions. During detailed design, BMA will undertake assessment of the threshold quantities identified in A023.1 for the handling or storage of hazardous chemicals. This is described in Appendix A-3 (Approvals Framework).
Department of Transport and Main Roads cover letter	12.013	Chapter 03 Project Description Chapter 20 Hazards, Health and Safety	Section 3.7.14 Section 20.5.4 Section 20.6.4	The development involves dangerous goods in proximity to the existing railway corridor including the use and transport of dangerous goods to and from the site. Any development in proximity to a railway corridor must be designed and constructed to ensure that impacts of a fire, explosion, spill, gas emission or dangerous goods incident can be appropriately mitigated. These are matters/issues which fall within considerations identified and explained through State Code 2: Development in a Railway Environment, of the State Development Assessment Provisions which should be addressed within the draft EIS for completeness.	Amend the EIS and supporting documents to demonstrate how the project will comply with PO23, Table 2.2.1, of State Code 2: Development in a Railway Environment of the State Development Assessment Provisions. In particular, the proponent should demonstrate whether the proposed uses on the site will involve the handling or storage of hazardous chemicals above the threshold quantities identified in AO23.1. Where these thresholds are exceeded, the proponent is required to provide information demonstrating how the project will be designed and constructed to minimise the impacts of a fire, explosion, spill, gas emission or dangerous goods incident on the railway corridor. The proponent should provide a Registered Professional Engineer of Queensland (RPEQ) certified risk assessment in accordance with Chapter 2.6 – Dangerous Goods and Fire Safety and Appendix 1 – Development Risk Assessment Guide of the Guide to Development in a Transport Environment; Rail and demonstrate how measures will be incorporated into the development design to minimise the identified risks. This should address the following risks, amongst other identified risks: ☐ minimising or controlling the outbreak of fire; ☐ controlling smoke and/or gas release dispersion; ☐ minimising heat build-up in structures; ☐ limiting the possibility of structural components being blast damaged; ☐ providing stability or contingency measures in the project; ☐ providing safe emergency access and egress to and from the railway; and ☐ ensuring effective containment and clean-up of dangerous goods incidents.	Section 20.6.4, Chapter 20 of the EIS has been updated to reflect BMA's commitment to adhering to the requirements of PO23, Table 2.2.1 of State Code 2: Development in a Railway Environment of the State Development Assessment Provisions, should the thresholds identified in AO23.1 be exceeded.
Department of Transport and Main Roads	12.014	Chapter 14 Transport Appendix J-1 Traffic and Transport Impact Assessment	N/A	TMR has provided comments about the traffic generation figures and road names provided in Appendix J requiring revision. These changes should be reflected throughout the EIS, including Chapter 14. See TMR's comments on Appendix J for more details.	Review and amend the EIS to clarify traffic generation figures and road names in accordance with TMR's comments on Appendix J-1.	Road name inconsistencies have been amended throughout Chapter 14 and Appendix J-1 with the correct SCR names sourced from Queensland Globe.
Department of Transport and Main Roads	12.015	Chapter 14 Transport Appendix J-1 Traffic and Transport Impact Assessment	N/A	The EIS states that there will be an additional two to three trains per day transporting product coal to ship loading facilities but provides no discussion of these additional train trips in relation to the current amount of train traffic on the line.	Amend the EIS to clarify the current number of trains per day on the line and discuss this in relation to the proposed additional train trips.	The amended EIS considers the assumptions appropriate regarding estimated trains per day due to daily variability.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Transport and Main Roads	12.016	Chapter 14 Transport	Section 14.4.1 Figure 14-3	Figure 14-3 identifies two impacted railway level crossings on The Norwich Park Branch Railway at Lake Vermont Access Road (ID: 3605) and Peak Downs Mine Road (ID:20,134). There is a third existing level crossing located at Dysart-Moranbah Rd / Existing Saraji Mine Entrance (labelled as Intersection 2 in Section 14.4.1) that has been omitted from Figure 14-3. The Peak Downs Mine Road level crossing is protected by active safety controls (flashing lights and boom gates) and passive safety controls (railway width markers, road cross hatching, signage). Lighting is also provided. This crossing consists of two lanes of traffic over sealed road surface and overhead line equipment in the railway corridor (height limits). The Lake Vermont Access Road level crossing is protected by passive safety controls (stop signage). This crossing consists of single width road and overhead line equipment in the railway corridor (height limits). There is approximately 40m between the rail tracks and the Dysart-Moranbah Road intersection. The EIS notes: 'Existing traffic volumes on this road are very low and are either associated with a small number of rural residences or exploration activities for the existing Saraji Mine. An accommodation village for the construction workforce is proposed to be constructed on a new access road off Lake Vermont Road. Therefore, Lake Vermont Road will be utilised for transporting workers between the Project Site and the villages.' The EIS also notes that a new intersection is required at Lake Vermont Road/ Dysart-Moranbah Road. This intersection will be undertaken in the detailed design stage. Section 14.7.2 states: 'During the detailed design stage of the Project, ALCAM assessments may be required by the rail authority. If required, these assessments will be conducted on all level crossings substantially affected by the Project in order to finalise the required treatment options.' The EIS has not assessed the potential safety impacts on the existing railway level crossings identified above during construction and operational stages. The project will increase road traffic, including heavy vehicles and over-dimensional road loads over existing railway level crossings. No information has been provided which clearly 2: Development in a Railway Environment, PO7 to PO9 of the State Code 6: Protection of state transport networks of the State Development Assessment Provisions and Section 2.2 of the Guide to Development in a Transport Environment: Rail for all impacted railway level crossings. identifies the potentially impacted railway level crossings or which demonstrates that the level of safety risk at the impacted railway level crossings is not worsened. This can only be demonstrated via ALCAM assessments completed by the relevant railway manager using traffic information verified by the relevant road authority. Additionally, short stacking issues would need to be addressed. Evidence of such assessments has not been provided by the proponent. The safety impact on all existing railway level crossings must be assessed before project is approved. TMR requires amendments to the EIS and Appendix J-1 Traffic and Transport Impact Assessment to demonstrate how the project will comply with PO20 and PO24 of the State Code	Amend the EIS to identify all railway level crossings impacted by the construction of the development and the level of existing safety controls at these crossings i.e. active, passive or grade separated. Amend the Draft EIS and TIA to demonstrate how the project will comply with PO20 and PO24 of the State Code 2: Development in a Railway Environment of the State Development Assessment Provisions and Section 2.2 of the Guide to Development in a Transport Environment: Rail. In particular, the following should be addressed: - detail the expected traffic distribution on the road network as a result of the project, including haulage routes and workforce transport routes during construction. - identify any and all railway level crossing/s likely to be impacted by development generated traffic (including construction and staff movements). This should include level crossings on local and state-controlled roads and any private (occupational) level crossings. for each impacted railway level crossing provide: (a) Australian Level Crossing Assessment Model o the expected timeframe for the delivery of the project including the commencement of construction and the completion of the development (including any stages). o existing traffic flows (expressed as vehicles per day) over the impacted railway level crossing/s, including daily (peak hour) fluctuations, and number and percentage of heavy vehicles and buses (workforce transport). o the expected background traffic growth (expressed as vehicles per day) over the impacted railway level crossing/s, including the number and percentage of heavy vehicles and buses. This should include background traffic growth from the anticipated commencement of construction and each development stage to a ten-year horizon. o the expected development generated traffic (expressed as vehicles per day), including daily fluctuations (peak hour) and percentage of heavy vehicles and buses, that will pass over the impacted railway level crossing/s from the commencement of construction, and each development stage to a ten year design horizon. It is noted that workers may be transported via bus from workers camps. o the maximum size and type of vehicle (including length, width, height and weight) anticipated over the impacted railway level crossing/s as a result of the development during construction and on-going operation (including any stages). This should include any over-mass and over-dimension vehicles used to transport components. o the following data table should be populated for each impacted railway level crossing: [Refer to submission '12. Department of Transport and Main Roads submission' for table] (b) Short stacking Development generated traffic must not worsen vehicular queuing (short stacking) issues over impacted railway level crossing/s. In particular, provide the following for each impacted railway level crossing: - Demonstrate that there is sufficient clearance between each railway level crossing and the relevant intersection/vehicular access location allow the maximum size of vehicle used in the operation to queue. The minimum clearance should be 5m from the edge running rail (of the closest railway track) as per Section 5.4 – Short Stacking and Figure3.2 – Yellow Box Marking of AS1742.7:2016 Manual of Uniform Traffic Control Devices, Part 7: Railway plus the length of the maximum design vehicle. - Provide a plan accurately showing the available clearance between each railway level crossing and relevant intersection/access point and demonstrate how the maximum vehicle length can be accommodated with the 5m setback from the closest track. Additionally, the vehicle must not encroach on any safety controls, such as not limited to pavement marking (for example, box marking), for the railway level crossing or road. - Provide a RPEQ certified swept path analysis based on the maximum design vehicle for turns into and out of the railway level crossing Over-dimensional Road Loads: Under the Transport Infrastructure (Rail) Regulation 2006 permission from the Railway Manager (Aurizon) is required to take over-dimensional road loads across Aurizon Infrastructure (e.g. rail level crossings). Further information can be obtained from Aurizon's website at: https://www.aurizon.com.au/what-we-deliver/network/over-dimensional-road-loads	Figure 14-3 in Chapter 14 of the EIS has been amended to include Intersection 2 as described in Section 14.4.1. Section 5.1.2 of Appendix J-1 and Section 14.4.1 of Chapter 14 detail the transport routes and roads that will be utilised during construction and operation. Section 5.1.6 of Appendix J-1 and Section 14.6.2 of Chapter 14 details the level crossings that will be impacted by an increase in vehicle and/or train volumes associated with the Project. During the detailed design stage of the Project, ALCAM assessments may be required by the rail authority. If required, these assessments will be conducted on all affected level crossings in order to finalise the required treatment options.
Department of Transport and Main Roads	12.017	Chapter 14 Transport Appendix J-1 Traffic and Transport Impact Assessment	Section 14.4.1 Figure 14-2 Section 5.1.6 Figure 3	Figure 14-2 in Chapter 14 and Figure 3 in Appendix J-1 do not include the location of the existing level crossing on Peak Downs Mine Road. The EIS lists the level crossing as the Peak Downs Mine Road / Norwich Park Branch Line level crossing.	Update the figures in the EIS to include the location of the Peak Downs Mine Road / Norwich Park Branch Line level crossing.	Figure 14-2 in Chapter 14 and Figure 3 in Appendix J-1 show the existing intersections (excluding the level crossings) and Figure 14-3 in Chapter 14 and Figure 4 in Appendix J-1 show the level crossings (excluding the intersections). No update has been made as the Peak Downs Mine Road / Norwich Park Branch Line level crossing and the Dysart-Moranbah Road (/Saraji Road)/ Existing Saraji Mine Entrance level crossing are shown.
Department of Transport and Main Roads	12.018	Chapter 14 Transport Appendix J-1 Traffic and Transport Impact Assessment	Section 14.4.1 Figure 14-3 Section 5.1.6 Figure 4	Chapter 14, Figure 14-3 and Appendix J-1, Figure 4 show the level crossings within the Project study area but omit the existing level crossing on the mine's existing access road. This level crossing is near the intersection of the mine's existing access road and Dysart-Moranbah Road (/Saraji Road), immediately south of the existing rail balloon loop. The EIS sometimes describes the level crossing as being 'Intersection 2 Dysart-Moranbah Road / Existing Saraji Mine Entrance'. This existing level crossing should be considered separately to the existing intersection as per TMR's other comments on level crossings.	Update the figures in the EIS to include the location of the Dysart-Moranbah Road (/Saraji Road)/ Existing Saraji Mine Entrance level crossing.	Figure 14-2 in Chapter 14 and Figure 3 in Appendix J-1 show the existing intersections (excluding the level crossings) and Figure 14-3 in Chapter 14 and Figure 4 in Appendix J-1 show the level crossings (excluding the intersections). No update has been made as the Peak Downs Mine Road / Norwich Park Branch Line level crossing and the Dysart-Moranbah Road (/Saraji Road)/ Existing Saraji Mine Entrance level crossing are shown.
Department of Transport and Main Roads	12.019	Chapter 14 Transport Appendix J-1 Traffic and Transport Impact Assessment Chapter 03 Project Description	Section 14.5 Section 5.3.3.2 Table 17 Section 3.7.16 Section 3.6.6	The transport summaries for project material during the Construction and Operation Phases of the project provided in Section 14.5 do not provide sufficient information to allow for a review of the impact assessment of the transport demand for the project. While more detail is provided in section 5.3.3.2 of the Traffic and Transport Impact Assessment (Appendix J-1) concerning project material in the Construction Phase, information concerning likely on-going transport demands associated with the Operation Phase appears incomplete. For example, it is not apparent from the transport summary and the impact assessment whether transport demands arising from workforce consumables and wastes, project wastes and maintenance of plant and equipment consumables are included in the assessment. The proponent has indicated in Section 3.7.16 (Chapter 3 Project Description), that non-resident workforce accommodation will be provided at off-site accommodation villages during the Operation Phase. The transport of consumables and wastes associated with the project workforce accommodated at off-site locations should be included in the assessment of transport demand for the project. Further, the proponent has indicated in Section 3.6.6 (Chapter 3 Project Description) the potential for construction of an accommodation village for up to 1000 personnel. It is not clear from the Construction Phase transport summary that the transport demands associated with the support of the construction workforce (consumables, wastes) have been included in the construction transport demand assessment.	Update the Construction and Operation Phase transport summaries in Chapter 14 to include quantitative estimates of project consumables and wastes estimates that are associated with supporting the workforce, maintenance of plant and equipment and the subsequent transport demand. Include the estimation of the transport demand associated with the off-site accommodation of personnel directly attributable to the project.	Table 13 of Appendix J-1 outlines general and recyclable waste. Table 12 and Table 13 of Appendix J-1 have been included in Chapter 14, Section 14.5.1 as Table 14.11 and 14.12 to provide more detail on project consumables and waste.
Department of Transport and Main Roads	12.020	Chapter 20 Hazards, Health and Safety	Section 20.6.5	The discussion of the emergency management in section 20.6.5 does not include the railway manger (Aurizon) as a stakeholder.	Amend the EIS to include the railway manager (Aurizon) as a stakeholder when preparing the emergency management plan.	Chapter 20 of the EIS has been amended to include Aurizon as a stakeholder with regard to the preparation of the emergency management plan.
Department of Transport and Main Roads	12.021	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.1.2 General	The EIS appears to incorrectly name various roads. For example, section 5.1.2 of Appendix J show Dysart-Moranbah Road (519) as a transport route from Rockhampton, south of the Project Site. This is incorrect. The road is Dysart-Middlemount Road (519). The transport route from Mackay, north of the Project Site includes Peak Downs Mine Road (R44) and Dysart Moranbah Road (519). Dysart Moranbah Road is not SCR Road ID 519, it is named Saraji Road on mapping and is also part of R44. Neither roads are State-controlled roads. The transport route from Dysart, south of the Project Site, is via Saraji Road (R44) which is not a State-controlled road. The State-controlled road section of the transport route from Moranbah, north of the Project Site does not include Peak Downs Mine Road (R44) or Dysart-Moranbah Road. Note comment above about Dysart Moranbah Road.	Amend the EIS to correct the road names and State-controlled road ID numbers. Re-assess the impact on the State-controlled road network using only State-controlled roads.	EIS has been amended throughout Chapter 14 and Appendix J-1 to correct the road names and transport routes with the correct SCR names sourced from Queensland Globe. This includes amending Dysart-Moranbah Road as Peak Downs-Dysart Road. Section 5.1.2 of Appendix J has been amended with the correct transport routes.
Department of Transport and Main Roads	12.022	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.1.5 Figure 2	Figure 2 does not clearly show correct State-controlled road names particularly between the Peak Downs Highway and Dingo Mt Flora Road.	Update the EIS to revise the map to clearly indicate correct road names and the State-controlled road network.	Figure 2 of Appendix J-1 has been amended to clearly indicate the correct SCR names.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Transport and Main Roads	12.023	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.1.6	The road transport network section refers to Goonyella Road. This road should be referred to as Moranbah Access Road to be consistent with State mapping.	Amend Appendix J-1 to include correct road names for clarity.	Appendix J-1 and Chapter 14 have been amended to reference Moranbah Access instead of Goonyella Road.
Department of Transport and Main Roads	12.024	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.1.6.1.1 General	The road connection between Peak Downs Mine and Dysart is identified as Dysart-Moranbah Road (519). This is incorrect. The road is Saraji Road (R44).	Amend Appendix J-1 to refer to correct road names.	A review of Queensland Globe indicates that Saraji Road is referred to as Peak Downs-Dysart Road. Appendix J-1 and Chapter 14 have been amended with the correct road names throughout.
Department of Transport and Main Roads	12.025	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.3.2.2 Table 13	There are inconsistencies in Table 13 Quantities for construction materials and equipment. Some examples (not exhaustive) include the following – - Construction Equipment – units are Megatonnes, total quantity is 7200 MT which equals 7,200,000,000 tonnes. 480 various vehicle types have been nominated as the heavy vehicle volume. This is incorrect. Clarify the units and re-calculate volumes of heavy vehicles. - Conveyor belts – 11 kms shown as total requirement, but 225 kms shown in peak year. - Other equipment – Same total quantity as peak year but different heavy vehicle volumes. - Asphalt – 950 m3 total quantity required but only 1 truck nominated for haulage. 750 m3 required in peak year but 0 trucks nominated. - Bulk Bitumen – same concerns as Asphalt. - Waste oil, sludge and grease – 10 tonnes required in peak hour but 0 trucks nominated. - Oil filters – total 0.3 tonnes required (300kg), 30 trucks nominated.	Amend the EIS to correct and clarify Table 13. Amend the remaining sections of Appendix J-1 to reflect the correct heavy vehicle volumes. Provide electronic spreadsheets that show how the heavy vehicle volumes were calculated.	Table 13 of Appendix J-1 has been amended to correct and clarify inconsistencies throughout.
Department of Transport and Main Roads	12.026	Appendix J-1 Traffic and Transport Impact Assessment	Section 5.3.3.2 Table 17	The number of heavy vehicles required in Table 17 Quantities for operation materials and equipment appear incorrect. Some examples (not exhaustive) include the following – - Magnette – 202 B-Doubles pa nominated for 8,000,000 tonnes pa. A B-Double payload is approximately 40 tonnes. 8,000,000/40 = 200,000 B-Doubles pa. - Flocculant – 214 Trucks pa nominated for 1,000,000 tonnes pa. A Tandem Truck has a payload of 13 tonnes. 1,000,000/13 = 76,923 Trucks pa. - Diesel – 16 Road Trains pa nominated for 720,000 tonnes pa. Maximum vehicle allowed on SCR is AB-Triple Road Train with 60 tonne payload. 720,000/60 = 12,000 Road Trains pa. - MIBC – 18 Semi-trailers pa nominated for 360,000 tonnes pa. A semi-trailer payload is approximately 26.5 tonnes. 360,000/26.5 = 13,585 Semi-trailers pa.	Correct and clarify Table 17. Amend the remaining sections of Appendix J-1 to reflect the correct heavy vehicle volumes. Provide electronic spreadsheets that show how the heavy vehicle volumes were calculated.	Approximate quantities have been amended in Table 17 of Appendix J-1.
Department of Transport and Main Roads	12.027	Appendix J-1 Traffic and Transport Impact Assessment	Section 6.2.1.7	Garnham Drive is a State-controlled road and is part of Dysart Middlemount Road (519). The location of the Workers Camp access road intersection is unclear. It is presumed that the Peak Downs Highway / Workers accommodation camp access road intersection refers to the Buffel Park accommodation camp.	Update the EIS to identify the Workers Camp and clarify the location of the access on Dysart Middlemount Road (519). Identify the Workers Camp and location of the access on the Peak Downs Highway.	Figure 3 of Appendix J-1 has been updated to show the location of the workers. The access is adjacent to each camp.
Department of Transport and Main Roads	12.028	Appendix J-1 Traffic and Transport Impact Assessment	Section 6.2.4	The assessment was based on 2016 AADT data. 2019 AADT data is available from TMR.	Obtain current AADT data from TMR and amend Appendix J-1 accordingly.	Appendix J-1 and Chapter 14 of the EIS have been updated with 2019 AADT data which included a complete revision of all technical calculations.
Department of Transport and Main Roads	12.029	Appendix J-1 Traffic and Transport Impact Assessment	Section 4.2	Section 4.2 states: ‘To inform the Traffic impact assessment (TIA), an inspection of the existing road network was undertaken in February 2011. If 2011 was the inspection year, the results would not necessarily reflect the road network in 2021.’	Confirm the year in which the inspection of the existing road network was undertaken and if necessary complete a new inspection of the existing road network and update the TIA to ensure it reflects the existing road network.	The latest site inspection of the existing road network was undertaken in September 2022. Chapter 14 and Appendix J-1 have been updated to reflect this. Site inspection photos have been included within Appendix J-1.
Department of Transport and Main Roads	12.030	Appendix J-1 Traffic and Transport Impact Assessment	Executive Summary	The EIS states: ‘The assessment of road impacts has been undertaken based on the Guide to Traffic Impact Assessment (GTIA) released by the Department of Transport and Main Roads (TMR) in 2017.’ This version of the GTIA was superseded in December 2018.	Update the EIS and TIA to adopt and adhere to the latest version of the GTIA released by TMR as needed.	No additional requirements from latest GTIA require amendment. The reference has been updated to GTIA 2018 in Chapter 14 and Appendix J-1.
Department of Transport and Main Roads	12.031	Appendix O-1 Summary of Commitments	Item 62	Item 62 is: ‘A Traffic Management Plan will be developed and implemented prior to construction to address safety issues on public roads, including but not limited to: - Transportation of oversize vehicles and use of escorts and/or public notices - Upgrade Lake Vermont Road for approximately 11 km from Dysart-Moranbah Road (if required for the proposed accommodation village), including sealing of the road, assessment of the existing corrugated iron tunnel currently in place under the Norwich Park Branch rail line to determine the structural integrity and tunnel dimensions required for the Project and potential upgrade of the existing tunnel - Provide intersection lighting at Intersection 1 (Lake Vermont Road / Dysart-Moranbah Road) to improve visibility in low light conditions - Construct proposed Intersection A on Dysart-Moranbah Road, including deceleration lanes on the north and south approaches to the intersection on Dysart-Moranbah Road, and active devices such as boom barriers and flashing lights in addition to road lighting at the intersection - Provide intersection lighting at Intersection 3 (Peak Downs Mine Access / Peak Downs Mine Road / Dysart-Moranbah Road) to improve visibility in low light conditions.’ The Traffic Management Plan should be prepared in accordance with the latest GTIA.	Revise the wording of Item 62 as follows: ‘A Traffic Management Plan will be developed in accordance with the latest Transport and Main Roads Guide to Traffic Impact Assessment, no later than 6 months prior to construction and implemented prior to construction to address safety issues on public roads, including but not limited to: - Transportation of oversize vehicles and use of escorts and/or public notices - Upgrade Lake Vermont Road for approximately 11 km from Dysart-Moranbah Road (if required for the proposed accommodation village), including sealing of the road, assessment of the existing corrugated iron tunnel currently in place under the Norwich Park Branch rail line to determine the structural integrity and tunnel dimensions required for the Project and potential upgrade of the existing tunnel - Provide intersection lighting at Intersection 1 (Lake Vermont Road / Dysart-Moranbah Road) to improve visibility in low light conditions - Construct proposed Intersection A on Dysart-Moranbah Road, including deceleration lanes on the north and south approaches to the intersection on Dysart-Moranbah Road, and active devices such as boom barriers and flashing lights in addition to road lighting at the intersection - Provide intersection lighting at Intersection 3 (Peak Downs Mine Access / Peak Downs Mine Road / Dysart-Moranbah Road) to improve visibility in low light conditions.’	In the amended EIS, Appendix O-1 Summary of commitments, Commitment 82, reflects BMA's commitment to develop a Traffic Management Plan as proposed by Department of Transport and Main Roads.
Department of Transport and Main Roads	12.032	Appendix O-1 Summary of Commitments	Item 63	Item 63 of Appendix O states that: ‘BMA will undertake a Pavement Impact Assessment (PIA) during the detailed design phase in consultation with the Department of Transport and Main Roads (TMR).’ This commitment does not include implementation of agreed mitigation measures. TMR expects BMA will implement the agreed mitigation measures in accordance with the GTIA.	Revise the wording of Item 63 as follows: ‘BMA will undertake a Pavement Impact Assessment (PIA) in accordance with the GTIA during the detailed design phase and no later than 6 months prior to construction, in consultation with the Department of Transport and Main Roads (TMR) and pay an agreed (between BMA and TMR) monetary contribution to TMR, and/or implement other agreed implementation measures to mitigate pavement impacts on the State-controlled road network.’	In the amended EIS, Appendix O-1 Summary of commitments, Commitment 80, reflects BMA's commitment to develop a Pavement Impact Assessment as proposed by Department of Transport and Main Roads.
Department of Transport and Main Roads	12.033	Appendix O-1 Summary of Commitments Appendix J-1 Traffic and Transport Impact Assessment	Items 64 to 90 General	TMR acknowledges that project timeframes are unknown and that an updated traffic impact assessment will be required. The updated assessments will need to be based on the revisions required at Appendix J-1 and more certain estimates of haul routes and vehicles that will become available as the project progresses. This requirement for the updated traffic impact assessment should be reflected in the Summary of Commitments.	Amend Appendix O to include new commitments as follows. ‘# During the detailed design phase and no later than 6 months prior to construction, in consultation with TMR, BMA will prepare an updated Traffic Impact Assessment including, amongst other things a Road Use Management Plan, in accordance with section 7.6 of the GTIA and in consultation with TMR, and implement agreed management and / or mitigation measures. # During the detailed design phase and no later than 6 months prior to construction, in consultation with TMR, BMA will undertake a road safety audit in accordance with Part C – section 9 of the GTIA and implement identified mitigation measures.’	Appendix O-1, Table 1 has been amended to include commitments 116 and 117 as follows: 116 - During the detailed design phase and no later than 6 months prior to construction, in consultation with TMR, BMA will prepare an updated Traffic Impact Assessment including, amongst other things a Road Use Management Plan, in accordance with section 7.6 of the GTIA and in consultation with TMR, and implement agreed management and / or mitigation measures. 117 - During the detailed design phase and no later than 6 months prior to construction, in consultation with TMR, BMA will undertake a road safety audit in accordance with Part C – section 9 of the GTIA and implement identified mitigation measures.
Department of Transport and Main Roads	12.034	Appendix O Summary of Commitments General		The eighth dot point identifies the following commitment: ‘a Traffic Management Plan will be prepared and implemented prior to construction considering the requirement for escorts and/or public notices during the transportation of oversize vehicles on public roads.’ Further commitments are required by TMR to ensure any impacts on the State-controlled road network are assessed and addressed. These requirements are explained in more detail in TMR's comment on Appendix O.	Revise the Executive Summary to reflect TMR's requested changes to Appendix O Summary of Commitments.	The Executive Summary in the amended EIS reflects the findings of Appendix J-1 Traffic and Transport Impact Assessment and management commitments identified in Appendix O-1 Summary of commitments, including Traffic Management Plan as required by Department of Transport and Main Roads (Commitment 82).
Department of Transport and Main Roads	12.035	Chapter 03 Project Description Appendix J-1 Traffic and Transport Impact Assessment Executive Summary		Section 3.6.4 of Chapter 3 states: ‘Construction equipment will mainly be transported by road to the Project Site, on standard or over-dimensional loads. The majority of the materials and equipment for the construction stage will be sourced from Mackay and/or Rockhampton. Large items that cannot be divided into smaller components, such as large coal crushing and handling equipment, will be transported on State roads under permit. Where necessary, these vehicles will be accompanied by safety escorts.’ However, the Traffic and Transport Assessment sections 6.2.6, 9.1.6 and the Executive Summary state: ‘The assessment concluded that Project heavy vehicles are typically road trains and articulated vehicles and it is not expecting any Over-Size-Over-Mass (OSOM) vehicles.’	Confirm the statements regarding OSOM provided in the Appendix J Traffic and Transport Impact Assessment are correct and that there will not be a requirement for OSOM movements during all phases of the project. However, if OSOM movements are likely, amend the EIS to correctly quantify them (e.g. in the Construction and Operation Phases transport summaries and in Appendix J Traffic and Transport Impact Assessment).	OSOM vehicles are not required, as per Appendix J-1. Section 3.6.4 of Chapter 3 has been amended to state that equipment will be transported by standard freight vehicles, not OSOM vehicles.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Regional Development, Manufacturing and Water	13.001	Chapter 1, Introduction Chapter 9, Groundwater	Section 1.7, Table 1.1 Section 9.2.2, State Legislation	The draft Environmental Impact Statement (EIS) discusses the right to take associated water under the Mineral Resources Act 1989.	Amend: Amend the draft EIS to discuss the requirement to apply to the Department of Regional Development, Manufacturing and Water for an associated water licence to facilitate the take of associated water. Reason: On 6 December 2016, the right to take associated water was expanded to the mining sector. This right is granted under s334ZP of the Mineral Resources Act. The draft EIS (Chapter 1, Section 1.7, Figure 1.1, Pg. 10) states the proponent applied for an environmental authority in 2013. As per s839 of the Mineral Resources Act, if the environmental authority was applied for prior to 6 December 2016, s334ZP of the Mineral Resources Act does not apply until the mining tenement holder has a associated water licence. The draft EIS should be amended to reflect this requirement.	On 6 December 2016, the right to take associated water was expanded to the mining sector under section 334ZP of the Mineral Resources Act. As application for the Environmental Authority was made prior to 6 December 2016, section 334ZP of the Mineral Resources Act does not apply until the mining tenement holder has a associated water licence. The amended EIS reflects the transitional arrangements applicable under the <i>Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016</i> , and the requirement for an associated water licence (AWL) under the Water Act 2000. The amended EIS includes a requirement to obtain an associated water licence (AWL) and removes the requirement to prepare an Underground Water Impact Report (UWIR) for the project.
Department of Regional Development, Manufacturing and Water	13.002	Chapter 1, Introduction Chapter 9, Groundwater	Section 1.7, Table 1.1 Section 9.2.2, State Legislation	The draft Environmental Impact Statement (EIS) discusses the right to take associated water under the Mineral Resources Act 1989.	Amend: Amend the draft EIS to discuss the requirement to apply to the Department of Regional Development, Manufacturing and Water for an associated water licence to facilitate the take of associated water. Reason: On 6 December 2016, the right to take associated water was expanded to the mining sector. This right is granted under s334ZP of the Mineral Resources Act. The draft EIS (Chapter 1, Section 1.7, Figure 1.1, Pg. 10) states the proponent applied for an environmental authority in 2013. As per s839 of the Mineral Resources Act, if the environmental authority was applied for prior to 6 December 2016, s334ZP of the Mineral Resources Act does not apply until the mining tenement holder has a associated water licence. The draft EIS should be amended to reflect this requirement.	Section 3.2.2 of Appendix F-3 of the EIS has been amended to make clear that an associated water licence under the Water Act 2000 will be required to take associated water in assurance with s334ZP of the Mineral Resources Act.
Department of Regional Development, Manufacturing and Water	13.003	Chapter 5, Land Resources	Table 5.16	Section 5.6.4 of the draft EIS discusses rehabilitation methods for the Saraji East mine site.	Amend: Amend the draft EIS to include that shown in bold in the "Waterway management section" of Table 5.16: Prior to undertaking rehabilitation works within the bed and banks of a water feature, the Department of Regional Development Manufacturing and Water will be contacted to discuss requirements under the Water Act. Reason: Proposed rehabilitation works include bank stabilisation, reprofiling water features, pumping water and the installation of weirs. The proposed works may require authorisations under the Water Act 2000. Consultation with the Department of Regional Development, Manufacturing and Water via centralwaterservices@rdmw.qld.gov.au would assist the proponent to identify approvals required under the Water Act.	Within the amended Appendix K-1 Rehabilitation Management Plan (RMP), the rehabilitation objectives to be achieved for the Project include rehabilitation complying with the relevant regulatory requirements, and approval conditions for the successful closure and rehabilitation of the Project Site. The RMP forms a part of the Project's environmental management system intended to meet the obligations of the Mined Land Rehabilitation Policy (DES, 2018) and an EA. The Project Progressive Rehabilitation and Closure Plan (PRCP) is not required to be compiled as part of the EIS however it will be developed and submitted in combination with the EA approval prior to construction commencing. Appendix A-3 Approvals Framework identifies Department of Regional Development Manufacturing and Water as the Administering Authority to be consulted to discuss requirements under the Water Act in relation to works associated with water features.
Department of Regional Development, Manufacturing and Water	13.004	Chapter 7 Aquatic Ecology	Section 7.2.2, State legislation Vegetation Management Act 1999	The draft EIS states "Vegetation clearing and development is regulated for Category R vegetation areas, and Riverine Protection Permits are required to clear vegetation in watercourses."	Amend: Amend the draft EIS to that shown in bold and delete that shown in strikethrough: Vegetation clearing and development is regulated in Category R vegetation areas, and Riverine Protection Permits are required to clear vegetation in watercourses. Water Act 2000 Under the Water Act, a riverine protection permit is required for works involving the excavation of material, placement of fill or removal of vegetation within declared watercourses unless the works comply with the exemption requirements. Reason: Riverine protection permits are a requirement under the Water Act 2000 not the Vegetation Management Act 1999. Requirements under the Water Act should be discussed in the Aquatic Ecology chapter of the EIS.	Chapter 7 has been amended to incorporate a section on the Water Act 2000 which includes the suggested amendment regarding the clearing of vegetation in a watercourse which is regulated under this legislation. The section on the Vegetation Management Act 1999 has been amended to remove reference to the Riverine Protection Permit.
Department of Regional Development, Manufacturing and Water	13.005	Chapter 7 Aquatic Ecology	Section 7.6.3	Section 7.6.3 of the draft EIS discusses watercourse crossings.	Amend: Amend Section 7.6.3 of the draft EIS to include that shown in bold: The project will involve crossing declared watercourses under the Water Act. Works within declared watercourses will comply with a riverine protection permit or the riverine protection permit exemption requirements. Reason: Under section 218 of the Water Act, a riverine protection permit is required for works involving excavation of material, placement of fill or removal of vegetation. A riverine protection permit is not required if the works comply with the riverine protection permit exemption requirements. The exemption requirements are available at: https://www.dnrm.qld.gov.au/?a=109113%3apolicy_registry%2friverine-protection-permit-exemption-requirements.pdf . Compliance with the riverine protection requirements under the Water Act is required for any watercourse crossings.	Chapter 7, section 7.6.3 has been updated to include reference to the Water Act and the requirement for interference with watercourses regulated under this act as per the suggested amendment.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Regional Development, Manufacturing and Water	13.006	Chapter 8, Surface Water Resources	Section 8.2.2	Section 8.2.2 of the draft EIS discusses requirements under the Water Act.	Amend: The draft EIS should be amended to include that shown in bold and delete that shown in strikethrough: The creeks within the project site are declared watercourses under the Water Act, including Boomerang, Hughes, One Mile, Plumtree, Spring Creek and Phillips Creeks. Resources within a declared watercourse are managed by the State Department of Regional Development, Manufacturing and Water and may be subject to licencing provisions. Under the Water Act, a riverine protection permit is required for works involving the excavation of material, placement of fill or removal of vegetation within declared watercourses unless the works comply with the riverine protection permit exemption requirements. Reason: Several watercourse crossings are proposed as part of the project. Under section 218 of the Water Act, a riverine protection permit is required for works involving excavation of material, placement of fill or removal of vegetation. A riverine protection permit is not required if the works comply with the riverine protection permit exemption requirements. This legislative requirement should be noted in the Surface Water Resources chapter of the EIS.	The amended EIS has been updated to discuss requirements under the Water Act. Appendix E-1, Section 2.1, discusses the Water Act. The use of water for activities such as irrigation, stock water, drinking water and industrial use are regulated under the Water Act 2000 (Qld) (Water Act). The Water Act provides a basis for the planning and allocation of Queensland water resources, which in turn must make allowances for the provision of water purely for the support of the natural processes that underpin the ecological health of natural river systems, that is, environmental flows. The watercourses potentially affected by the Project are subject to protection under the Water Act, which regulates the extraction of water from these watercourses and works that might disturb bed and banks of each watercourse. A number of watercourses identified under the Water Act flow through the Project Site, including Boomerang Creek, One Mile Creek, Hughes Creek, Plumtree Creek, Spring Creek and Phillips Creek. Of these streams, only Boomerang Creek, Plumtree Creek and Hughes Creek intersect the underground mining panels and the predicted area of subsidence. The Water Act prescribes the process for preparing Water Resource Plans (WRP) and Resource Operation Plans (ROP) which are specific for catchments within Queensland. Under this process, the WRP identifies a balance between waterway health and community needs and are applied on a catchment scale. The WRP establishes Environmental Flow Objectives that are of importance for waterway health and sets Water Allocation Security Objectives which are important to maintain water availability for community needs. The ROP provides the operational details on how this balance can be achieved. The WRP and ROP determine conditions for granting water allocation licences, permits and other authorities, as well as rules for water trading and sharing.
Department of Regional Development, Manufacturing and Water	13.007	Appendix F-1, Groundwater Technical Report	Section 4.3	Section 4.3 of the draft EIS discusses the groundwater modelling used to assess potential impacts of longwall mining.	Advice: It is recommended the groundwater model be peer reviewed by an independent third party. Reason: The groundwater model has not been peer reviewed. An independent peer review of the groundwater model would validate model results.	For independent peer review of the groundwater model, Hydro algorithmics (Noel Merrick) has been engaged and findings are provided in Appendix F-2.
Department of Regional Development, Manufacturing and Water	13.008	Appendix F-1, Groundwater Technical Report	Section 5.3.3	Section 5.3.3 of the draft EIS discusses results of a bore census undertaken in the project area.	Advice: It is recommended a more current bore census be undertaken. Reason: The bore census for the project was undertaken in 2007. Additional bores may have been established since 2007. A current bore census would ensure impacts on recently developed bores are considered in the EIS.	No additional bore census work has been undertaken. It is considered that the bore census data available is sufficient for the impact assessment completed.
Department of Regional Development, Manufacturing and Water	13.009	Appendix F-1, Groundwater Technical Report	Section 6.2.2	Section 6.2.2 discusses groundwater ingress estimates generated though groundwater modelling.	Amend: It is recommended a sensitivity analysis of the groundwater model be undertaken as per the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development guidelines. These guidelines are available at: Information Guidelines Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (environment.gov.au). Reason: Sensitivity and/or uncertainty analysis has not been undertaken on the groundwater model (except for recharge). Sensitive and uncertainty analysis can be used to better understand how changing model parameters produce differing affects and alter the likelihood of potential impacts.	The updated regional groundwater modelling undertaken for the Project includes a sensitivity analysis of calibration, predictions and in Section 5 of Appendix F-1. The results of an assessment of the relationship between identifiability of the maximum predicted drawdown and the identifiability of the calibration show that the key parameter that require further work to reduce its influence on predictive uncertainty in relation to the maximum drawdown extent are specific storage of the Moranbah Coal Measures interburden_L17 (i.e. interburden above the SEMLP coal seam mining target) and anisotropy and specific yield of the fault to the east of the SEMLP. Appendix F-1, Section 6, presents the findings of a Type 3 Monte Carlo uncertainty analysis (IESC, 2018) undertaken to estimate the uncertainty in the future impacts predicted by the model on mine ingress and drawdown predictions.
Department of Regional Development, Manufacturing and Water	13.010	Throughout EIS	N/A	Where the requirements under the Water Act are discussed, the EIS references the Department of Natural Resources, Mines and Energy as the responsible agency.	Amend: Where the Department of Natural Resources, Mines and Energy is referenced in relation to requirements under the Water Act, it is recommended the department name be changed to the Department of Regional Development, Manufacturing and Water. Reason: The Water Act was previously regulated by the former Department of Natural Resources, Mines and Energy. As a result of recent machinery of government restructure, the Water Act is now regulated by the Department of Regional Development, Manufacturing and Water.	References to the regulation of the Water Act have been altered in the EIS to remove reference to the Department of Natural Resources, Mines and Energy in Appendix A-3 Approvals Framework and throughout the EIS.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.001	Chapter 6 – Terrestrial Ecology	N/A	(S6.4.2, pg6-17) The EIS does not consider weeds present in the Isaac Regional Council area (identified in the Isaac Regional Council Biosecurity Management Plan) that might pose a risk of introduction to the project site and/or neighbouring properties in terms of management of risks for prevention. For example, Giant rat's tail grass (Sporobolus pyramidalis and S. natalensis), Giant parramatta grass (S. fertilise), American rat's tail grass (S. jacquemontii)	Include consideration of weeds identified as priorities in the Isaac Regional Council Biosecurity Management Plan in terms of risk management and prevention. Recommend also that maps showing distribution and abundance of weeds should be included.	Weeds identified within the Project Site and which are priorities in the Isaac Regional Council Biosecurity Management Plan are outlined in Chapter 6, Section 6.4.2. Further details about potential and observed weeds (including Sporobolus spp.) are outlined in Appendix C-1, Section 4.2.6. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023 management for species.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.002	Chapter 6 – Terrestrial Ecology	N/A	(S6.5.2, pg6-28) The EIS does not consider a priority pest animal species (feral deer) identified in the Isaac Regional Council Biosecurity Management Plan in terms of risk management	While not identified in the field surveys, feral deer are present across the Isaac Regional Council area and are a priority species for management across the shire. Include consideration feral deer in accordance with the Isaac Regional Council Biosecurity Management Plan	Included section about potential for feral deer within Project Site. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023 management for species.
Department of Agriculture and Fisheries - Fisheries Queensland	14.003	Chapter 7 – Aquatic Ecology	N/A	(S7.4.2, Para and Table 7.6, pg7-11) This section identifies waterways that are within the project site. Table 7.6 identifies waterway within the project site and assigns "creek ratings". The last sentence states the following: Smaller upstream tributaries of these watercourses have low (green) risk of impact from waterway barrier works as they are outside the Project Site and will not be impacted by the Project. As per the Queensland waterways for waterway barrier works spatial data layer: Guide to determining waterways Version 2.0 (April 2021) the colour that has been assigned does not express relative importance of the fish habitat. The colour enables use of accepted development requirements. The colour or fish passage attribute is only used by stakeholders in assessable development to assist with determination of the development application fee. Additionally, upstream waterways are likely to be impacted by subsidence of waterways downstream due to the potential to sever connectivity. This should be acknowledged within the EIS material.	Removal 'creek rating' from the table 7.6 Fish passage ratings. This is not relevant as all waterways providing for fish passage are MSES and the colour is only applicable for the Accepted Development Requirements and fee levels under the Planning Act. Inclusion of upstream tributaries into the assessment of potential impacts to waterway providing for fish passage. Change "watercourse" to "waterway" in reference to fish passage and the Fisheries Act 1994. Watercourse and Waterway have different definitions under the Water Act 2000 and Fisheries Act 1994 respectively.	Chapter 7, Table 7.6 has been amended to amend 'creek rating' to 'waterway determination'. References to watercourse have been amended to 'waterway' where referring to fish passage.
Department of Agriculture and Fisheries - Fisheries Queensland	14.004	Chapter 7 – Aquatic Ecology	N/A	(S7.6.1, pg7-13) The subsidence mitigation mentions appendix K-2 and states that mitigation will include erosion protection, re-profiling and implementation of a receiving environment monitoring program. No reference or commitment has been made to restoring fish passage or designing any of the structures proposed within waterways to facilitate fish passage. Appendix K-2 does not cover these Matters of State Significance, (see further comments below relating to appendix K-2).	Add dot point and amend appendix K-2 (as per comments below) to include commitment to restoring waterways for fish passage as follows: - Design of waterway structures and features to facilitate fish passage and connectivity of waterways providing for fish passage. Ongoing commitments from the proponent to ensure subsidence doesn't continue to impact matters of state environmental significance after the mine closure.	Chapter 7, Section 7.6.1 has been amended to reflect comments.
Department of Agriculture and Fisheries - Fisheries Queensland	14.005	Chapter 7 – Aquatic Ecology	N/A	(S7.6.3, pg7-14) Incorrect reference to watercourses when referring to waterways providing for fish passage. Regardless of not requiring a development approval under the Planning Act, waterways providing for fish passage are Matters of State Environmental Significance. The EIS process is the mechanism of approval, and all impacts to MSES avoided and where this cannot be reasonably achieved, mitigated. Impacts to waterways and fish passage should be avoided and minimised through the use of best practise design as a priority. The proponent should design waterway crossings in accordance with the What is not a waterway barrier work? Factsheet design features for bridges. Where bridges cannot be used, then the Accepted Development Requirements for constructing or raising waterway barrier works should be used to guide designs of culverts or bed level crossings.	Change reference relating to waterways providing for fish passage from "watercourse" to "waterway". Watercourse and Waterway have different definitions under the Water Act 2000 and Fisheries Act 1994 respectively. Include as a commitment for designing waterway crossings that have the least impact to fish passage the following: - As best practise, waterway crossings within the mining lease will be designed as bridges in accordance with the What is not a waterway barrier work? factsheet design features. Where bridges are deemed unsuitable, the Accepted Development Requirements (ADR) for constructing or raising waterway barrier works will be used to guide designs of culverts or bed level crossings. Any waterway crossings outside of the mining lease area will be subject to Planning Act approval, and pre-lodgement advice will be sought from SARA to determine the best pathway for the proposed designs i.e. Bridge, ADR or Development Approval.	Chapter 7, Section 7.6.3 has been updated to include the suggested information pertaining to the hierarchy of design consideration where crossing over waterways which have the potential to impact on fish passage.

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Department of Agriculture and Fisheries - Fisheries Queensland	14.006	Chapter 7 – Aquatic Ecology	N/A	(S7.7, pg7-15) Residual impacts to waterway providing for fish passage as an MSES have not been adequately identified and detailed. If subsidence occurs it is likely that fish passage will be severed in all waterways within the subject site and extend to all waterways upstream of the subject site. The applicant should further detail how fish passage will be maintained during operation and/or restored adequately after mine closure with fish passage as a consideration.	Include the potential SRI to waterways providing for fish passage as a result of subsidence. This should include the impacts upstream sections of the waterway impacted as a result of severed connectivity. More information is required detailing how fish passage will be maintained during the operation of the mine and how the waterway mitigation and restoration will provide for fish passage post works. Consideration must be given to remediating drops in elevation, maintaining stream bed slopes of less than 5% where waterways are regraded, and the design of erosion control structures that facilitate fish passage.	Chapter 7, Sections 7.6.1, 7.6.3 and 7.7 have been updated to reflect comments.
Department of Agriculture and Fisheries - Fisheries Queensland	14.007	Chapter 8 – Surface Water Resources	N/A	(S8.6.5, pg8-37 & 8-38) (S8.7.1, pg8-48) No acknowledgement has been made or consideration of the determinantal impact of subsidence on waterways providing for fish passage. No mitigation in relation to fish passage has been proposed.	More information is required in this chapter on the risks to fish passage as a result of subsidence. More information is needed on mitigation proposed and how drops in elevation, re-grading and erosion control structures will not become barriers to fish passage, or entrapment hazards for fish, particularly during low flow events.	The amended EIS specifically discusses the mitigation measures to be implemented for subsidence, including protection of fish passage, in Section 7.7.2.1. Mitigation to maintain and restore waterway connectivity for fish passage includes remediation of drops in elevation, maintaining stream bed slopes of less than 5% where waterways are regraded, and design of erosion control structures to facilitate fish passage. Section 7.7.2.3 also discusses fish passage and potential for significant residual impact. BMA is committed to maintaining fish passage within waterways during operation of the mine and also to providing mitigation and restoration to areas of waterways where connectivity and passage has been impacted.
Department of Agriculture and Fisheries - Forestry	14.008	Appendix A-2 – Approvals Framework	N/A	(Table 1, pg28) Forestry Act 1959 The proponent is advised that forest products and quarry material can also be reserved to (owned by) the State on tenures other than State land.	Add the following (shown in bold) to the text under 'Project requirements': Where State-owned forest products or quarry material are to be removed or impacted by the project, BMA will consult with the Department of Agriculture and Fisheries as the agency responsible for administering the Forestry Act 1959 to confirm the need or otherwise for approval under the Act. It is noted that State-owned forest products and quarry material under the Act can occur on land other than State land where ownership of these has been reserved to the State.	The EIS has been updated to include the additional commentary on State-owned forest products and quarry material under the Forestry Act 1959 - refer to Appendix A-3 Approvals framework - Impacts on, or use of State-owned forest products or quarry material.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.009	Appendix C-1 – Terrestrial Ecology Technical Report	N/A	(S9.1.1.2, pg128) Risks associated with weeds and pest animals not identified in the field survey but high priority in the Isaac Regional Council Biosecurity Management Plan have not been considered and assessed for prioritisation and management.	Weeds and pest animals not identified in the field survey but high priority in the Isaac Regional Council Biosecurity Management Plan and should be considered for risk, potential impacts, prevention and management. Giant rat's tail grass (GRT) is not mentioned in the Biosecurity section despite GRT being listed in Isaac Region Biosecurity Plan. There is potential for this weed to be introduced or spread as a result of project development and therefore should be considered a potential risk. Localised populations of feral deer are present in the Isaac Regional Council area. They are a priority for management in the Isaac Regional Council area and their presence and priority for management should be provided in the EIS.	Section 4.2.6 of Appendix C-1 discusses the weed species identified during field surveys. With respect to Giant Rat's Tail Grass, Section 4.2.6 states that "Sporobolus natalensis (Giant Rat's Tail Grass) was also identified in the desktop assessment and has potential to be introduced to the Project Site. No areas containing Sporobolus natalensis (Giant Rat's Tail Grass) were identified during field surveys within the Project Site". A Weed and Pest Management Plan will be developed for the Project, as discussed in Section 10.4.1 of Appendix C-1. Field surveys undertaken for the EIS identified the likely presence of populations of feral fauna within the survey area, but this did not include the presence of feral deer. Section 9.1.1.2 of Appendix C-1 concludes that it is unlikely that the proposed works will significantly result in the further proliferation of identified feral species or the introduction of further feral vertebrate species.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.010	Appendix C-1 – Terrestrial Ecology Technical Report	N/A	(S10.4.1, pg143 & 144) This section provides general statements of intent rather than detailed measures. This section does not describe how the General Biosecurity Obligations will be considered and met. For example, weed-free buffers may be appropriate for the boundaries with adjoining properties. The plan should ensure that the introduction of new invasive species is prevented, and that measures are taken to minimise the likelihood of their introduction to the project area.	The Weed and Pest Management Plan should ensure that introductions of new invasive species are prevented, and measures are taken to minimise the likelihood of introduction. The Weed and Pest Management Plan should describe the intent, requirements or provisions of the Biosecurity Act 2014 and how the proponent will comply with these provisions including how the General Biosecurity Obligations will be determined and applied. Information on species, means of spread, assessment of risk in a Biosecurity Chapter and inclusion of measures to prevent introduction or spread to the project or surrounding areas as a result of project activities is recommended. More comprehensive information should be included about the potential impacts, vector, risk assessment and potential impacts on adjacent landscapes incorporating different land uses and ecosystems. For example, provide linkages between land management that facilitates good ground cover with weed prevention and linkages between soil disturbance and increased weed spread and establishment risk.	A Weed and Pest Management Plan will be developed for the Project, as discussed in Section 10.4.1 of Appendix C-1. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023. Management will be tailored towards the weed species identified in Section 4.2.6 and the pest animal species identified in Section 5.2.5. Control measures that will be outlined within the Weed and Pest Management Plan include management, containment and treatment measures.
Department of Agriculture and Fisheries - Fisheries Queensland	14.011	Appendix K-1 rehabilitation management plan	N/A	No information has been provided in Appendix K-1. Rehabilitation Management Plan that relates to how fish passage and waterways providing for fish passage as an MSES will be managed during the operation of the mine and post works. Subsidence will have major impacts to fish species as a result of severed connectivity, alteration of habitats and reduced waterflow. A number of mitigation measures proposed are likely to have further impacts on fish passage such as: - Concrete infilling within waterways, - Drops in elevation, - Bed slope after reprofiling - Installation of weirs - Drop structures at head cut erosion - Rock chutes	To address impacts to fish passage as a result of the works, Further information is needed on: - How fish passage will be maintained during works? - How fish passage will be restored post works i.e. mitigation measures resulting from subsidence including remediation of drops in elevation, reprofiling to less than 5% gradient to facilitate fish passage, design of erosion control structures with fish passage as a priority. - Any fish salvage operations planned. - How fish passage from the downstream extent to the upstream extent of the project site is provided during the operational, rehabilitation and post rehabilitation phases. Any potential SRI to MSES waterways providing for fish passage and how this will be offset under the Environmental Offsets Act 2014. Note, an SRI may continue outside of the subject lot if fish passage is not restored to upstream tributaries of waterways as a result of subsidence or other barriers to fish passage within the site boundary.	The amended EIS presents a revised subsidence modelling report (Appendix B-1), and dependent assessments of hydraulics, hydrology and geomorphology (Appendix E-3) and conceptual ponding assessment (Appendix E-4). The ponding areas within the creeks have the potential to restrict the movement of fish, especially during low flow conditions, potentially resulting in fish being stranded in subsided areas. The likelihood of this occurring has been assessed as low as only common species of fish and turtles are known to exist in these watercourses. These species have good dispersal capabilities, are tolerant of harsh environmental conditions and are not sensitive to minor modifications to watercourses. Furthermore, over time the ponding areas within the creeks will fill with sediment and the creek bed will be returned to a near constant grade. Therefore, any restrictions to the movement of fish caused by ponding areas within the creeks will be temporary.
Department of Agriculture and Fisheries - Fisheries Queensland	14.012	Appendix K-2 Subsidence management plan	N/A	No information has been provided in Appendix K-2 Subsidence Management Plan that relates to how fish passage and waterways providing for fish passage as an MSES will be managed during the operation of the mine and post works. It is likely that subsidence will have major impacts to fish species as a result of severed connectivity, alteration of habitats and reduced waterflow. A number of mitigation measures proposed have the potential to further impact on fish passage such as: - Concrete infilling within waterways, - Drops in elevation, - Bed slope after reprofiling - Installation of weirs - Drop structures at head cut erosion - Rock chutes	To address impacts to fish passage, as a result of the works. Further information is needed on: - How fish passage will be maintained during works? - How fish passage will be restored post works i.e. mitigation measures resulting from subsidence including remediation of drops in elevation, reprofiling to less than 5% gradient to facilitate fish passage, design of erosion control structures with fish passage as a priority. - Any fish salvage operations planned. - How fish passage from the downstream extent to the upstream extent of the project site is provided during the operational and rehabilitation phases and post rehabilitation. Any potential SRI to MSES waterways providing for fish passage and how this will be offset under the Environmental Offsets Act 2014. Note, an SRI may continue outside of the subject lot if fish passage is not restored to upstream tributaries of waterways as a result of subsidence or other barriers to fish passage within the site boundary.	The amended EIS presents a revised subsidence modelling report (Appendix B-1), and dependent assessments of hydraulics, hydrology and geomorphology (Appendix E-3) and conceptual ponding assessment (Appendix E-4). As described in Chapter 8 Surface Water (and supported by Appendix E-3, Appendix E-4 and Appendix K-2), the ponding areas within the creeks have the potential to restrict the movement of fish, especially during low flow conditions, potentially resulting in fish being stranded in subsided areas. The likelihood of this occurring has been assessed as low as only common species of fish and turtles are known to exist in these watercourses. These species have good dispersal capabilities, are tolerant of harsh environmental conditions and are not sensitive to minor modifications to watercourses. Furthermore, over time the ponding areas within the creeks will fill with sediment and the creek bed will be returned to a near constant grade. Based on the aquatic baseline and impact assessment report prepared for the Project, it is considered that the successful implementation of the Subsidence Management Plan, the residual risk to aquatic values will be negligible to low. Additionally, given that the timing and severity of potential subsidence impacts cannot always be accurately predicted, therefore an adaptive and iterative approach towards identifying and managing potential subsidence impacts is required.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.013	General	N/A	The EIS does not consider weeds and pest animals that were not identified during the field survey but are known to be present in the Isaac Regional Council area. The EIS states that the project will be managed to avoid the introduction of new species to the project area and identifies yellow crazy ants and red imported fire ants as a e it should identify the species that should be considered high risk capable of being transported from infested sites to new construction sites on equipment or within materials. While efforts to control spread of both of these ant species have been quite effective, the spread of ants to new areas is a potential issue and needs to be monitored. No exotic ants are known to occur within the Project Site.	The EIS should fully consider the actions that should be taken to prevent the introduction of weeds and pest animals not identified in the field surveys but having the potential to be introduced to the project site, such as those identified by Isaac Regional Council as priorities for the Isaac Regional Council area.	In the amended EIS, Chapter 6, Section 6.13 provides additional details about actions that will be taken to prevent the introduction of weeds and pest animal with potential to be introduced into the Project Site, including inspections, monitoring containment and treatment (where required), training, movement of potential weed/pest carriers and wash down protocols. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023 management for species.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.014	General	N/A	There is currently no integration of biosecurity measures with the Isaac Regional Biosecurity Plan. The priorities and objectives for managing weeds and pest animals should be consistent wherever possible with the council plan. The EIS overly relies on the future development of a Weed and Pest Management Plan with minimal detail within the EIS. Vertebrate pest measures focus on trapping of wild dogs and shooting feral pigs, but there is no mention of participating in coordinated baiting with the Isaac Regional Council.	Recommendation that a dedicated plan be developed that is consistent and integrates biosecurity measures with the Isaac Regional Biosecurity Plan. In relation to wild dogs and feral pigs, it is suggested they participate in coordinated wild dog and feral pig baiting rather than relying solely on trapping (wild dogs) and shooting (feral pigs). This is particularly relevant for shooting, as mines sometimes have blanket bans on shooting within their leases due to perceived risks or company policy. A biosecurity management plan for the project area should clearly indicate regular monitoring and control. E.g. Parthenium can grow and produce flower at any time of year. Also, in high-risk areas, such as clean down areas where weeds/pests may germinate.	The draft EIS has been amended to address biosecurity matters with mitigation measures updated in Chapter 6 and Chapter C-1 to integrate with Isaac Regional Biosecurity Plan. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023 management for species.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.015	General	Surface water quality	Potential impacts may arise from erosion and sedimentation, chemicals and contaminants, subsidence, and flooding. However, the Project is not expected to substantially alter existing surface water quality parameters. A surface water quality monitoring program is proposed, designed to measure the effectiveness of the impact mitigation measures implemented during the Project. Based on the implementation of management and mitigation measures, and validation through the monitoring program, the residual risk of the Project having adverse impacts on receiving surface waters is expected to be minor.		No response is required for this submission.

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Department of Agriculture and Fisheries - Biosecurity Queensland	14.016	General	Hydrology, hydraulics, and geomorphology	The Project may directly cause subsidence of Boomerang, Hughes, and Plumtree Creeks, leading to a number of impacts across the Project Site and potentially, impacts off-site downstream, including: - changes to surface water quantities as some water is ponded in panel catchments - potential changes in overland flow paths - development of instabilities in bed and banks of the three subject watercourses and minor tributaries - creation of voids in watercourses beds, which may take years or decades to fill with sediment from upstream - potentially beneficial habitat creation through development of pools in subsidence areas within watercourses - surface tension cracking at panel edges which may instigate terrestrial erosion and affect vegetation. These potential impacts associated with underground mining on surface water hydrology, hydraulics and geomorphology may be minimised through mitigation. Potential impacts to surface water will be mitigated through the implementation of an Erosion and Sediment Control Plan during construction and operation of the Project.		Appendix E-1, Section 6.2, describes the potential impacts of subsidence on water quality through alterations in sediment transport, flow behaviour and erosion leading to increased turbidity and nutrient concentrations, and require mitigation. Managing the potential impacts of subsidence requires multiple complementary approaches, which may include adaptive management of existing issues, development of a subsidence management plan and monitoring of actual impacts as the project progresses. An adaptive management framework is suggested as timing, duration and extent of impacts cannot be predicted accurately. This approach accommodates for the complexity involved with stream processes. The principles of an adaptive management framework include: Risk assessment; Design of mitigation measures; Apply treatments; Monitoring of key response indicators; Evaluation of mitigation measures effectiveness; Adaptation of policies and practices. A subsidence management plan (SMP) has been prepared by Engeny (2022) for the project and key components detailed in Appendix K-1 include: Ongoing subsidence monitoring, evaluation, review and improvement program; Managing bed and bank stability; Vegetation management; Panel catchment management, including rehabilitation of surface cracking; and, Infrastructure protection or relocation where necessary. Erosion and sediment control practices will be applied to construction works and mining operations, in accordance with International Erosion Control Association Best Practice Erosion & Sediment Control guidelines (IECA, 2008) to mitigate the generation of sediment and its transport to waterways. An erosion and sediment control plan will be prepared and executed.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.017	General	Mine Water	Based on the water balance model outcomes, controlled releases of (Mine Affected Water) MAW to the receiving environment are not required. However, any open system has the potential for uncontrolled discharge of MAW as a result of extreme rainfall events. Therefore, BMA will be seeking authority and licence conditions to conduct the controlled release of MAW from the Project site. The indicative location for controlled release of MAW is located on Boomerang Creek adjacent to the proposed process water dam. Spillway discharges from the process water dam, (which would only occur during an uncontrolled release event), are also proposed to be directed to Boomerang Creek. A water quality monitoring program and receiving environment monitoring program will be developed prior to construction.		The amended EIS allows for the operation of releases in extreme conditions as described in Section 5.3 of Appendix E-2, including monitoring of downstream flow within Boomerang and Hughes Creeks and coordination with other releases. Coordination with proximate mines will occur, to manage the risk of concurrent releases to result in exceedances of water quality objectives in the downstream receiving environment. The coordination is expected to include existing Saraji operations and Peak Downs Mine (which maintains a licensed release point on Boomerang Creek under the relevant EA: EPML00318213). Specifically, BMA are a party to the ongoing development of the 'BHP Real-Time Forecasting System (RTFS) – Hydrologic, Hydrodynamic and Water Quality Models' (Water Technology & Deltares, 2021) which models the potential release water quality in the receiving environment for releases originating from the central mines region, including Goonyella Riverside, Caval Ridge, Peak Downs, Saraji (existing), Norwich Park, Daunia and Poirrel mines. The Project will be included in the next periodic update of the RTFS tool.
Department of Agriculture and Fisheries - Biosecurity Queensland	14.018	General	Groundwater	The proposed underground mining of the Tertiary and Quaternary cover as well as the target Lower Dysart coal seam will result in groundwater drawdown as groundwater infiltrates the underground workings. It is estimated that the total amount of groundwater ingress as a result of underground mining for the life of currently approved Saraji open-cut operations, (a 15 year period), is predicted to be 1,527,725 cubic metres (m3), which is 152.77 mega litres per annum (ML/a) on average. Total groundwater ingress resulting from both open-cut and underground mining over 25 years is estimated to be 3.57 gigalitres (GL). Additional impacts of mine dewatering associated with the proposed underground workings when considered in connection with the currently approved Saraji open-cut operations, are considered low for the following reasons: - creeks in the area are ephemeral and groundwater levels, (more than 17m below surface), are below the level that will provide baseflow to existing alluvium or to the root zone of plants - groundwater level drawdown will occur predominantly within the Permian coal seams, which are separated from surficial groundwater regimes by aquitards and are therefore not expected to impact surface ecosystems. BMA will develop and implement a Groundwater Monitoring Program prior to the operational phase. An objective of the program will be to detect a significant change to water quality values, (whilst considering the limited environmental values of the groundwater in many areas), due to activities that are part of the Project. It is intended that the Groundwater Monitoring Program will allow for the validation of predictions and allow for the instigation of investigations into potential environmental impacts should groundwater monitoring results differ from predictions.		No response required. No changes required for the EIS in relation to this submission.
Powerlink	15.001	Chapter 1 – Introduction	Section 1.2	The EIS contains reference to the relocation of the 132kV transmission within the mining lease boundary. In addition, a proposed transport and infrastructure route has been identified along the eastern edge of the mining lease.	Powerlink will work with BMA in determining an appropriate alignment through the mining lease. As such, the alignment outlined in the EIS may not be reflective of the final alignment and could change during the design of the 132kV relocation.	During detailed design, BMA will work with Powerlink to determine the appropriate alignment. BMA commit to working with suppliers to maintain supply and will consult with relevant parties prior to works. This is described in Section 3.7.13 of Chapter 3 (Project Description) of the amended EIS.
Department of Agriculture, Water and Environment	16.001	Chapter 21	Section 2	The department notes the project justification 21.2, references an increase demand for coal from India, China and other international markets (pg.3). The department requests further clarification on current demand of coal in relation to justification. The department notes that the mines projected job creation identifies the staffing levels at the peak phases of the construction phase and operational phase of the mine. The department notes that the figures of lower – medium level operational staffing levels should be identified.	Update section 21.2 with justification for project justification due to increase demand for coal from India, China and other international markets. Update section 21.2 to include an estimate of (lower-medium level) operational staffing levels and the duration of employment.	Section 2.2.1 of Chapter 2 in the EIS has been amended to provide further clarification on international demand for coal. The discussion provided in Section 2.2.1 includes commentary on forecast demand from India and China, and recent (early 2023) increases in exports to China. Section 3.6.5 and Section 3.7.19 of Chapter 3 present the forecast construction and operation phase workforce requirements for the project. It is estimated a construction workforce of 500 people will be required in Year 1, increasing to 1,000 people during Year 2. It is expected that approximately 260 full time equivalent (FTE) personnel would initially be required during the first two years of operation, with up to 500 operational personnel required between years 3 to 18 of operation. A ramp-down to 260 personnel is likely in Years 19-20, prior to decommissioning and closure.
Department of Agriculture, Water and Environment	16.002	Chapter 21	Section 2	The department considers there is a lack of detail in relation to the size and precise location of the Incidental Mine Gas Network. The department also notes that the transmission line easements has identified the width in Table 21-4, pg. 13, but the length previously requested in the adequacy review, has not been addressed. The department notes there is a lack of clarity in relation to the relevant components of the action and the correlation with direct clearance impacts.	Provide further detail on Incidental Mine Gas Network in relation to identifying the direct clearance impacts for each component of the action. Include the length of transmission line easements in table 21-4, pg.13.	As part of the EIS amendment, additional description of gas drainage and management is provided in Section 3.7.8 (Chapter 3 Project Description) to provide further detail on development and operation of the Incidental Mine Gas Network. The Project will utilise the existing approved Saraji Mine infrastructure such as powerlines, water supply pipelines, CHPP, haul roads, workshops and warehouses, where practical. Clearing for the powerline connection will only be required for footings and a narrow easement. The location of the powerline infrastructure will be refined during detailed design to avoid direct impacts where practical. This will include consideration of minor adjustments in powerline alignment and construction methods. As such, impacts to high biodiversity values within the powerline connection footprint will be minimised. Allowance is made for siting infrastructure within corridors up to 50 m in width, which is greater than the anticipated disturbance; the width of the corridor is also expected to reduce during the detailed design process.
Department of Agriculture, Water and Environment	16.003	Chapter 21	Section 3.4	The department notes within the principles of Ecologically Sustainable Development, Table 21-2 Integration of EPBC Act ESD principles into the Project development, BMA state 'The Project will not significantly reduce or fail to maintain the health, diversity and productivity of the Queensland environment or negatively affect future generations. 'pg.7. The department notes there is limited evidence of this statement and limited discussion of emissions in relation to future generations.	The department recommends providing a discussion with evidence to justify the statement.	The EIS has been amended so that Chapter 2 Project Alternatives and Justification reviews the Project's compatibility against the objectives and principles defined in the National Strategy for Ecologically Sustainable Development (ESD) (Ecologically Sustainable Development Steering Committee, 1992) (refer Table 2-2). For each guiding principle of ESD, the EIS provides discussion with evidence to justify the statement and demonstrate integration into the Project's development.
Department of Agriculture, Water and Environment	16.004	Chapter 21	Section 4.3	The department notes that within section 21.4.3 BMA state that concrete pads will be covered with benign waste rock or ripped and removed, then topsoiled and revegetated.	Clarify how the affected area will be revegetated in areas that have topsoiled covered over non-broken concrete-pads. Discuss whether tree roots will be able to break through concrete pads and the predicted effectiveness of revegetation.	It is not expected that tree roots will break through concrete pads. Where concrete pads are left to remain, these will be covered with benign waste rock to a depth which is suitable to allow for the development of tree and vegetation root networks to facilitate revegetation. Concrete pads may not be left to remain and may alternatively be ripped and removed, allowing vegetation to be established into the natural ground surface. No changes have been made to the EIS.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Agriculture, Water and Environment	16.005	Chapter 21	Section 21.5.10	The department notes GDE analysis is reliant on desktop analysis only and does not consider GDEs downstream of the project site that may be impacted – including the conclusion that terrestrial GDEs have a 'low potential' to occur. It appears no field verification work has been conducted for terrestrial GDEs, including downstream of the project site. The department notes the field validation surveys for Stygofauna were undertaken in 2011. The department considers, based on an action of this size, that more contemporary field validation surveys must be undertaken. The draft EIS does not address potential downstream impacts on GDEs (e.g. controlled/uncontrolled releases of mine-affected water). The department notes that there is limited information supporting BMA's conclusion of presence of GDE's. In relation to terrestrial GDE's BMA state that no known terrestrial GDE's have been identified with the project site. BMA also state that there is a low to moderate potential for GDEs to exist within the footprint of the proposed underground mine workings and surrounds. However, the department notes the provided map of GDEs (Figure 21-16), the map clearly identifies the project footprint in within an area of High Potential of GDE presence. The department also notes that within Table 21-20 Questions to determine likelihood of Aquatic GDEs and table 21-21 Questions to determine likelihood of terrestrial GDEs, BMA failed to address question 3 in relation to the presence of Oxbow Wetlands located in the North East portion of the project site. The department concludes that the desktop analysis has limited information to support BMA's conclusion of Aquatic and Terrestrial GDEs occurrence.	Reassess Table 21-20 Questions to determine likelihood of Aquatic GDEs and table 21-21 Questions to determine likelihood of terrestrial GDEs to include presence Oxbow Wetlands located in the North East portion of the project site. Update Aquatic GDE and Terrestrial GDE assessment and justification based upon the identification of Oxbow Wetlands.	As part of the EIS amendment field-validation surveys for aquatic and terrestrial GDEs were completed, and combined with baseline data and assessment results from the adjacent Meadowbrook-Lake Vermont Mine, downstream of the Saraji mine site. Appendix D-2 Groundwater Dependent Ecosystem Assessment concluded the oxbow wetlands located in the north-east portion of the site are not aquatic or terrestrial GDEs, and presents ecohydrological models to support this finding. Accordingly, the GDE assessemnts have been re-evaluated.
Department of Agriculture, Water and Environment	16.006	Chapter 21	MNES	The MNES section includes a partial analysis of potentially relevant impacts on habitat for relevant MNES as required by the ToR. The department notes the ToR requires "... a detailed analysis of the nature and extent of likely direct, indirect and consequential impacts relevant to MNES..." (Appendix 2, p24). However, the department notes the impact assessment and residual significant impact assessment undertaken for relevant MNES does not address all habitat types (e.g. preferred, suitable and marginal).	Ensure an impact assessment and residual significant impact assessment is clearly undertaken in the MNES Section for all habitat types for relevant listed threatened species (e.g. preferred, suitable and marginal).	Within the amended EIS, habitat mapping and evaluation of project impacts to habitat has considered preferred, suitable and marginal habitat as discussed in Section 21.7.2.4 of Chapter 21 according to BMA habitat mapping rules discussed with DCCEEW. Further classification according to critical habitat definitions have been provided for all threatened species as part of the significant impact assessment process.
Department of Agriculture, Water and Environment	16.007	Chapter 21	Section 11.2.1	The department notes a discrepancy between the Observed TEC's table 21-26 and Table 21-23 Vegetation communities. Within Table 21-23 Vegetation communities within the Project Site, BMA states the following Brigalow analogues RE's are within the project extent 11.3.1 with 1.76(ha) 11.4.8 with 322.16(ha) and 11.4.9 with 188.57(ha). This accumulates to a total of 512.49(ha) present of EPBC TEC Brigalow (acacia harpophylla dominant and co-dominant within the project site extent, however within table 21-26 Observed TECs within the project site, only 417.85(ha) is provided.	Clarify the discrepancy and in turn update the project site extent and project footprint extent within table 21-26 and Table 21-39 Direct and Indirect impacts to Brigalow TEC within the Project Footprint, pg. 168.	The amended EIS addresses the discrepancy in the extent of TEC within the Project area in Chapter 21 Matters of National Environmental Significance, including 396 ha within the Project Site and 192 ha with potential to be directly or indirectly impacted within the Project footprint.
Department of Agriculture, Water and Environment	16.008	Chapter 21	Section 21.9.4	The Department notes that there are inconsistencies with the Impact assessment of habitat for the Ornamental Snake. There is a lack of information, including field-derived data, in relation to the identification of: all gilgai features, all 'moist areas' (e.g. creeks billabongs and wetlands etc.) and the location of where frogs were recorded and their densities. Within Table 21-32(p137) the project footprint has 652.63(ha) with Surface facilitates IMG network 284.03 (ha) for Shrubby Brigalow regrowth with gilgai. This equates to approximately 936.66 (ha) of ornamental snake habitat. However, within the table 21-53 (p203) Direct and Indirect impacts to Ornamental Snake the project footprint states an impact of 335.2 (ha) and an indirect area (subsidence) of 590.53 (ha) which totals 925.73 (ha) which is inconsistent with Shrubby Brigalow regrowth with gilgai. The department notes that Ornamental Snake habitat descriptions deviate from the SPRAT Database. The SPRAT Database does not separate habitat into preferred, suitable and marginal habitat. The department notes there is no clear reference and consideration of 'Known important habitat' and 'Suitable habitat' as described in the Draft Referral guidelines for nationally listed Brigalow Belt Reptiles (2011). Page 75 of the MNES section states that modified grasslands contain gilgai and cracking clays and is suitable habitat for the Ornamental Snake. The draft EIS does not appear to include any modified grassland (with suitable gilgai and cracking clay soils) as habitat for the Ornamental Snake. The SPRAT Database states that the Ornamental Snake's preferred habitat is within, or close to, habitat that is favoured by its prey - frogs. Page 83 of Appendix C-1 Terrestrial Technical Ecology Report states that creeks and billabongs fringed by remnant woodlands and sedgeland provide habitat for stream-breeding frogs. In particular, a high number of frogs were recorded along Boomerang Creek. These areas have not been included as habitat for the Ornamental Snake in the MNES chapter. The department considers that the amount of habitat for the Ornamental Snake has been underestimated by not including all gilgai areas and areas favoured by prey species.	Clarify the discrepancy of predicted impacts to ornamental snake habitat within Shrubby Brigalow regrowth with gilgai. Update Ornamental Snake habitat to include modified grassland (with suitable gilgai and cracking clay soils) identified in pg.75 and potential foraging habitat along Boomerang Creek. The department also recommends providing a map of location of prey to aid in identifying foraging habitat.	The amended EIS has revised the significant impact assessment for Ornamental Snake in Chapter 21. The Ornamental Snake's (Denisonia maculata) preferred habitat is within, or close to, habitat that is favoured by its primary prey - frogs. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai mounds and depressions in Queensland RE Land Zone 4, but also lake margins and wetlands. The extent of habitat for the species within the Project Site consists of 2,276.31 ha of suitable habitat. Suitable habitat includes dispersal areas within 1 km of preferred habitat currently or previously dominated by brigalow or coolabah communities where gilgais or soil cracks are infrequent or are shallow or non-remnant areas. Suitable habitat for the species is present across the Project Site in the form of large and reasonably connected patches, primarily in the areas between Hughes Creek and One Miles Creek. For Ornamental Snake in the Project Site, habitat critical to survival of the species includes larger, contiguous areas of suitable habitat. Critical habitat primarily occurs in the areas between Hughes Creek and One Miles Creek. Based on these factors, a total of 2,246.65 ha of critical habitat is present in the Project Site. Habitat critical to the survival of Ornamental Snake is shown on Figure 21-55.
Department of Agriculture, Water and Environment	16.009	Chapter 21	21.9.5	The department notes that within table 21-57(p213) states the removal of 163.4(ha) of preferred Koala habitat is considered unlikely to impact habitat critical to the survival of the species. The department notes there is a definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1 which is a key criterion in determining whether a proposed action will have a residual significant impact on a listed threatened species or ecological community (as illustrated 'in Figure 1 of the EPBC Act Environmental Offsets Policy). The department notes that Koala habitat descriptions deviate from the SPRAT Database. The SPRAT Database does not separate habitat into preferred, suitable and marginal habitat. However, the department considers that the combination of these three habitat descriptions largely aligns with the habitat description in the Koala referral guidelines and the SPRAT Database. The significant impact assessment has only been conducted for preferred Koala habitat. Conversely to the significant impact assessment within table 21-57(p213), section 21.15.2 (p257) the draft EIS states 'the assessment process determined the impact from the Project may have a significant impact on the Koala.' This conclusion is also supported within Table 21-75 (p253) which identifies the projects maximum significant residual impacts to the Koala as 654 ha. Table 21-70 (p242) also identifies maximum predicted significant residual impacts upon the Koala as 163 ha. The department notes the inconsistencies within the draft EIS and based on the information available there is the potential that the proposed action will result in a residual significant impact on the Koala: - At the referral decision stage, the department considered there was a real chance or possibility the proposed action will significantly impact on the Koala. - The draft EIS states the proposed action is predicted to impact a maximum of 1,218.98 ha of known Koala habitat comprising of 163.4 ha of preferred habitat, 1,141.94 suitable habitat and 77.05 ha of marginal habitat (Table 21-56, p212). - The department considers the impact to 1,218.98 ha has the potential to adversely affect habitat critical to the survival of the species (as defined in the Significant Impact Guidelines 1.1).	Update residual significant impact on the Koala using the departments definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. Update Table 21-57 Assessment of Significance of impacts – Koala, to address the impact to 1,218.98 hectare of koala habitat.	Chapter 21 Matters of National Environmental Significance has reviewed and amended the approach to application of definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. For Koala, Section 21.8.4.3 describes habitat critical to the survival of a species is the area within the Project Site that is preferred habitat and suitable habitat in association with preferred habitat along Hughes Ck, Boomerang Ck, Plumtree Ck and Phillips Ck. These watercourses provide connectivity between areas of suitable habitat. Based on these factors, a total of 2,110.54 ha of HCSS is present in the Project Site. Habitat critical to the survival of Koala is shown on Figure 21-56. The Project will have direct and indirect impacts to Koala habitat as shown in Table 21-68, including 84 ha of direct impacts from clearing and 52 ha from ponding/inundation. The assessment concludes that the Project may have a significant impact on the Koala. Ongoing monitoring of the occurrence of and effects of subsidence over additional 934 ha of critical habitat will be required to identify any potential change in vegetation condition and composition within subsidence areas and to allow appropriate management and/or compensatory measures to be implemented if changes occur.
Department of Agriculture, Water and Environment	16.010	Chapter 21	21.9.7	The department notes that within the assessment of significance table 21-64(pg.232) states Greater Glider habitat within the Project is not considered habitat critical to the survival of the species. As stated above, the department notes there is a definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1 which is a key criterion in determining whether a proposed action will have a residual significant impact on a listed threatened species or ecological community (as illustrated 'in Figure 1 of the EPBC Act Environmental Offsets Policy). The department notes that Greater Glider habitat descriptions deviate from the SPRAT Database. The SPRAT Database does not separate habitat into preferred, suitable and marginal habitat. However, the department considers that the combination of these three habitat descriptions largely aligns with the habitat description in the SPRAT Database. The significant impact assessment has only been conducted for preferred Greater Glider habitat. Conversely to the significant impact assessment within table 21-57(p213), section 21.15.2 (p257) the draft EIS states 'the assessment process determined the impact from the Project may have a significant impact on the Greater Glider.' This conclusion is also supported within Table 21-75 (p253) which identifies the projects maximum significant residual impacts to the Greater Glider as 313 ha. Table 21-70 (p242) also identifies maximum predicted significant residual impacts upon the Greater glider as 78.2 ha. These figures are also inconsistent with Table 21-76 (p256) which identifies habitat clearance from the project within the bioregion and states that habitat cleared/impacted for Saraji East Mining Lease project for the Greater Glider is 806 ha. The department notes the inconsistencies within the draft EIS and based on the information available, the department notes there is the potential that the proposed action will result in a residual significant impact on the Greater Glider: - At the referral decision stage, the department considered there was a real chance or possibility the proposed action will significantly impact on the Greater Glider. - The draft EIS states the proposed action is predicted to impact a maximum of 851.67 ha of known Greater Glider habitat comprising of 79.18 ha of preferred habitat, 211.81 suitable habitat and 524.68 ha of marginal habitat (Table 21-63, p231). - The department considers the impact to 851.67 ha of Grater Glider habitat has the potential to adversely affect habitat critical to the survival of the species (as defined in the Significant Impact Guidelines 1.1).	Update residual significant impact on the Greater Glider using the departments definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. Update Table 21-64 Assessment of Significance of impacts –Greater Glider, to address the impact on 851.67 hectare of Greater glider habitat.	Chapter 21 Matters of National Environmental Significance has reviewed and amended the approach to application of definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. For Greater Glider this is predominantly associated with preferred habitat, this is primarily associated with the preferred habitat located within the riparian zones of creeks. This habitat provides key denning (hollows) and foraging resources and has been shown to support a number of individuals. In addition to this, suitable habitat in association with the preferred habitat, and providing connectivity between preferred habitat patches, is considered critical habitat. This is due to the fact that the habitat is connected, which allows for species dispersal, recruitment and exchange of genetic material. Based on these factors, a total of 631.86 ha of critical habitat is present within the Project Site shown on Figure 21-58. The Project will potentially have both direct and indirect impacts to Greater Glider habitat as shown in Table 21-72., including 34.5 ha of direct impacts and 4.05 ha of indirect impacts from ponding/inundation. The assessment concludes that the Project may have a significant impact on the Greater Glider. Ongoing monitoring of the occurrence of and effects of subsidence over additional 228 ha of critical habitat will be required to identify any potential change in vegetation condition and composition within subsidence areas and to allow appropriate management and/or compensatory measures to be implemented if changes occur.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Agriculture, Water and Environment	16.011	Chapter 21	21.9.3.1	The department notes that within the assessment of significance table 21-51(196) states Squatter pigeon habitat within the Project is not considered habitat critical to the survival of the species. As stated above, the department notes there is a definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1 which is a key criterion in determining whether a proposed action will have a residual significant impact on a listed threatened species or ecological community (as illustrated in Figure 1 of the EPBC Environmental Offsets Policy). The department notes that the residual significant impact assessment has only considered potential impacts to preferred habitat. The department considers this likely underestimates the quantity of residual significant impacts of the proposed action on the species. Conversely to the significant impact assessment within table 21-57(p213), section 21.15.2 (p257) the draft EIS states 'the assessment process determined the impact from the Project may have a significant impact on the Squatter Pigeon.' This conclusion is also supported within Table 21-75 (p253) which identifies the projects maximum significant residual impacts to the Squatter pigeon as 314 ha. Table 21-70 (p242) also identifies maximum predicted significant residual impacts upon the Squatter pigeon as 699.2 ha.	Update residual significant impact on the Squatter Pigeon using the departments definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. Update Table 21-51 Assessment of Significance of impacts – Squatter Pigeon (Southern), to address the impact on 699.2 hectare of Squatter Pigeon habitat.	Chapter 21 Matters of National Environmental Significance has reviewed and amended the approach to application of definition of 'habitat critical to the survival of a species' in the Department's Significant Impact Guidelines 1.1. For Squatter Pigeon this is predominantly associated with preferred habitat, located in a consolidated patch where Boomerang, Plumtree and Hughes Creek converge, as this is where breeding will occur if the species is breeding on site. Suitable habitat exists between the preferred habitat fringing Plumtree and Hughes Creek is considered to be critical habitat as it provides foraging resources and also facilitates movement between preferred habitat. Marginal habitat across the sites may facilitate movement between patches of preferred and suitable habitat, but does not provide important ecological resources (foraging or breeding) for the species and is not critical to the species' survival. Based on these factors, a total of 1,804.25 ha of habitat critical to survival is present in the Project Site as detailed in Section 21.8.4.1. Habitat critical to the survival of Squatter Pigeon is shown on Figure 21-54. The Project will potentially have both direct and indirect impacts to Squatter Pigeon (Southern) (Geophaps scripta scripta) as shown in Table 21-64, including 73.06 ha of unavoidable direct impacts and 40.52 ha from ponding/inundation. The assessment concludes that the Project may have a significant impact on the Squatter Pigeon. Ongoing monitoring of the occurrence of and effects of subsidence over additional 777 ha of critical habitat will be required to identify any potential change in vegetation condition and composition within subsidence areas and to allow appropriate management and/or compensatory measures to be implemented if changes occur.
Department of Agriculture, Water and Environment	16.012	Chapter 12	Section 13	The department notes that within the offset strategy are the provision of proposed staged offsets to address the significant residual impacts from the Project. The department also notes that there is limited justification for the provision of proposed staged offsets.	Noting above issues with the impact assessment, the department considers the quantity of impacts that are being offset for relevant MNES will need revision. Update the Offset strategy to provide an offset for the full residual significant impact to MNES in accordance with the departments Significant Impact Guidelines 1.1. Provide further justification on how the provision of proposed staged offsets is in line with the Environmental Offsets Policy EPBC Act 1999.	As part of the amended EIS, Appendix C-2 Offset Strategy, BMA propose to deliver offset in a staged approach related to the timing of Project construction (i.e. Stage 1) and operation (i.e. Stage 2). The staged approach allows offsets to be sought for the predicted area of significant residual impact for each stage, with reconciliation of actual impacts by field verification to be carried through into the following stage, or for future projects, as offset credits. This approach provides an incentive to avoid and minimise impacts wherever practical. Table 8 of Appendix C-2 demonstrates BMA has offset available to adequately compensate for full significant impact predicted. Prior to Stage 1, and associated direct construction impacts, the acquittal process will demonstrate offsets have been provided for existing and future significant impacts. The offsets will be subject to discussion between DCCEW and DES and subsequent landholder negotiations. The staged approach allows offsets to be sought for the predicted area of significant impact, with reconciliation of actual impacts by field verification to be carried onto future projects as offset credits.
Department of Agriculture, Water and Environment	16.013	Chapter 12	Section 13.2.3	The department notes that the Offset Management Plan (OMP) states "The offset much reach a minimum final condition to that of the impact site." Additionally, the OMP states "The final condition score of the offset site will improve by at least one point over the life of the offset. This increase may be greater, if required to ensure the final offset condition is equal to that of the offset site." Pg.248 The department notes that the in section 7.1 of the offset policy states "Offsets should be tailored specifically to the attribute of the protected matter that is impacted in order to deliver a conservation gain." Additionally, Section 4.2.1 of the Offsets Policy states that "Direct offsets are those actions that provide a measurable conservation gain for an impacted protected matter." Environmental Offsets Policy EPBC Act 1999	Provide further clarification on how the OMS addresses section 7.1 of the Offsets Policy 1999 – in particularly how the OMS will deliver a conservation gain for the impacted species.	As part of the amended EIS, Section 4.1.2 of Appendix C-2 Offset Strategy, the proposed offset will align with conservation priorities for the impacted protected matter and are tailored specifically to the attribute of the protected matter being impacted will deliver a conservation gain; for example, if the proposed action is likely to have impacts on foraging habitat for a protected matter, then the offset should aim to create, improve, protect and/or manage foraging habitat. Through direct, land-based offsets, BMA will secure proportional areas for residual impacts to each protected matter and deliver an overall conservation outcome to improve or maintain the ecological condition and viability of populations. BMA has assessed the predicted significant impact of the Project (Section 3.0) and identified a reasonable approach (Section 4.0) with enough potential offset areas available within the Brigalow Belt Bioregion for all the matters with significant impacts (Section 5.0). The results of this desktop assessment have been presented for each MNES and MSES with total available offset area (hectares).
Bowen Basin Coal Pty Ltd	17.001	General	Land Tenure	Bowen Basin Coal is proposing to develop the Lake Vermont Meadowbrook Project, an underground extension of the existing Lake Vermont Open Cut Coal Mine. The Lake Vermont Meadowbrook Project involves the construction and operation of a multi-seam, longwall coal mine to the north of the existing Lake Vermont Coal Mine (primarily on MDL 429 and MDL 303 – with linkages to existing operating mine site tenure). It is noted that 'Figure 3-4 Tenements, Tenure and Ownership' of the Saraji East Mining Lease Project EIS (attached as Appendix A) does not accurately show the lots owned by the Lake Vermont Joint Venture/Bowen Basin Coal Pty Ltd. For example, this figure presents Lot 10 of CNS93 as being owned by 'BHP Coal and others', however this lot was subdivided into two land parcels of land in early 2020; being Lot 102 of Plan SP310393 and Lot 101 of Plan SP310393) with the latter lot/plan being owned by Bowen Basin Coal Pty Ltd.	Property descriptions therefore require updating to ensure current cadastral boundaries are acknowledged, and all stakeholders are adequately identified and informed.	Property descriptions have been reviewed and confirmed - refer Chapter 3 (Project Description), Table 3-5 and Figure 3-3. Lot 10 on CNS93 was subdivided into Lots 101 and 102 on Plan SP310393. Bowen Basin Coal Pty Ltd owns Lot 102 on Plan SP310393. Lot 101 on Plan SP310393, owned by CQCA JV, is now represented as Lot 201SP321205.
Bowen Basin Coal Pty Ltd	17.002	General	Construction Accommodation Camp Section 3.9.1 Section 3.6	Bowen Basin Coal understands that BMA proposes to construct and operate an on-lease accommodation village (with capacity for 1,000 personnel) for the construction workforce, along the eastern boundary of Mining Lease Application (MLA) 70383 (as shown on 'Figure 3-3 Project Layout' of the EIS; attached as Figure 1). The EIS states (per Section 3.6): "Construction will commence following the grant of relevant approvals and BMA's decision to proceed with the Project. The timing of the Project is yet to be determined. For EIS-related impact assessment purposes, construction is assumed to commence in FY 2021 with site setup and construction of the mine portal. It is estimated a construction workforce of 500 people will be required in FY 2021, increasing to 1,000 people during FY 2022 and FY 2023." Section 3.9.1 of the EIS indicates the construction accommodation village will be decommissioned as soon as practical after the construction phase is complete. Inclusion of this accommodation village is contrary to previous advice provided to Bowen Basin Coal (by BMA); which indicated this accommodation village would not be part of the final Saraji East Mining Lease Project layout. As BMA have previously been advised by Bowen Basin Coal, the proposed Lake Vermont Meadowbrook Project includes the development of a Mine Infrastructure Area and an open cut mining pit approximately 3.5 km and 4.5 km, respectively, to the south-east of the Saraji East proposed accommodation village. The proposed (on lease) accommodation village will therefore introduce a new sensitive receptor for the Lake Vermont Meadowbrook Project, with an uncertain timing as to construction (and potential cumulative impact modelling). Compounding this concern, the Saraji East Mining Lease Project EIS also reports that the predominant wind direction is from the 'east through south-east', which has the potential to present a significant risk for the Lake Vermont Meadowbrook Project (in meeting the required air quality and noise objectives at the proposed accommodation village location).	As such, off-lease accommodation options would be preferred by Bowen Basin Coal, as opposed to construction of a new sensitive receptor within such close proximity to our proposed infrastructure. This will best enable our Projects to co-exist. Alternatively, clearly defined timeframes for the development of the proposed on-lease accommodation village will be required, to enable adequate assessment of potential impacts to this newly developed sensitive receptor.	As described in Chapter 3 (Project Description), Section 3.6.6, the construction workers accommodation village (WAV) may be required as a short-term temporary development to supply accommodation for construction phase only i.e. Year 1-2. The construction WAV is assessed as part of the direct disturbance associated with surface infrastructure (Table 3-3 of Chapter 3), including noise impact assessment in Chapter 12 (Noise). Off-lease accommodation options will be arranged for operational workforce as described in Section 3.7.20 of Chapter 3 (Project Description). The described accommodation has been public information since the Initial Advice Statement was published in February 2017, and is consistent with previous advice provided to Bowen Basin Coal by BMA, particularly at the "Saraji East Terms of Reference" meeting of 2017. Previously, concerns were not raised during multiple consultation opportunities such as the 2019 social impact public workshops advertised at the time and reported on in the published EIS. BMA has further explained its Project to Bowen Basin Coal's in a series of meetings since the date of Bowen Basin Coal's submission and the two parties have reached an agreement that includes Bowen Basin Coal confirming any and all issues previously raised in its submission as regards to the Project have been resolved and that it has no objection to the Project.
Bowen Basin Coal Pty Ltd	17.003	General	Other Project Infrastructure	As the existing water supply pipeline (i.e. Eungella Water Pipeline Pty Ltd (EWP) Southern Extension Water Pipeline) to the Lake Vermont Mine has the potential to be impacted by subsidence associated with the Saraji East Mining Lease Project's underground mining operations, BMA propose to relocate the pipeline to the infrastructure and transport corridor on the eastern edge of their Project Site. As part of this relocation, it is critical that continuity of water supply to the Lake Vermont Mine is maintained. To date, Bown Basin Coal has not been engaged in respect of potential impacts and their mitigation from this activity.		BMA commit to working with suppliers to ensure continuity of water supply during relocation works. All parties will be consulted prior to work; however, Bowen Basin Coal has been engaged in respect of potential impacts and their mitigation from the proposed relocation of the pipeline. Refer to Section 3.7.14 of Chapter 3 (Project Description).
Bowen Basin Coal Pty Ltd	17.004	General	Controlled Release of Mine Affected Water	As part of the Project, BMA are seeking authority to undertake controlled releases of some affected water from the Saraji East Mining Lease Project site during emergency scenarios (e.g. Extreme rainfall events). The discharge point is proposed to be located on Boomerang Creek adjacent to the proposed process water dam, as shown in 'Figure 3-13 Proposed Water supply infrastructure, discharge and monitoring points' (attached as Appendix A) of the EIS. Two new monitoring points are proposed downstream of the controlled discharge point on Boomerang Creek. The indicative locations of the monitoring points are shown on this figure. It is noted however, that 'Proposed Monitoring Point 1' on Boomerang Creek is located within the Lake Vermont Meadowbrook Project area, on MDL 429. To date, Bowen Basin Coal has not been engaged in respect of this monitoring arrangement.		After settlement from the subdivision and sale of Meadowbrook East, the Good Neighbour Deed between CQCA (BMA) and Bowen Basin Coal Pty Ltd (Jellinbah Group) grants CQCA a licence to construct, access and maintain up to four water monitoring stations in locations approved by Bowen Basin Coal Pty Ltd (acting reasonably) on Meadowbrook East to monitor the water quality of Boomerang Creek and/or Hughes Creek and/or One Mile Creek and/or Phillips Creek. Bowen Basin Coal Pty Ltd and CQCA expressly acknowledged and agreed that this special condition shall continue in full force and effect notwithstanding settlement of the Contract. Not only has Bowen Basin Coal Pty Ltd been engaged in respect of this monitoring arrangement, it has already agreed to the terms and conditions of the licence to construct, access and maintain the water monitoring stations.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Bowen Basin Coal Pty Ltd	17.005	General	Cumulative Impacts	Table 22.1' of the EIS lists the operations and the projects in development which are relevant to the cumulative impact assessment. It is notable that the neighbouring Lake Vermont Open Cut and the Lake Vermont Meadowbrook Project (EIS in preparation) is not listed and does not appear to have been considered in the EIS. Further to this, clearly defined Project timeframes must be established, to enable accurate modelling of cumulative impacts.		Within the amended EIS, Table 22.1 has been updated to include the Lake Vermont - Meadowbrook Project as this project has been considered within the groundwater modelling assessment (Section 22.4.4) and air quality assessment (Section 22.4.6). BMA considers Jellinbah proposals as known at the time of assessment / writing were addressed in BMA's cumulative impact assessments. Nevertheless, BMA would welcome further collaboration in relation to cumulative impact analysis as Jellinbah's in progress EIS process advances. BMA is unable to define project timeframes with any precision as the timing will depend on external approvals and subsequent investment evaluation process that will only commence after the external approvals are secured. However, we would welcome the possible development of joint planning scenarios. BMA has further explained its Project to Bowen Basin Coal's in a series of meetings since the date of Bowen Basin Coal's submission and the two parties have reached an agreement that includes Bowen Basin Coal confirming any and all issues previously raised in its submission as regards to the Project have been resolved and that it has no objection to the Project.
Bowen Basin Coal Pty Ltd	17.006	General	Project Engagement/Stakeholder Engagement	Bown Basin Coal has facilitated a number of engagements with BMA, to advise of our proposed Project activities and site layouts. In contrast however, no consideration appears to have been provided to the proposed Lake Vermont Meadowbrook Project within the Saraji East Mine Lease EIS.	Due engagement is essential to ensure both the sufficiency of our localised environmental assessment process, as well as facilitating a suitable working relationship for our neighbouring Projects.	As part of the amended EIS, BMA has further explained its Project to Bowen Basin Coal's in a series of meetings since the date of Bowen Basin Coal's submission and the two parties have reached an agreement that includes Bowen Basin Coal confirming any and all issues previously raised in its submission as regards to the Project have been resolved and that it has no objection to the Project.
Capricorn Conservation Council	18.001	Chapter 8	Surface Water	The project proposes to undermine three important creek systems – Boomerang, Plumtree and Hughes Creek. These creeks are recognised as being important for fish passage and have riparian vegetation that is likely to be providing habitat to a number of terrestrial fauna species. The project is located in a sensitive area where three creeks merge just outside the lease. The subsidence for these creek systems from mining activities is estimated to be up to 1m for Boomerang, 1.5-2m for Plumtree Ck and 2.5-3m for Hughes Ck. These subsidence 'voids' are proposed to be minimised, but mostly have been identified as residual ponding sites with claims that this may have "a potentially positive effect of increased aquatic habitat". These additional ponds will permanently impact on the natural ecology of these creeks, adjacent riparian vegetation and is likely to impact on the water availability for neighbouring land holders. As outlined in the EIS, the risks to these creek systems from the proposed mining activity include the potential cracking of creek beds, creation of holes or voids in creek beds, destabilisation of the bed and banks and changes in surface water quantities. These are considered significant impacts which are likely to increase the already high sediment loads and pollutants resulting in a further reduction of the water quality in the waterways which already have poor quality due to past land use activities.	In relation to the EIS under review, CCC strongly recommends that the project is refused on the basis of: - significant impacts to ground and surface water, - its significant contribution to greenhouse gas emissions, - impacts on biodiversity values including listed threatened species, and - the permanent transformation of a natural ecosystem into a highly altered artificial ecosystem which will promote introduced feral animals and weeds to the detriment to native flora and fauna.	The amended EIS presents revised subsidence modelling for the optimised underground mine plan predicting the spatial and temporal progress of subsidence at 1, 2, 5, 10 and 20 years in Appendix B-2. The revised subsidence assessment provides improved estimations for predicted subsidence within impacted watercourses. As per Section 5.2.4 of Appendix E-1, Boomerang Creek is expected to be exposed to a maximum subsidence of approximately 1 m, Plumtree Creek to 1.3 m, and Hughes Creek by up to 3.4 m. These effects will initially impact water quality and quantity through increased erosion and reduced water flows due to ponding. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. Subsidence management plan presented in Appendix K-1, outlines an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.
Capricorn Conservation Council	18.002	Chapter 16	Greenhouse gas emissions	There is a global movement towards reducing greenhouse gas emissions. Limiting the extraction and burning of fossil fuels, as a major contributor to these greenhouse gas emissions, must be a consideration in decision-making for proposals such as the Saraji East Mining Lease Project. Climate change has far reaching implications for significant impacts on Central Queensland's environment including, but not limited to: - Increased coral bleaching events significantly impacting on the Great Barrier Reef World Heritage Area. - Increased frequency and intensity of bush fires which has been observed in the unprecedented and catastrophic fires over the last few years. - Extended and more extreme heatwaves which impacts on human health and ecosystem health. - Decrease in agricultural productivity with changes to climate and rainfall patterns. The emission estimates are that Saraji East will produce 16.3Mt of Scope 1 & 2 emissions and 450Mt of Scope 3 emissions over its life, despite the mitigation measure proposed. These are significant GHG emissions and inconsistent with the scientific consensus and Australia's commitment to the Paris Agreement with 196 other countries to "limit the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels". Other than flaming, the proposal does not incorporate any notable measures to reduce emissions from the operation. The estimated overall GHG emissions from this project are unacceptable and will contribute to environmental impacts which will impact on an area far greater than the project site.	In relation to the EIS under review, CCC strongly recommends that the project is refused on the basis of: - significant impacts to ground and surface water, - its significant contribution to greenhouse gas emissions, - impacts on biodiversity values including listed threatened species, and - the permanent transformation of a natural ecosystem into a highly altered artificial ecosystem which will promote introduced feral animals and weeds to the detriment to native flora and fauna.	Significant residual impacts to water resources are discussed in Section 21.13.1 of Chapter 21 as part of the amended EIS. In respect to surface water, the creeks within the Project Site are part of the Isaac River catchment which flows into the Fitzroy River. The total catchment area upstream and within the Project Site is less than 0.4 per cent of the total catchment area for these water supply schemes. Therefore, the Project is not expected to impact these water supply schemes. Potential impacts associated with mine water management system (WMS) failure, controlled or uncontrolled discharge and contamination of surface water quality can be effectively mitigated through design, engineering, operational controls and monitoring to reduce residual risk. Groundwater is predicted to rebound following cessation of mining in 2042, but the rate of recovery is influenced by the natural limited groundwater resources and mechanisms plus the final voids in the Saraji Mine open-cut pits. During the slow recovery to equilibrium, deeper groundwater levels are recognised as residual impacts which will reduce available drawdown (water column within neighbouring bores within the zone of influence of the Project). Reduced available drawdown can reduce the bore capacity (extraction volumes and bore yields).However, from the assessment of the impacts on existing groundwater bores (Section 21.10.1.2) it is unlikely that the Project will have any material impacts on existing groundwater users. Greenhouse gas (GHG) emissions have been estimated for the project in Chapter 11. The annual GHG emissions predicted for the project (Scope 1 and Scope 2) represent 0.19 per cent of Australia's 2021 GHG emissions and 0.6 per cent of Queensland's 2021 GHG emissions. Flaring is proposed to reduce GHG emissions. Oxidation of methane to carbon dioxide via flaring results in significant reduction of GHG emissions. The EIS has identified threatened species and ecological communities in Chapter 21. An offset strategy has been developed for the project and is included in Appendix C-2 of the EIS. The offset strategy describes how BMA will secure and manage offsets to compensate for significant residual impacts resulting from the project on habitat for threatened species. Field surveys undertaken for the EIS identified the likely presence of populations of weed species and feral fauna within the survey area, as discussed in Section 4.2.6 and Section 5.2.5 of Appendix C-1. Section 9.1.1.2 of Appendix C-1 concludes that it is unlikely that the proposed works will significantly result in the further proliferation of identified feral species or the introduction of further feral vertebrate species. A Weed and Pest Management Plan will be developed for the Project, as discussed in Section 10.4.1 of Appendix C-1. Appendix C-1 has been amended to present specific management measures highlighted by BMA guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023. Management will be tailored towards the weed species identified in Section 4.2.6 and the pest animal species identified in Section 5.2.5.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Capricorn Conservation Council	18.003	Appendix C-1 – Terrestrial Ecology Technical Report	Terrestrial ecology	Approximately 1,290 ha of remnant vegetation communities will be impacted by the proposed Project which include impacts on: - Two threatened ecological communities (TECs): - Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin and Brigalow (Acacia harpophylla dominant and co-dominant). - One flora species listed as vulnerable under the EPBC Act: Bluegrass (Dichanthium setosum). - Six regional ecosystems, including 'endangered' and 'of concern' regional ecosystems. The impacts on the vegetation and habitat will directly remove the habitat and habitat connectivity for 109 native fauna species including the conservation significant Ornamental Snake (Denisonia maculata), Greater Glider (Petauroides volans), Koala (Phascolarctos cinereus) and Squatter Pigeon (Geophaps scripta scripta) which will be directly impacted. The Terrestrial Ecology Technical Report forming part of the EIS has determined that avoidance and minimisation strategies are limited and the mitigation measures are less than adequate in relying fauna to move to other areas. Offsets are typically of minimal success and certainly do not address the cumulative impacts from the loss and disturbance of habitat in areas such as the Bowen Basin.	In relation to the EIS under review, CCC strongly recommends that the project is refused on the basis of: - significant impacts to ground and surface water, - its significant contribution to greenhouse gas emissions, - impacts on biodiversity values including listed threatened species, and - the permanent transformation of a natural ecosystem into a highly altered artificial ecosystem which will promote introduced feral animals and weeds to the detriment to native flora and fauna.	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive energy transition in Section 2.2.1. Considering alternatives for the project location, Section 2.3.2 demonstrates how the Project will intersect Hughes Creek and Boomerang Creek already subject to diversions and impacts of mining upstream, with the benefit of being able to avoid introducing mining impacts to Phillips Creek, Spring Creek and One Mile Creek to the south. An alternate location will result in new impacts and increased disturbance to land and sensitive environmental values as well as key infrastructure being further away from existing infrastructure and mining operations leading to production inefficiencies, increased disturbance as well as higher development and operational costs in accessing and processing the resource. The impacts to vegetation communities and habitat are assessed in detail in Chapter 6 Terrestrial Ecology, and also provides and overview of the avoidance, minimisation and mitigation measures for the Project's impact to biodiversity values and ecosystem. Chapter 8 Surface Water and Chapter 9 Groundwater provides an assessment of the Project's likely impacts on surface and groundwater resources, mitigation, monitoring and potential residual impacts.
Capricorn Conservation Council	18.004	Appendix K-1 rehab	Rehabilitation	The Rehabilitation Management Plan appears to have no intention of restoring the extensive area of wildlife habitat that will be lost during mining operations (refer to the Terrestrial Ecology section above). Of concern, where the post mining land use is grazing, the species composition will aim to include a suitable mix of palatable, perennial and productive (3P) grasses and legumes. There may be instances in which a mix of native and non-native species will be implemented. This is of concern given that there are a number of grass species which will impact on the condition of the Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin TEC. Queensland Coal Rehabilitation Completion Criteria notes that final voids are not considered a post mining land use as they are difficult to justify as an acceptable rehabilitation post mining land use. The Rehabilitation Management Plan states that "No voids are proposed as part of the Project (areas within existing ML's will be subject to rehabilitation as approved for the existing Saraji Mine where applicable)." However, this appears to contradict the areas of subsidence which will be left to pond water which will only be managed where ponding is greater than three metres deep and persistent for longer than 12 months. In this situation, permanent drainage infrastructure will be built as required to improve drainage which may cause further impacts to the downstream environment of the waterways.	In relation to the EIS under review, CCC strongly recommends that the project is refused on the basis of: - significant impacts to ground and surface water, - its significant contribution to greenhouse gas emissions, - impacts on biodiversity values including listed threatened species, and - the permanent transformation of a natural ecosystem into a highly altered artificial ecosystem which will promote introduced feral animals and weeds to the detriment to native flora and fauna.	Appendix C-3 Terrestrial Ecology Technical Report documents the baseline for ecological values across the Project. Flora and fauna surveys were conducted to determine the ecological values of the Project Site with potential to be impacted, including threatened ecological communities and regional ecosystems (REs), and threatened fauna habitat such as riparian zones and alluvial woodland. This baseline will allow BMA to monitor net loss of biodiversity values. As described in Appendix K-1 Rehabilitation Management Plan of the amended EIS, the final landform at the Project Site will be suitable primarily for cattle grazing, with dryland cropping where Strategic Cropping Land (SCL) is verified (in the southern portion of the Project Site) and woodland habitat or watercourse in areas subject to subsidence. Where vegetation impacts have occurred as a result of recurrent ponding in subsidence areas (and this is not avoided through the installation of drainage around the ponding area), the area will be revegetated with species that are tolerant of periodic inundation. Refer to the Appendix K-2 for further detail. Native vegetation outside of the surface infrastructure footprint will be retained in a way that is compatible with the pre-existing land use for biodiversity values observed during the baseline ecological studies.
Capricorn Conservation Council	18.005	Chapter 2 Project a	Justification	The production of approximately 110 million tonnes (Mt) of product coal over the 20-year production schedule of this project is justified in the EIS as necessary to meet current and future demands for coal products in the overseas market. CCC believes that the current approved metallurgic coal extraction adequately meets the requirements to meet market demand for a number of decades. Metallurgic coal demand beyond 2050 is not known, but it is likely to be significantly reduced (compared to current demand) as new technologies are established and industry moves to cleaner, low emission manufacturing. We believe that it is inappropriate to approve this project given the significant environmental impacts, including a significant contribution to climate change.	In relation to the EIS under review, CCC strongly recommends that the project is refused on the basis of: - significant impacts to ground and surface water, - its significant contribution to greenhouse gas emissions, - impacts on biodiversity values including listed threatened species, and - the permanent transformation of a natural ecosystem into a highly altered artificial ecosystem which will promote introduced feral animals and weeds to the detriment to native flora and fauna.	Section 11.2 of Chapter 11 of the EIS has been updated to address this submission. Metallurgical coal produced in the Bowen Basin is in high demand for use in steel production in Asia. The Project provides the ability to obtain additional coal resource from an existing mining precinct utilising, where possible, existing infrastructure associated with the adjacent Saraji Mine operated by BMA. Due to the presence of existing infrastructure, the Project presents an opportunity to obtain additional coal resource in a more resource and emissions efficient manner than a true greenfield project. It is expected that product from the Project will serve the demand for coking coal for steel manufacturing and will aid in the development of renewable and low emission technologies. Significant residual impacts to water resources are discussed in Section 21.13.1 of Chapter 21. In respect to surface water, the creeks within the project site are part of the Isaac River catchment which flows into the Fitzroy River. The total catchment area upstream and within the Project Site is less than 0.4 per cent of the total catchment area for these water supply schemes. Therefore, the Project is not expected to impact these water supply schemes. Potential impacts associated with mine water management system (WMS) failure, controlled or uncontrolled discharge and contamination of surface water quality can be effectively mitigated through design, engineering, operational controls and monitoring to reduce residual risk. Groundwater is predicted to rebound following cessation of mining in 2042, but the rate of recovery is influenced by the natural limited groundwater resources and mechanisms plus the final voids in the Saraji Mine open-cut pits. During the slow recovery to equilibrium, deeper groundwater levels are recognised as residual impacts which will reduce available drawdown (water column within neighbouring bores within the zone of influence of the Project). Reduced available drawdown can reduce the bore capacity (extraction volumes and bore yields).However, from the assessment of the impacts on existing groundwater bores (Section 21.10.1.2) it is unlikely that the Project will have any material impacts on existing groundwater users. Greenhouse gas (GHG) emissions have been estimated for the project in Chapter 11. The annual GHG emissions predicted for the project (Scope 1 and Scope 2) represent 0.19 per cent of Australia's 2021 GHG emissions and 0.6 per cent of Queensland's 2021 GHG emissions. Flaring is proposed to reduce GHG emissions. Oxidation of methane to carbon dioxide via flaring results in significant reduction of GHG emissions. The EIS has identified threatened species and ecological communities in Chapter 21. An offset strategy has been developed for the project and is included in Appendix C-2 of the EIS. The offset strategy describes how BMA will secure and manage offsets to compensate for significant residual impacts resulting from the project on habitat for threatened species. Field surveys undertaken for the EIS identified the likely presence of populations of weed species and feral fauna within the survey area, as discussed in Section 4.2.6 and Section 5.2.5 of Appendix C-1. Section 9.1.1.2 of Appendix C-1 concludes that it is unlikely that the proposed works will significantly result in the further proliferation of identified feral species or the introduction of further feral vertebrate species. A Weed and Pest Management Plan will be developed for the Project, as discussed in Section 10.4.1 of Appendix C-1. The Weed and Pest Management Plan will detail specific management measures in accordance with BMA weed management and mitigation guidelines, recommended Biosecurity Queensland (BQ) methods (Department of Agriculture and Fisheries 2020) and the Isaac Regional Council Biosecurity Plan 2020-2023. Management will be tailored towards the weed species identified in Section 4.2.6 and the pest animal species identified in Section 5.2.5.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Environment Council of Central Queensland	19.001	Chapter 21	Waterways	The Project proposes to undermine three important creek systems – Boomerang, Plumtree and Hughes Creek. The estimated subsidence for these creek systems is up to 1m for Boomerang, 1.5-2m for Boomerang and 2.5-3m for Hughes Ck. The risks to these creek systems from longwall mining is severe, with potential cracking of creek beds, creation of holes or voids in creek beds, destabilisation of the bed and banks and changes in surface water quantities and overland flow paths. Considering other mines, proponents tend to underestimate impacts on creeks and rivers, and it is likely the adverse impacts will be worse than predicted.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	The amended EIS presents revised subsidence modelling for the optimised underground mine plan predicting the spatial and temporal progress of subsidence at 1, 2, 5, 10 and 20 years in Appendix B-2. The revised subsidence assessment provides improved estimations for predicted subsidence within impacted watercourses. As per Section 5.2.4 of Appendix E-1, Boomerang Creek is expected to be exposed to a maximum subsidence of approximately 1 m, Plumtree Creek to 1.3 m, and Hughes Creek by up to 3.4 m. These effects will initially impact water quality and quantity through increased erosion and reduced water flows due to ponding. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. Subsidence management plan presented in Appendix K-1, outlines an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.
Environment Council of Central Queensland	19.002	Chapter 21	Waterways	The impacts on the creeks is likely to lead to downstream impacts for the creek systems. These creeks are recognised as being important for fish passage and have riparian vegetation that is likely to be providing habitat to a number of terrestrial fauna species. The Project is located in a sensitive area where three creeks coalesce and then merge just outside the lease.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	As part of the amended EIS, the IESC comments have been addressed in Appendix B-1, Appendix B-2, Appendix C-1, Appendix D-1, Appendix D-2, Appendix E-2, Appendix E-3, Appendix E-4, Appendix F-1, Appendix F-2, Appendix F-3, Appendix K-1 and Appendix K-2.
Environment Council of Central Queensland	19.003	Chapter 21	Waterways	The EIS makes no meaningful attempt to quantify the likely downstream impacts or to assess the cumulative impacts on the creek systems, two of which are already impacted by the Saraji mine to the west. The likely impacts on riparian vegetation are not adequately considered in our view, and we believe there is a high likelihood any fringing vegetation will be damaged or destroyed by the project.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	As part of the amended EIS, the IESC comments have been addressed in Appendix B-1, Appendix B-2, Appendix C-1, Appendix D-1, Appendix D-2, Appendix E-2, Appendix E-3, Appendix E-4, Appendix F-1, Appendix F-2, Appendix F-3, Appendix K-1 and Appendix K-2.
Environment Council of Central Queensland	19.004	Chapter 21	Biodiversity	The proponent has made no serious effort to implement the principles of avoid, mitigate and offset in relation to biodiversity.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	As part of the amended EIS, the IESC comments have been addressed in Appendix B-1, Appendix B-2, Appendix C-1, Appendix D-1, Appendix D-2, Appendix E-2, Appendix E-3, Appendix E-4, Appendix F-1, Appendix F-2, Appendix F-3, Appendix K-1 and Appendix K-2.
Environment Council of Central Queensland	19.005	Chapter 21	Biodiversity	The area targeted for this project is the most significant environmental area in the mining lease. Overall, this Project is likely to impact 1,291 hectares of native vegetation. Therefore, despite the majority of the mining lease being mostly heavily cleared, this Project targets the most significant patch of remnant vegetation with multiple species recorded. The vegetation targeted is also important for habitat connectivity with remnant vegetation to the north.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The assessment of impacts to terrestrial ecology has been revised, refined and additional details have been provided in accordance with the new spatial and temporal data from Project impacts. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. Actions to minimise and mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.2 and 6.12.3.
Environment Council of Central Queensland	19.006	Chapter 21	Biodiversity	The Project area targets the majority of native vegetation in the lease, and encompasses known habitat for the Koala, Squatter Pigeon, Ornamental Snake and Greater Glider. The Project site is clearly a very significant area for the Greater Glider in particular, with multiple records present and it also contains a viable population of Ornamental Snake given the number of records. The proposed Project site also encompasses the majority of the endangered Brigalow ecological community on the entire lease.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The assessment of impacts to terrestrial ecology has been revised, refined and additional details have been provided in accordance with the new spatial and temporal data from Project impacts. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. Actions to minimise and mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.2 and 6.12.3.
Environment Council of Central Queensland	19.007	Chapter 21	Biodiversity	The proponent understates the importance of the area to migratory birds. Both Painted Snipe and Latham's Snipe have been recorded in the area, highlighting wetland habitats of value.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The assessment of impacts to terrestrial ecology has been revised, refined and additional details have been provided in accordance with the new spatial and temporal data from Project impacts. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. Actions to minimise and mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.2 and 6.12.3.
Environment Council of Central Queensland	19.008	Chapter 21	Greenhouse gas emissions	Fundamentally, the Project has failed to avoid areas of high conservation significance and has, on the contrary, selected for its Project site the highest conservation value areas in the lease.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The assessment of impacts to terrestrial ecology has been revised, refined and additional details have been provided in accordance with the new spatial and temporal data from Project impacts. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. Actions to minimise and mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.2 and 6.12.3.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Environment Council of Central Queensland	19.009	Chapter 11	Greenhouse gas emissions	The Project seeks to offset an impact which it has not even attempted to avoid. That goes against recognised principles of ecologically sustainable management, where avoidance must be implemented first, and when only unavoidable impacts are sought for offsetting. The impacts of the continued accretion of greenhouse gases in the atmosphere	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The assessment of impacts to terrestrial ecology has been revised, refined and additional details have been provided in accordance with the new spatial and temporal data from Project impacts. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. Actions to minimise and mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.2 and 6.12.3.
Environment Council of Central Queensland	19.010	Chapter 11	Greenhouse gas emissions	The scientific consensus is clear that expansion of fossil fuel production must be stopped in order to reduce global GHG emissions and avoid the potentially catastrophic impacts of unmitigated global warming and climate change.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification proesents additional context to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Environment Council of Central Queensland	19.011	Chapter 11	Greenhouse gas emissions	The proponent estimates that the project will produce 16Mt of Scope 1 & 2 emissions and 450Mt of Scope 3 emissions over its life. The proposed mitigation measures for Scope 1 & 2 emissions are also vastly inadequate and inconsistent with BHP's own climate commitments (of 30% reduction in operational greenhouse gas reductions by FY2030, against adjusted FY2020 levels. 197 countries, including Australia, agreed under the Paris Agreement to limit "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue[e] efforts to limit the temperature increase to 1.5°C above pre-industrial levels". The Paris Agreement also recognises (our emphasis) "the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge". The Queensland Government accepts the science of climate change and supports the Paris Agreement. The accretion of greenhouse gases in the atmosphere as a result of human activities has already caused changes in the climate system with tangible impacts, including in Queensland: (1) exacerbation of heatwaves; (2) long-term increase in extreme fire weather and length of the fire season; (3) changes in rainfall patterns resulting in severe flooding events; (4) mass bleaching of the Great Barrier Reef; and (5) worsening drought conditions.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification proesents additional context to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Environment Council of Central Queensland	19.012	Chapter 11	Greenhouse gas emissions	At 2019, approximately 500 billion tonnes of CO2e could be emitted before emissions will cause the 1.5°C threshold to be exceeded.15 "Committed emissions" from existing infrastructure amounted to 800 billion tonnes of CO2e. The Saraji East Mining Lease Project involves the mining of approximately 8 million tonnes of coal per year for 20 years resulting in over 450 million tonnes of greenhouse gas emissions over the life of the Project. As a result, the Project is inconsistent with the aims of the Paris Agreement and is contrary to the public interest.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification proesents additional context to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Environment Council of Central Queensland	19.013	Chapter 11	Greenhouse gas emissions	The EIS is required to address the GHG emissions of the Project, including scope 3 emissions, and consequent impacts, because: (1) it is now clear that the impacts of GHG emissions, including scope 3 emissions, are relevant to be considered as part of the consideration of the public interest of the project under the Mineral Resources Act 1989 (Qld) (MR Act) and a mandatory consideration under the EP Act. The climate change impact from this Project is relevant to the statutory criteria under the MR Act and a mandatory consideration under the EP Act. It has been accepted that GHG emissions, including scope 3 emissions, of a development are relevant to an assessment of its environmental impacts with reference to the standard criteria and of the EP Act public interest criteria of the MR Act. The Queensland Land Court has found that climate change is a matter of general public interest and the impact of GHG emissions must be considered in the grant of a mining lease. This includes the impacts of downstream, or 'scope 3', emissions. Given the significant impacts predicted to arise from the continued accretion of greenhouse gases in the atmosphere, the approval of projects that will result in further GHG emissions has implications for the human rights of people in Queensland now and in the future. Such implications must be given proper consideration in accordance with the HR Act.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, the Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas including the Project's scope 3 greenhouse gas emissions (Table 11-19).
Environment Council of Central Queensland	19.014	N/A	Greenhouse gas emissions	The Project, being a new coal mine is not consistent with ecologically sustainable development and maintaining the ecological processes on which life depends	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project Alternatives and Justification has been updated with further detail to demonstrate the Project's compatibility with the ESD objectives and principles defined in the <i>National Strategy for Ecologically Sustainable Development</i> . Refer to Section 2.5 of Chapter 2 Project Alternatives and Justification for discussion on the integration of ESD principles into the Project development.
Environment Council of Central Queensland	19.015	N/A	Greenhouse gas emissions	The Project, is not consistent with intergenerational equity as it contributes to "what might fairly be described as the greatest inter-generational injustice ever inflicted by one generation of humans upon the next"	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project Alternatives and Justification has been updated with further detail to demonstrate the Project's compatibility with the ESD objectives and principles defined in the National Strategy for Ecologically Sustainable Development. Refer to Section 2.5 of Chapter 2 Project Alternatives and Justification for discussion on the integration of ESD principles into the Project development.
Environment Council of Central Queensland	19.016	N/A	Greenhouse gas emissions	The Project, would limit the human rights of people in Queensland to an extent that is not reasonable and justifiable	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification has been updated to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas; additional detail on the assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project is presented in Section 11.7.4.
Environment Council of Central Queensland	19.017	N/A	Greenhouse gas emissions	The Project, would potentially breach your duty of care to the Australian children	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification has been updated to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas; additional detail on the assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project is presented in Section 11.7.4.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Environment Council of Central Queensland	19.018	Chapter 11	Greenhouse gas emissions	Key milestones identified by the IEA in the pathway to net zero emissions by 2050 include "no new coal mines or mine extensions" approved for development by 2021. This milestone is consistent with a carbon budget approach which determines the magnitude and rate of emissions reductions required to meet the goals of the Paris Agreement. This is done by mapping the approximately linear relationship between the cumulative increase in carbon dioxide emissions from human activities since pre-industrialisation against the increase in global average surface temperature, and developing a carbon budget; the amount of carbon that may be used before the target temperature is exceeded. In accordance with the carbon budget approach, a rapid phase out of fossil fuel combustion is required such that no new fossil fuel projects or extensions can reach production.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification has been updated to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas; additional detail on the assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project is presented in Section 11.7.4.
Environment Council of Central Queensland	19.019	Chapter 11	Greenhouse gas emissions	The Project should not proceed because: (1) the Project's GHG emissions, including scope 3 emissions, would contribute to the continued accretion of GHGs in the atmosphere to an extent that is not consistent ecologically sustainable development and with maintaining the ecological processes on which life depends; (2) the EIS fails to address the impacts of the GHG emissions, including scope 3 emissions, associated with the Project; (3) the Project's GHG emissions would contribute to the reasonably foreseeable personal injury to future generations; and (4) the Project's GHG emissions would contribute to the limitation of human rights of Queenslanders.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification has been updated to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas; additional detail on the assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project is presented in Section 11.7.4.
Environment Council of Central Queensland	19.020	Chapter 11	Supplementary EIS	A supplementary EIS must be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,30 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. The supplementary EIS must include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	The EIS amendment in Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas, including scope 3 emissions; additional detail on the assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project is presented in Section 11.7.4. BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of costs related to GHG emissions.
Environment Council of Central Queensland	19.021	Chapter 11	Greenhouse gas emissions	Chapter 11 of the EIS purports to estimate GHG emissions from the Project activities and address potential impacts;31 however, it fails to address the impacts of the Project's GHG emissions on the climate system.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, the Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas including the Project's scope 3 greenhouse gas emissions (Table 11-19).
Environment Council of Central Queensland	19.022	Chapter 11	Greenhouse gas emissions	Scope 3 emissions for the Project represent the vast majority of GHG emissions associated with the Project. Accordingly, such emissions have implications for the public interest, the environment and for the human rights of people in Queensland.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, the Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas including the Project's scope 3 greenhouse gas emissions (Table 11-19).
Environment Council of Central Queensland	19.023	Chapter 11	Greenhouse gas emissions	The purposes of an EIS include to assess the potential adverse environmental, economic, and social impacts of a project.32 As a result of the failure to report on the impacts of GHG emissions for the Project and take such impacts into account in the cost benefit analysis, the EIS is wholly inadequate and should not proceed.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS reiterates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Environment Council of Central Queensland	19.024	Chapter 11	Greenhouse gas emissions	So that the impact of those emissions can be properly considered in the cost-benefit analysis the range of costs imposed by those emissions (described as the social cost of carbon33) should be estimated. For example, Queensland is responsible for the protection of the Great Barrier Reef, which supports 70,000 jobs and \$6bn in economic activities in Australia each year. limiting global warming to 1.5°C would limit coral loss on the Great Barrier Reef to 70-90%, compared with >99% if warming increases to 2°C.34 The costs of permitting further GHG emissions must be adequately considered. Further, even if further information is provided in respect of the Project's GHG emissions and associated impacts, the Project's contributions to the continued accretion of GHG emissions and consequent impacts on the environment and human rights of people in Queensland mean that the Project should not proceed.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS reiterates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Environment Council of Central Queensland	19.025	Chapter 16	Cultural heritage	The project site has been identified as containing at least 42 Aboriginal Heritage Sites and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourse. The Project proposal to undermine three major creek systems is likely to represent a major risk to cultural heritage in that context. Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	A review of historical, archaeological and register information indicates that there are least 43 Aboriginal heritage sites within the Project Site and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourses. The impacts on these known sites, as well as the identification of any additional sites, will be managed under BMA's existing CHMP with the Aboriginal Party (CLH012020). Any potential impacts to such places will be managed under a chance finds procedure. The Project layout is designed to preferentially locate above-ground infrastructure within previously disturbed areas, and proposes underground long wall mining methods instead of open cut mining techniques to minimise adverse environmental impacts and comply with relevant regulatory requirements e.g. model mining conditions. Detailed assessment of potential impacts of mining and subsidence is provided in Chapter 5 (Land resources), Chapter 8 (Surface water) and Chapter 21 (Matters of National Environmental Significance) and supporting technical appendices. This EIS addresses feedback and additional information requested by the Independent Expert Scientific Committee to assess the Project.
Environment Council of Central Queensland	19.026	Chapter 10 Geochem	Mine Waste	It is apparent that there is the potential for selenium leachate from coal rejects from the Project, which represents a contamination risk given that selenium is bio accumulative through the food chain if released to surface waters. The proposal is to store the waste in the Saraji Mine's in-pit spoil dumps. Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, and especially after mine closure.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	Chapter 10 Geochemistry and mine waste describes the proposed measures for storage of mine waste from the Project. Sufficient capacity exists in the existing Saraji Mine waste management system to accommodate the anticipated mine waste from the Project, specifically the Bauhinia Pit provides ample capacity (some 60 million bank cubic meters (Mbcm)) to accommodate the additional volume of mine waste generated by the Project (estimated at 28 Mbcm).

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Environment Council of Central Queensland	19.027	Appendix K-1 rehabilitation management plan	Progressive Rehabilitation and Closure Plan	The EIS indicates that a Progressive Rehabilitation and Closure Plan (PRCP) for the project will only be developed sometime prior to construction. It's very difficult for the community to assess the long-term legacy issues of the project without a PRCP, and we want to see the proponent provide it prior to the grant of an EA for the project.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	The Progressive Rehabilitation and Closure Plan (PRCP) is not required to be compiled as part of the EIS; however it will be developed and submitted in combination with the Environmental Authority (EA) approval prior to construction commencing. Therefore, Appendix K-1 Rehabilitation Management Plan will inform the future Project PRCP, but will not include the level of detail required by a PRCP. The Project EA will require a PRCP to be developed prior to construction commencing and will demonstrate that the proposed Project will: - be rehabilitated to a safe and stable landform - not cause environmental harm - sustain post mining land uses. While a PRCP for the existing Saraji Mine may be developed in future, the scope of the Project will not change the rehabilitation objectives of the existing mine. BMA understand transitional PRCP notice is likely to be received with an expected due date as part of finalised EA (under DES commitment to issue transitional notices within three years). While the design of the Project is at a concept stage normal for an EIS, BMA accept the need to prepare a conceptual PRCP to inform the transitional PRCP to be prepared in future.
Environment Council of Central Queensland	19.028	Chapter 11	Air quality	The EIS identifies the risk of adverse impacts on air quality at the Saraji 2 and Saraji 3 Homesteads, due in part to the haulage of coal from the Project CHPP to the Saraji Mine CHPP. The proponent refers to co-existence agreements in place with BMA and landholders of the Homesteads, but mining companies should not be able to pressure landholders into agreements to the detriment of their health. The mine plan should not be approved if it is likely to worsen air quality at sensitive receptors.	The Project be refused. The Department of Environment and Science refers the Project to the Independent Expert Scientific Committee for assessment	The results of dispersion modelling included in Chapter 11 Air Quality and Greenhouse Gas and Appendix H-1 Air Quality Technical Report show that there is a risk of concentrations at Saraji 2 and Saraji 3 homesteads being elevated above the relevant air quality criteria. The amended EIS presents results from the cumulative impact assessment suggest the suite of mitigation measures available to the Project and in particular, those targeting improved outcomes related to the hauling of ROM coal between the CHPPs, will be sufficient to mitigate the risk of additional exceedances of the EPP(Air) objective for the 24 hour average concentration of PM10 under adverse conditions. The amended EIS commits to a proposed air quality monitoring program which will consider the use of continuous dust monitors to measure PM10 and automatic weather stations to record meteorological conditions The monitoring program will allow conditions to be monitored, allowing Project activities to be adjusted to minimise impacts as far as reasonably practicable.
Mackay Hospital and Health Service	20.001	N/A	N/A	Nil response		No response required. No changes required for the EIS in relation to this submission.
Queensland Police Service	21.001	N/A	N/A	It is acknowledged that the Project is expected to increase the demand for police and emergency services due to the anticipated increase in the non-local workforce during construction and the residential population during operation. The QPS therefore acknowledge and strongly support the proposed engagement strategies and measures pre-construction and during construction and operation to mitigate the potential impacts to emergency services, as detailed in the EIS and Social Impact Assessment. It is further noted that the traffic movement generated by the Project is not anticipated to impede emergency services operations. In this regard, the QPS has no objection to the proposed project or EIS.	The QPS look forward to further engagement as the project progresses.	N/A
Department of Resources	22.001	Chapter 1 – Introduction	Section 1.7, Table 1.1	Table 1.1 – Vegetation Management Act 1999, states that clearing of native vegetation will be cleared as a result of the project, but that mining is exempt development. This is generally correct, however clearing of vegetation for the project is only exempt on land over which a mining tenement has been granted AND the clearing has been assessed under the Environmental Authority (EA) approval. Any clearing on-lease that has not been assessed under the EA, and any clearing off-lease for the project, may require a development approval unless another exemption applies, or clearing can be carried out under an Accepted Development Vegetation Clearing Code (ADVCC). For clearing that requires a development approval under the Planning Act 2016, a section 22A Vegetation Management Act 1999 relevant purpose determination will be required from the Department of Resources prior to applying for an approval to clear.	Update Table 1.1 – Vegetation Management Act 1999, to include the following in the column titled 'relevance to project' to articulate the requirements in terms of clearing vegetation for the project: Any clearing on-lease that has not been assessed under the Environmental Authority and any clearing off-lease for the project, may require a development approval unless another exemption applies, or clearing can be carried out under an Accepted Development Vegetation Clearing Code (ADVCC). For clearing that requires a development approval under the Planning Act 2016, a section 22A Vegetation Management Act 1999 relevant purpose determination will be required from the Department of Resources prior to applying for an approval to clear. Other relevant sections of the EIS, including the following, need to be updated/amended to include the above-mentioned recommended statement, where it has not been articulated that clearing on a mining tenement must have been assessed and approved under the EA for it to be exempt for VMA matters. • Appendix A-2 Approvals Framework – Table 1 – Approvals Assessment Manager – State: Development Permit for Operational Works (Clearing Native Vegetation) – page 11 • Appendix C-1 Terrestrial Ecology Technical Report – 2.0 Regulatory Framework – 2.2 Queensland Legislation – Planning Act 2016; Vegetation Management Act 1999 – pages 6-7	No specific actions for Chapter 6, Chapter C-1 and A-3 updated with relevant text.
Department of Resources	22.002	Chapter 4 – Land use and Tenure	N/A	General advice in regard to land use and tenure for the project.	Prior to the commencement of any occupation, activity or construction upon any lands, the proponent is required to secure all appropriate land tenure and gain all necessary approvals and/or consent from all parties holding a lawful interest in the lands. It should also be noted that, in accordance with the Native Title Act 1993 (Cth), Native Title must be adequately addressed prior to the granting of any tenure interests over State lands. The proponent is encouraged to engage with the Department of Resources early to ascertain likely implications of Native Title to the project area.	Chapter 4 (Land use and tenure), Section 4.2.1, of the amended EIS reflects BMA's commitment to secure consent from all parties holding lawful interest in land impacted by the works, appropriate land tenure arrangements (e.g. easements) and obtain relevant permits and approvals prior to any activity or construction commencing on Mining Lease (ML), Mining Lease Application (MLA) and off-lease areas. Chapter 4 (Land use and tenure), Section 4.2.6, of the amended EIS outlines that there is no current Native Title claims over the Project Site.
Department of Resources	22.003	Chapter 4 – Land use and Tenure	Section – 1.3	An overhead 66kV powerline is proposed to extend off-lease and connect to the Dysart substation south of the project site.	Any approvals (including permits to occupy), landowner compensation arrangements and easements need to be registered for the proposed powerline over any affected State land.	Chapter 4 (Land use and tenure), Section 4.2.4, of the amended EIS reflects BMA's commitment to secure consent from all parties holding lawful interest in land impacted by the works, appropriate land tenure arrangements (e.g. easements) and obtain relevant permits and approvals prior to any activity or construction commencing on Mining Lease (ML), Mining Lease Application (MLA) and off-lease areas.
Department of Resources	22.004	Chapter 4 – Land use and Tenure	Section 4.2.4	The existing EWPC will be relocated and reconnected into a new infrastructure and transport corridor.	Easements need to be registered for the proposed pipeline over any affected State land.	Chapter 4 (Land use and tenure), Section 4.2.4, of the amended EIS reflects BMA's commitment to secure consent from all parties holding lawful interest in land impacted by the works, appropriate land tenure arrangements (e.g. easements) and obtain relevant permits and approvals prior to any activity or construction commencing on Mining Lease (ML), Mining Lease Application (MLA) and off-lease areas.
Department of Resources	22.005	Chapter 4 – Land use and Tenure	Section 4.2.5	There are inconsistencies between the road infrastructure requirements outlined in this section and Chapter 1 – Introduction page 1-3. For example, the introduction states that 'Initially BMA had included an operational accommodation village within the scope of Project at the commencement of the EIS...BMA has investigated alternative off-site accommodation options and opted to remove the operational accommodation village from the Project. Instead workers will be accommodated at Coppabella, Dysart or Moranbah in existing BMA accommodation villages or other accommodation in town'. However, Road Infrastructure states that 'an internal access road will be required to link the proposed accommodation villages to Lake Vermont Road...'	Amend the EIS to fix the errors and inconsistencies. Note that if accommodation villages are proposed on state land, appropriate approvals and agreements need to be in place.	Chapter 4 of the amended EIS addresses inconsistencies between the road infrastructure requirements. Further clarification has been provided in Section 4.2.5 of Chapter 4 (Land use and tenure). Chapter 4 (Land use and tenure), Section 4.2.1, of the amended EIS reflects BMA's commitment to secure consent from all parties holding lawful interest in land impacted by the works, appropriate land tenure arrangements and obtain relevant permits and approvals prior to any activity or construction commencing on Mining Lease (ML), Mining Lease Application (MLA) and off-lease areas. Section 3.6.6 of Chapter 3 (Project Description) describes the construction workers accommodation village (WAV) that may be required as a short-term temporary development to supply accommodation for construction phase only i.e. Year 1-2. The construction WAV is assessed as part of the direct disturbance associated with surface infrastructure (Table 3-3 of Chapter 3). Off-lease accommodation options will be arranged for operational workforce as described in Section 3.7.20 of Chapter 3 (Project Description).
Department of Resources	22.006	Chapter 4 – Land use and Tenure	Section 4.2.5	The project proposes that the extension of a powerline will intersect a secondary stock route south of the project site, requiring temporary closure of the stock route.	The proponent needs to obtain the relevant authority from Isaac Regional Council and Department of Resources for the temporary stock route closure.	The amended EIS reflects BMA's obligations in regard to consultation with Isaac Regional Council and Department of Resources to obtain the relevant authority for the temporary stock route closure - refer to Section 4.2.5 and Table 4-9 of Chapter 4 (Land use and tenure).
Department of Resources	22.007	Chapter 5 Appendix B-1 Land Resources	N/A	Information for noting	The Department of Resources is in the process of assessing a Regional Interest Development Application under the Regional Planning Interests Act 2014, that covers a component of the mining lease. No comment is made on the adequacy of the EIS to address the Strategic Cropping Land status, as more up to date soils information is currently being collected by the applicant to address concerns previously raised by the department.	A RIDA was issued by DSDILGP on 18 October 2021 under section 53 on the RPI Act to facilitate the construction of the 66kv powerline (RIDA reference no: RPI121/001). The RIDA also confirmed that 6.90 ha of disturbance area has been confirmed as non-SCL area and is to be removed from the SCL trigger mapping. BMA will comply with the requirements of the RIDA.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of Resources	22.008	Chapter 5	Section 5.4.3	There are inconsistencies between the soil and land suitability information provided in Appendix 1-B and Chapter 5. For example, B3bl is confirmed as SCL in the Appendix, however, is described as Class B in Table 5.6. Class B will not be SCL.	Amend the EIS to fix the errors and inconsistencies between the information contained in Table 5.6 and Figure 5-8 of Chapter 5 and the supporting information contained in the Appendix.	The amended EIS addresses inconsistency in the description of soil and land suitability provided in section 5.2.3 regarding Strategic Cropping Land Mitigation Measures to reflect characterisation of B3bl as Class B and also verified SCL. In addition, updates to errors and inconsistencies in SMU B3bl are included in Appendix B-1 and Chapter 5.
Department of Resources	22.009	Appendix B1	Section 2.1.3	Within this appendix, the crop suitability results for water erosion have been based on exchangeable sodium percentage (ESP). In the Suitability Framework for the Inland Fitzroy and Southern Burdekin area, water erosion should also be assessed using slope. The suitability framework also includes Class 3 Cotton-Furrow irrigated where there is a Plant Available Water Capacity of 75-100 mm/cm of water (i.e., less than the 100 mm/cm described in the report).	It is recommended that the discrepancies between the land suitability report and the Regional Suitability Framework be amended in the final EIS	Appendix B-1 Soils Technical Report and Chapter 5 Land resources have been amended to reflect the discrepancies between land suitability and Regional Suitability Framework.
Department of Resources	22.010	Chapter 5 Appendix B-1 (Topsoil and subsoil stripping depth assessment and SCL)	Table 5.12	Areas that have been confirmed as Strategic Cropping Land (map units A2g, B1, B2s, B3bl, E2) that are also located on the Department of Resources "Strategic Cropping Land Trigger" Map will not be suitable for topsoil and subsoil stripping, as disturbance would comprise a permanent impact on the resource.	Remove any recommendations for topsoil and subsoil stripping within Table 85 in Appendix B-1 and Table 5.12 in Chapter 5 for areas that are confirmed as Strategic Cropping Land that require separate approvals under the Regional Planning Interests Act 2014.	A RIDA was issued by DSDILGP on 18 October 2021 under section 53 on the RPI Act to facilitate the construction of the 66kv powerline (RIDA reference no: RPI121/001). The RIDA also confirmed that 6.90 ha of disturbance area has been confirmed as non-SCL area and is to be removed from the SCL trigger mapping. BMA will comply with the requirements of the RIDA. Corresponding requirements for topsoil and subsoil stripping within Table 85 of Appendix B-1 are removed.
Department of Resources	22.011	Chapter 5 Appendix K-2	Section 5.5.1	Subsidence has been predicted as a maximum of 3.5 m over the southern panels, and less in other areas of the project site. Subsidence is likely to impact on soil resources due to the net increase in slope gradients, and changes to surface hydrology. While the land use in these areas comprise grazing (and not cropping), suitable erosion control will be required in the subsidence management plan to minimise the impact on the downstream water quality.	Update the subsidence management plan to include mechanisms to ensure there is no worsening of the existing levels of soil loss within or downslope of the subject land, no increased risk of erosion on land or in waterways downslope of the subject land, and no net increase in the sediment load leaving the mining lease and entering waterways and/or watercourses. This could be achieved by the inclusion of an Erosion and Sediment Control Plan addressing Soil Erosion and Sediment Control that is prepared by a Certified Professional in Erosion and Sediment Control and developed in accordance with the International Erosion Control Association's 'Best Practice Erosion and Sediment Control' document (IECA 2008).	The amended EIS presents revised subsidence modelling for the optimised underground mine plan predicting the spatial and temporal progress of subsidence at 1, 2, 5, 10 and 20 years in Appendix B-2. The revised subsidence assessment provides improved estimations for predicted subsidence and assessment of hydraulics, hydrology and geomorphology in Appendix E-3. In the amended EIS, Appendix K-2 Subsidence Management Plan presents a pre-subsidence risk assessment and preliminary Trigger Action Management Plan to outline an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts, including creek systems. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas.
Energy Queensland	23.001	N/A	N/A	The proponent has addressed the electricity infrastructure required to service the site. Any relocations or changes to demand or new infrastructure should be discussed further with our Major Connections team.	N/A	The amended EIS provides further clarification surrounding BMA's obligation to consult with Energy Queensland (EQ) in Appendix A.
Lock the Gate Alliance	24.001	Chapter 8	Waterways	The project proposes to undermine three important creek systems – Boomerang, Plumtree and Hughes Creek. The estimated subsidence for these creek systems is up to 1 m for Boomerang, 1.5-2 m for Boomerang and 2.5-3 m for Hughes Ck. The risks to these creek systems from longwall mining is severe, with potential cracking of creek beds, creation of holes or voids in creek beds, destabilisation of the bed and banks and changes in surface water quantities and overland flow paths. In our experience, mine proponents tend to underestimate impacts on creeks and rivers, so we consider it likely the impacts will be worse than predicted. The impact on the creeks is likely to lead to downstream impacts for the creek systems. These creeks are recognised as being important for fish passage and have riparian vegetation that is likely to be providing habitat to a number of terrestrial fauna species. The project is located in a sensitive area where three creeks coalesce and then merge just outside the lease. The EIS makes no meaningful attempt to quantify the likely downstream impacts or to assess the cumulative impacts on the creek systems, two of which are already impacted by the Saraji mine to the west. The likely impacts on riparian vegetation are not adequately considered in our view, and we believe there is a high likelihood any fringing vegetation will be damaged or destroyed by the project.		The amended EIS presents revised subsidence modelling for the optimised underground mine plan predicting the spatial and temporal progress of subsidence at 1, 2, 5, 10 and 20 years in Appendix B-2. The revised subsidence assessment provides improved estimations for predicted subsidence within impacted watercourses. As per Section 5.2.4 of Appendix E-1, Boomerang Creek is expected to be exposed to a maximum subsidence of approximately 1 m, Plumtree Creek to 1.3 m, and Hughes Creek by 3.0 m. Subsidence has potential to impact water quality and quantity through increased erosion and reduced water flows due to ponding. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. In the amended EIS, Appendix K-2 Subsidence Management Plan presents a pre-subsidence risk assessment and preliminary Trigger Action Management Plan to outline an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts, including creek systems. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.
Lock the Gate Alliance	24.002	Chapter 6	Biodiversity	The proponent has made no serious effort to implement the principles of avoid, mitigate and offset in relation to biodiversity. Instead, the area targeted for this project is the most significant environmental area in the mining lease, when there are alternatives in the lease that are already cleared and have lesser conservation value. Overall, this project is likely to impact 1,291 hectares of native vegetation. The project area targets the majority of native vegetation in the lease, and encompasses known habitat for the Koala, Squatter Pigeon, Ornamental Snake and Greater Glider. The project site is clearly a very significant area for the Greater Glider in particular, with multiple records present and it also contains a viable population of Ornamental Snake given the number of records. The proposed project site also encompasses the majority of the endangered Brigalow ecological community on the entire lease. Therefore, despite the majority of the mining lease being mostly heavily cleared, this project targets the most significant patch of remnant vegetation with multiple species recorded. The vegetation targeted is also important for habitat connectivity with remnant vegetation to the north. The proponent understates the importance of the area to migratory birds. Both Painted Snipe and Latham's Snipe have been recorded in the area, highlighting wetland habitats of value. Fundamentally, the project has failed to avoid areas of high conservation significance and has, on the contrary, selected for its project site the highest conservation value areas in the lease. The project seeks to offset an impact which it has not even attempted to avoid. That goes against recognised principles of ecologically sustainable management, where avoidance must be implemented first, and when only unavoidable impacts are sought for offsetting.		In response, the EIS has been amended for Chapter 2 Project alternatives and justification to provide an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. Chapter 6 provides and overview of the avoidance, minimisation and mitigation measures for the Project's impact to biodiversity values and ecosystem. Avoidance strategies to demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapters 4-21, and specific avoidance and minimisation strategies are explained in Chapter 6 Terrestrial Ecology, Section 6.12.1. Significantly, the Project will utilise existing mining infrastructure and power/water services where available, and the Project's underground mine and infrastructure layout prioritise existing disturbance and areas previously disturbed by mining to minimise further disturbance and therefore further impact to the environment. Where disturbance to areas is required, this will be restricted to the minimum that is needed. Detailed discussion on existing habitat values and potential impacts are provided in Chapter 6, Section 6.12.3, and further detailed in Appendix C-1 Terrestrial Ecology. Proposed management plans to address specific impacts and outline mitigation measures include: •Construction Environmental Management Plan •Weed and Pest Management Plan (construction phase only) •Rehabilitation Plan (construction and operational phase) •Topsoil Management Plan (construction and operational phase) •High Risk Species Management Plan (construction phase only) •Subsidence Management Plan, including vegetation health monitoring (operational phase) •Offset Management Plan (operational phase) •Groundwater Dependent Ecosystem Monitoring and Management Plan (operational phase).

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Lock the Gate Alliance	24.003	N/A	Climate Change	The proposed project will make a massive contribution to climate change. It fails to consider or address the recent IEA report, Roadmap to Net Zero, which found that: "No new coal mines or extensions of existing ones are needed in the NZE as coal demand declines precipitously. Demand for coking coal falls at a slightly slower rate than for steam coal, but existing sources of production are sufficient to cover demand through to 2050". The proponent should be required to address the IEA Roadmap, but has failed to do so. It is very clear that commencing an 11Mtpa ROM coal project in 2024 that operates until 2044 is not consistent with a genuine NZE pathway, including that mapped out by the IEA. The proponent estimates that the project will produce 16Mt of Scope 1 & 2 emissions and 450Mt of Scope 3 emissions over its life. The scale of the emissions from this project are highly significant. The emissions are more than four times greater than the emissions predicted from the Vickery coal project (100Mtpa), which Justice Bromberg recently found, in a judgement in the Federal Court¹ 'increases the risk of the Children being exposed to harm and particularly so in the realm of the risk profile which plausibly arises should the 'tipping cascade' be triggered and engage a 4°C Future World trajectory'. Justice Bromberg stated that "I have concluded that a reasonable person in the Minister's position would foresee that, by reason of the effect of increased CO2 in the Earth's atmosphere and the consequential increase in global average surface temperature, each of the Children is exposed, through the occurrence of heatwaves or bushfires, to the risk of death or personal injury". However, the proponent fails to consider the impacts that climate change and this projects' contribution to it will have on human health, including the impacts on children. Furthermore, the proposed mitigation measures for Scope 1 & 2 emissions are also vastly inadequate and we would argue inconsistent with BHP's own climate commitments (of 30% reduction in operational greenhouse gas reductions by FY2030, against adjusted FY2020 levels). The only meaningful commitment from the proponent in this regard relates to proposing 'flaring of incidental mine gas' during operation. However, the other measures it proposes are meaningless/demonstrably insufficient, and include: • Preferecing fuel efficient mining equipment during procurement • Maintaining mining equipment in good working order..... • Using appropriately sized equipment. The EIS describes the combustion or sale of incidental mine gas as a 'further abatement opportunity' which it does not commit to. There is no mention of utilising only renewable energy and electric vehicles powered by renewable energy at the site, and no commitment to capturing all incidental gas or utilising VAM utilisation technologies. We consider this a vastly inadequate response to the threat posed by methane emissions to near-term global warming tipping points and to BHPs asserted commitments on Scope 1 and Scope 2 emissions.		In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS reiterates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Lock the Gate Alliance	24.004	Chapter 16	Heritage	The project site has been identified as containing at least 42 Aboriginal Heritage Sites and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourse. The Project proposal to undermine three major creek systems is likely to represent a major risk to cultural heritage in that context.	Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	A review of historical, archaeological and register information indicates that there are least 43 Aboriginal heritage sites within the Project Site and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourses. The impacts on these known sites, as well as the identification of any additional sites, will be managed under BMA's existing CHMP with the Aboriginal Party (CLH012020). Any potential impacts to such places will be managed under a chance finds procedure. The Project layout is designed to preferentially locate above-ground infrastructure within previously disturbed areas, and proposes underground long wall mining methods instead of open cut mining techniques to minimise adverse environmental impacts and comply with relevant regulatory requirements e.g. model mining conditions. Detailed assessment of potential impacts of mining and subsidence is provided in Chapter 5 (Land resources), Chapter 8 (Surface water) and Chapter 21 (Matters of National Environmental Significance) and supporting technical appendices. This EIS addresses feedback and additional information requested by the Independent Expert Scientific Committee to assess the Project.
Lock the Gate Alliance	24.005	Chapter 10 Geochemistry and Mineral Waste	Leachate	It's apparent that there is the potential for selenium leachate from coal rejects from the Project, which represents a contamination risk given that selenium is bio accumulative through the food chain if released to surface waters. The proposal is to store the waste in the Saraji Mine's in-pit spoil dumps. Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, and especially after mine closure.	Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, and especially after mine closure.	Chapter 10 Geochemistry and mine waste describes the proposed measures for storage of mine waste from the Project in Section 10.7. There is a risk of leachate from coal rejects containing elevated soluble metal concentrations under laboratory conditions. To demonstrate potential for selenium leachate from coal rejects, 83 of the 718 samples collected by BMA in 2021, were selected for analysis of selenium levels. The analysis identified 15 samples with leachable concentrations of selenium exceeding the NEPM (2013) GIL (0.02 mg/L). 48 samples were <0.01 mg/L and 20 samples had concentrations 0.01 to 0.02 mg/l, as included in Figure 10-2 of Chapter 10. The amended EIS confirms mineral waste generated by the Project will be managed in accordance with the mitigation measures proposed in Chapter 10, Section 10.7, including the conditions of EA EPML00862313. Existing in-pit spoil dumps will be used or developed in line with the approved Saraji Mine plan. As detailed in 10.7, the transition from open cut mining to underground longwall mining significantly reduces waste rock generation and coarse rejects columns due to a more refined and targeted mining method. Consequently, the existing in-pit spoil dumps at Saraji Mine provide ample capacity to accommodate the additional volume of mineral waste generated by the Project as demonstrated by the amended EIS. Sufficient capacity exists in the existing Saraji Mine waste management system to accommodate the anticipated mine waste from the Project; specifically the Bauhinia Pit provides ample capacity (some 60 million bank cubic meters (Mbcm)) to accommodate the additional volume of mine waste generated by the Project (estimated at 28 Mbcm). In the amended EIS, BMA has completed an analysis to demonstrate the sufficient disposal capacity is available for Project mine waste within the existing Bauhinia Pit, refer Figure 10-5. As noted in the amended Chapter 10 Geochemistry and Mine Waste, Section 10.7.5, Appendix K-1 Rehabilitation Management Plan (RMP) has been developed to describe rehabilitation of the in-pit spoil dumps at the existing Saraji Mine, which will be undertaken in accordance with the Saraji Mine EA. BMA will undertake ongoing operational geochemical characterisation of mineral waste materials in planned deposition areas at the existing Saraji Mine ahead of mining to confirm the geochemical characterisations of these materials.
Lock the Gate Alliance	24.006	N/A	Progressive Rehabilitation and Closure Plan	This EIS indicates that a Progressive Rehabilitation and Closure Plan (PRCP) for the project will only be developed sometime prior to construction.	It's very difficult for the community to assess the long-term legacy issues of the project without a PRCP, and we want to see the proponent provide it prior to the grant of an EA for the project.	As described in the amended EIS, the Progressive Rehabilitation and Closure Plan (PRCP) is not required to be compiled as part of the EIS; however it will be developed and submitted in combination with the Environmental Authority (EA) approval prior to construction commencing. Therefore, Appendix K-1 Rehabilitation Management Plan will inform the future Project PRCP, but will not include the level of detail required by a PRCP. Once detailed design and associated hydrological modelling is completed, the Project EA will require a PRCP to be developed prior to construction commencing and will demonstrate that the proposed Project will: - be rehabilitated to a safe and stable landform - not cause environmental harm - sustain post mining land uses. While a PRCP for the existing Saraji Mine may be developed in future, the scope of the Project will not change the rehabilitation objectives of the existing mine. BMA understand transitional PRCP notice is likely to be received with an expected due date as part of finalised EA (under DES commitment to issue transitional notices within three years). While the design of the Project is at a concept stage normal for an EIS, BMA accept the need to prepare a conceptual PRCP to inform the transitional PRCP to be prepared in future.

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Lock the Gate Alliance	24.007	Chapter 11	Air quality	The EIS identifies the risk of adverse impacts on air quality at the Saraji 2 and Saraji 3 Homesteads, due in part to the haulage of coal from the Project CHPP to the Saraji Mine CHPP. The proponent refers to co-existence agreements in place with BMA and landholders of the Homesteads, but mining companies should not be able to pressure landholders into agreements to the detriment of their health.	The mine plan should not be approved if it is likely to worsen air quality at sensitive receptors.	The results of dispersion modelling included in Chapter 11 Air Quality and Greenhouse Gas and Appendix H-1 Air Quality Technical Report show that there is a risk of concentrations at Saraji 2 and Saraji 3 homesteads being elevated above the relevant air quality criteria. However, results from the cumulative impact assessment suggest that the suite of mitigation measures available to the Project and in particular, those targeting improved outcomes related to the hauling of ROM coal between the CHPPs, will be sufficient to mitigate the risk of additional exceedances of the EPP(Air) objective for the 24 hour average concentration of PM10 under adverse conditions. The Air Management Plan for the Project will include details of the proposed air quality monitoring program which will consider the use of continuous dust monitors to measure PM10 and automatic weather stations to record meteorological conditions. The monitoring program will allow conditions to be monitored, allowing Project activities to be adjusted to minimise impacts as far as reasonably practicable.
Sunwater	25.001	N/A	N/A	Nil Comments	N/A	No response required. No changes required for the EIS in relation to this submission.
Mackay Conservation Group	26.001	Appendix C-1	Methodology and Impact Assessment	The survey and assessment methodology described in Appendix C-1 and in Chapter 21 was comprehensive and clearly tabulated and mapped. Numerous field surveys spanning various seasons and years were undertaken. Direct and indirect potential impacts were accurately described both qualitatively and quantitatively. A conservative approach was taken to assess the extent, intensity and duration of environmental impacts. Some minor inconsistencies that came to my attention include: - Appendix C-1, Table 25 – The total should be 925.73 ha - Appendix C-1, p. 137 – The first sentence under the heading Greater Glider refers to the Koala.		Amended EIS addresses the identified inconsistencies in Appendix C-1.
Mackay Conservation Group	26.002	Chapter 3 Chapter 21 Appendix C-1	Mitigation Measures	Section 2.5 of the Terms of Reference (TOR) for the proposal states that the preferred hierarchy for managing likely adverse impacts is to firstly avoid, then to minimise or mitigate and finally, if necessary and possible, to offset. It is evident from Chapter 3 of the EIS and from Sections 21.2-21.4 of Chapter 21 that the location and design of the proposed mine is based primarily on the coal resource and not on avoiding minimising environmental impacts. Although the underground lay-out has been 'optimised', this does not appear to reduce the overall mine area significantly. Mitigation measures to avoid environmental impacts associated with associated infrastructure (e.g. pipelines, electricity easements, gas wells) are described in Section 10 of Appendix C-1. As the mine design has not been finalised, these measures are overly vague and would only be implemented 'if practical'. This does not give the reader or decision-maker any confidence that priority will be given to avoiding and/or minimising potential environmental impacts. This is particularly evident for the riparian corridors that transect the subject site from east to west. Boomerang Creek (including Plumtree Creek and Hughes Creek), One Mile Creek and Phillips Creek are considered to be wildlife corridors of state significance while Downs Creek is a regionally significant corridor (p. 162, Appendix C-1). These provide habitat that is particularly important for existing Koala and Greater Glider populations. However, mitigation measures proposed for riparian areas include [emphasis mine]: - constructing road crossings within natural breaks in the vegetation, where practical; - trenched crossings for pipelines; and - avoiding the placement of wells for IMG drainage within 50 m of waterways and oxbow wetlands, wherever possible. Although the authors appear to recognise that there will be significant impacts to existing riparian corridors in the long-term (p.123, Appendix C-1), it is not possible to offset loss of wildlife corridors due to their location and function in the landscape. In my opinion, these are likely to cease functioning through incremental habitat loss in the long-term.		Additional discussion to support the assessment on potential impacts to habitat connectivity, particularly riparian corridors, on the Greater Glider and Koala is included in the amended Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. In Chapter 6, Section 6.12.1 outlines mitigation measures which avoid and minimise impacts to fauna, including a Rehabilitation Plan. In Appendix K-1 (Rehabilitation Management Plan) outlines ecosystem and land use establishment (Section 9.5.4) and ecosystem sustainability (Section 9.5.5) and rehabilitation methods (Section 10). Specific assessment on likely impacts to arboreal species (including Greater Glider and Koala) from loss of habitat trees and wildlife corridor impacts is included in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. Chapter 6, Section 6.12, Chapter C-1, Section 9 and Chapter 21, Section 21.10 outlines mitigation measures which avoid, minimise impacts and mitigate to wildlife corridors.
Mackay Conservation Group	26.003	N/A	N/A	I note that BHP coal was being investigated for causing environmental harm to four creeks at its Saraji mine located immediately to the west of the current proposal. Hughes Creek, One Mile Creek, Spring Creek and Phillips Creek were apparently negatively impacted by smothering, alteration to hydrology and sedimentation. Sedimentation issues were observed in the vicinity of uncontrolled creek crossings.	As more crossings are proposed as part of the Saraji East mine proposal, this should be considered as a cumulative impact for the named creeks (see Cumulative Impact Assessment below).	In the amended EIS, downstream land use and existing surface water users are described in Section 3.3 of Appendix E-1 Surface Water Quality Technical Report and Chapter 8 Surface Water, Section 8.4.5. Cumulative impacts to surface water from surrounding land uses are discussed in Section 7.0 in Appendix E-1 of the amended EIS. Given the potential for cumulative impact on stream health resulting from sediment load and turbidity, measures will be put in place to limit and control sedimentation during construction of the Project. Mitigation measures are presented in Section 8.6 of Chapter 8 and Section 6.0 in Appendix E-1 of the amended EIS.
Mackay Conservation Group	26.004	N/A	N/A	The risk of fire associated with mining operations is not discussed in relation to ecological impacts or mitigation measures, despite the fact that Buffel Grass is prevalent in the Project area. Buffel Grass poses a dangerous fire risk as its high fuel load can carry extremely hot fires. The Approved Conservation Advice for the Brigalow (Acacia harpophylla dominant and co-dominant) ecological community (Commonwealth of Australia 2013) states that: "Disturbances such as clearing, intense fires and overgrazing, tend to reduce one or more of the key habitat characteristics for the fauna species."		As part of the EIS amendment, Chapter 6 Terrestrial Ecology, Section 6.12 Bushfire Risk and Section 6.12.3, explores management measures for medium potential bushfire intensity across the Project Site to protect people/property and minimise risk for Brigalow TEC and associated habitat values. Section 6.10.2 outlines the potential impact of fire to Brigalow TEC. Chapter 6, Section 6.12.3 and Chapter C-1, Section 10.3.1 outlines mitigation measures for bushfire risk for the Project.

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Mackay Conservation Group	26.005	Chapter 21 Chapter 22	Cumulative Impact Assessment	Cumulative impact assessments are described in Chapter 21 (with regards to MNES) and in Chapter 22 (MNES and MSSES). In my opinion, neither of these was undertaken according to the TOR for the project. The EIS states repeatedly that the overall project site has low conservation values due to past grazing practices. In my opinion, mining activity therefore constitutes a cumulative impact that will incrementally reduce conservation values in the long-term. Chapter 3 of the EIS states on p. 3-10 that: "Figure 3-3 identifies two potential future development areas. These areas do not form part of the scope of the Project; however, BMA is continuing to assess the economic viability of developing these areas. The development of these areas will not be discussed further in this EIS." By carving up mining applications into smaller areas and conducting separate environmental assessments for each one, there is no opportunity for the reader/decision-maker to estimate the cumulative impacts associated with the Saraji East mining project in its entirety. This applies to all the other mines in the region that may also be considering potential future expansions. Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)' (p. 4, TOR). However, in my opinion, Table 22.1 (Chapter 22) of the EIS has considered a random selection of mines within the Bowen Basin. Although these were apparently chosen because they were within the "anticipated sphere of influence" of the Saraji East proposal some of these, such as the Carmichael Coal Mine and Rail and the China Stone projects, seem quite distant (Figure 22.1, Chapter 22) and may even comprise different vegetation communities or species assemblages. Although there was no analysis of the cumulative loss of vegetation/habitat loss amongst the listed projects, it was concluded that cumulative impacts are not significant (p. 22.6): "Given the mitigation measures proposed for the Project (Chapter 6 Terrestrial Ecology), including the establishment of offsets where required, there is no potential for significant regional cumulative impacts on ecology." In my opinion, this conclusion is flawed because: • cumulative impacts have not been adequately assessed; • the mitigation measures proposed are the same standard that would be expected at any construction site and will not prevent the incremental loss of biodiversity in the long-term; and • offsets do not (and cannot) compensate for cumulative impacts. A cumulative impact assessment should not be undertaken by comparing one mining project against another, but must take into account the incremental loss of important vegetation/habitats in relation to regional environmental targets, limits and thresholds (Minerals Council of Australia 2015). In my opinion, the cumulative impact assessment described in Chapter 21 does not meet the requirements of the TOR, namely: "The MNES section should identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity." The approach to impact assessment used in Chapter 21 is similar to that used in Chapter 22 but considers a slightly different suite of existing mining projects (Table 21-76). No justification is given for the selection of mine sites or the differences with Table 22-1. Furthermore, Table 21-76 is incomplete as it does not contain habitat to be impacted as a result of the Saraji East proposal for Squatter Pigeon (1591.12 ha), Ornamental Snake (925.73 ha), Koala (1218.99 ha) and Australian Painted Snipe (750.14 ha). The table also indicates that 265 ha of Grasslands EEC would be removed; this is inconsistent with other parts of the EIS that state that 0.075 ha of this EEC would be lost as a result of the project. The authors conclude on p. 21-257 that: "With the mitigation measures outlined in Section 21.10, the cumulative impacts to MNES across the region is minor". In my opinion, this conclusion cannot be substantiated because: • cumulative impacts have not been adequately assessed; • the mitigation measures proposed are the same standard that would be expected at any construction site and will not prevent the incremental loss of biodiversity in the long-term; and • it considers only existing mines but does not appear to consider potential future expansions or developments. As discussed above, cumulative impact assessments should not be undertaken by comparing one mining project against another, but should consider the incremental loss of important vegetation/habitats in relation to regional environmental targets, limits and thresholds (Minerals Council of Australia 2015). The Approved Conservation Advice for the Brigalow (Acacia harpophylla dominant and co-dominant) ecological community (Commonwealth of Australia 2013) states that: "Mining in the Bowen Basin in Qld and logging for fence posts in the Brigalow Belt South, Nandewar and Darling Riverine Plains bioregions of NSW continues to threaten significant areas of the Brigalow ecological community." Franks et al. (2010 a, b) recognised that environmental, social and economic cumulative impacts are associated with mining in the Bowen Basin and discuss relevant cumulative impact assessment methodologies (e.g. strategic assessment). The Minerals Council of Australia (2015) has prepared an Industry Guideline for cumulative impact assessment.		Cumulative impact assessment is completed as part of supporting technical studies (refer appendices) and summarised in the EIS Chapter 22 Cumulative Impacts. The cumulative impacts of the project is assessed in context of the existing mining and agricultural landscape context, demographics of regional communities, surrounding and downstream conditions expected during the same period as the Project such as climatic conditions, traffic conditions, water users, etc. The cumulative impact assessment has been updated to reflect recent assessments published in the public domain such as Lake Vermont mine.
Mackay Conservation Group	26.006	Appendix C-2	Offset Strategy	The offset strategy described in Appendix C-2 recommends securing offsets in a staged manner corresponding to three construction stages of the project, and following environmental assessment at each stage. In my opinion, this does not align with best practice for offsets which is to secure offsets prior to any development as recommended in the EPBC Environmental Offsets Policy (Commonwealth of Australia 2012).		As part of the amended EIS, Appendix C-2 Offset Strategy, BMA propose to deliver offset in a staged approach related to the timing of Project construction (i.e. Stage 1) and operation (i.e. Stage 2). The staged Project offsets will be provided in advance of each stage. The staged approach allows offsets to be sought for the predicted area of significant impact for each stage, with reconciliation of actual impacts by field verification to be carried through into the following stage, or for future projects, as offset credits. This approach provides an incentive to avoid and minimise impacts wherever practical. Amendment of Appendix C-2 Offset Strategy demonstrates BMA has offset available to adequately compensate for full significant impact predicted in Table 8. Prior to Stage 1, and associated direct construction impacts, the acquittal process will demonstrate offsets have been provided for existing and future significant impacts. The offsets will be subject to discussion between DCCCEW and DES and subsequent landholder negotiations. The staged approach allows offsets to be sought for the predicted area of significant impact, with reconciliation of actual impacts by field verification to be carried onto future projects as offset credits. Through the amended Offset Strategy, BMA demonstrate the Project is committed to ensuring the efficient, effective, timely, transparent, proportionate, scientifically robust, and reasonable use of offsets to deliver improved environmental outcomes under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Environmental Offset Policy (2012) and Queensland EO Act.
Mackay Conservation Group	26.007	Chapter 11	Greenhouse gas emissions	The Project should be refused on the basis of its contributions to greenhouse gas emissions and consequent climate impacts, impacts to biodiversity and water, and additional issues identified in the EIS. The project alternative, "Do Nothing"3 offers its own benefits and ought to be preferred.	hold be refused on the basis of its contributions to greenhouse gas emissions. If the Project is to proceed further, (1) a supplementary EIS (SEIS) should be undertaken considering the climate change impacts of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,4 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C; (2) the SEIS should include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS; (3) the Project should properly engage with the hierarchy of mitigation by avoiding clearing vegetation within areas of higher conservation significance, and avoid longwall mining under creek systems; (4) the SEIS must adequately address cumulative impacts to biodiversity; (5) the proponent must be required to conduct on-ground surveys of aquatic ecology and reassess the potential Project impacts accordingly; (6) the proponent must improve proposed mitigation measures, in particular for riparian areas; and (7) the proponent must prepare a Progressive Rehabilitation and Closure Plan as a component of the SEIS and prior to the grant of a draft environmental authority.	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions. Field survey results are presented in Chapter 7 Aquatic Ecology along with an assessment of potential Project impacts. A Progressive Rehabilitation and Closure Plan (PRCP) will be developed before construction begins.

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Mackay Conservation Group	26.008	Chapter 11	Greenhouse gas emissions	At 2019, approximately 500 billion tonnes of CO2e could be emitted before emissions will cause the 1.5°C threshold to be exceeded."Committed emissions" from existing infrastructure amounted to 800 billion tonnes of CO2e. The Saraji East Mining Lease Project involves the mining of approximately 8 million tonnes of coal per year for 20 years resulting in over 450 million tonnes of greenhouse gas emissions over the life of the Project. As a result, the Project is inconsistent with the aims of the Paris Agreement and is contrary to the public interest.	The EIS is required to address the GHG emissions of the Project, including scope 3 emissions, and consequent impacts. The climate change impact from this Project is relevant to the statutory criteria under the MR Act and a mandatory consideration under the EP Act. It has been accepted that GHG emissions, including scope 3 emissions, of a development are relevant to an assessment of its environmental impacts with reference to the standard criteria and of the EP Act public interest criteria of the MR Act. The Queensland Land Court has found that climate change is a matter of general public interest and the impact of GHG emissions must be considered in the grant of a mining lease. ²⁷ This includes the impacts of downstream, or 'scope 3', emissions.	The Project's compatibility was reviewed against the ESD objectives and principles defined in the <i>National Strategy for Ecologically Sustainable Development</i> . Refer to Section 2.5 of Chapter 2 Project Alternatives and Justification for discussion on the integration of ESD principles into the Project development. As the global energy and economic transition unfolds, steel is expected to remain a key building block of global infrastructure with potential for steel demand to double over the next 30 years. The target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The GHG emissions intensity of Scope 1 and Scope 2 emissions over the operation of the Project is estimated to be 0.07 CO2-e/t ROM coal. The GHG intensity for the Project is in line with emissions assessed for similar mining operations in the area such as the Olive Downs Project which is estimated at 0.118 CO2-e/t ROM coal (Pembroke Olive Downs, 2018). The annual GHG emissions predicted for the Project (Scope 1 and Scope 2) represent 0.19 per cent of Australia's 2021 GHG emissions and 0.6 per cent of Queensland's 2021 GHG emissions.
Mackay Conservation Group	26.009	Chapter 11	Greenhouse gas emissions	The Project, being a new coal mine: (1) is not consistent with ecologically sustainable development and maintaining the ecological processes on which life depends; (2) is not consistent with intergenerational equity as it contributes to "what might fairly be described as the greatest inter-generational injustice ever inflicted by one generation of humans upon the next"; ³² and (3) would limit the human rights of people in Queensland to an extent that is not reasonable and justifiable; and (4) would potentially breach your duty of care to the Australian children.	The Project should not proceed because: (1) the Project's GHG emissions, including scope 3 emissions, would contribute to the continued accretion of GHGs in the atmosphere to an extent that is not consistent with ecologically sustainable development and with maintaining the ecological processes on which life depends; (2) the EIS fails to address the impacts of the GHG emissions, including scope 3 emissions, associated with the Project; (3) the Project's GHG emissions would contribute to the reasonably foreseeable personal injury to future generations; and (4) the Project's GHG emissions would contribute to the limitation of human rights of Queenslanders.	The Project's compatibility was reviewed against the ESD objectives and principles defined in the <i>National Strategy for Ecologically Sustainable Development</i> . Refer to Section 2.5 of Chapter 2 Project Alternatives and Justification for discussion on the integration of ESD principles into the Project development. As the global energy and economic transition unfolds, steel is expected to remain a key building block of global infrastructure with potential for steel demand to double over the next 30 years. The target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Mackay Conservation Group	26.010	Chapter 11	Greenhouse gas emissions	Chapter 11 of the EIS purports to estimate GHG emissions from the Project activities and address potential impacts; however, it fails to address the impacts of the Project's GHG emissions on the climate system.	If the Project does proceed, the inadequacies in the current assessment must be addressed.	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. are presented in the amended EIS in Table 11-22.
Mackay Conservation Group	26.011	Chapter 11	Greenhouse gas emissions	Scope 3 emissions for the Project represent the vast majority of GHG emissions associated with the Project. Accordingly, such emissions have implications for the public interest, the environment and for the human rights of people in Queensland.	If the Project does proceed, the inadequacies in the current assessment must be addressed.	Section 11.6.3 of the amended Chapter 11 Air Quality and Greenhouse Gases estimates 451 Mt CO2-e of scope 3 GHG emissions will be emitted over the 20 year production schedule as presented in Table 11.16. The amended Chapter 11 Air quality and greenhouse gas confirms BMA's commitment to support industry to develop technologies and pathways capable of 30 per cent emissions intensity reduction in integrated steelmaking for Scope 3 emissions, with widespread adoption expected post 2030, and support 40 per cent emissions intensity reduction of BHP-chartered shipping of products for Scope 3 greenhouse gas emissions associated with the Project. In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Mackay Conservation Group	26.012	Chapter 11	Greenhouse gas emissions	The purposes of an EIS include to assess the potential adverse environmental, economic, and social impacts of a project. ³⁴ As a result of the failure to report on the impacts of GHG emissions for the Project and take such impacts into account in the cost benefit analysis, the EIS is wholly inadequate and should not proceed.	If the Project does proceed, the inadequacies in the current assessment must be addressed.	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. As reiterated in the amended EIS, BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Mackay Conservation Group	26.013	Chapter 11	Greenhouse gas emissions	So that the impact of those emissions can be properly considered in the cost-benefit analysis the range of costs imposed by those emissions (described as the social cost of carbon) should be estimated.	If the Project does proceed, the inadequacies in the current assessment must be addressed.	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. As reiterated in the amended EIS, BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.

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Mackay Conservation Group	26.014	Chapter 11	Greenhouse gas emissions	Further, even if further information is provided in respect of the Project's GHG emissions and associated impacts, the Project's contributions to the continued accretion of GHG emissions and consequent impacts on the environment and human rights of people in Queensland mean that the Project should not proceed.	If the Project does proceed, the inadequacies in the current assessment must be addressed.	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. As reiterated in the amended EIS, BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Mackay Conservation Group	26.015	Chapter 6	Biodiversity	In support of this submission, we attach an expert review of the EIS prepared by Dr Renata Bali, dated June 2021. In addition to raising concerns in relation to proposed offsets, Dr Bali highlights problems with unclear and inadequate mitigation measures, the inadequacies in the assessment of cumulative impacts, and the failure of the EIS to adequately address a number of the Terms of Reference. The proponent has made no serious effort to implement the principles of avoid, mitigate and offset in relation to biodiversity, in accordance with the Queensland Environmental Offsets Policy. ³⁷ Instead, the area targeted for this project is the most significant environmental area in the mining lease, in circumstances where there are alternative areas within the lease that are already cleared and that have lesser conservation value. Overall, this project is likely to impact 1,291 hectares of native vegetation. The Project area encompasses known habitat for the Koala, Squatter Pigeon, Ornamental Snake and Greater Glider. The Project site is clearly a very significant area for the Greater Glider in particular, with multiple records present and, given the number of records, it also contains a viable population of Ornamental Snake. The proposed Project site also encompasses the majority of the endangered Brigalow ecological community on the entire lease. Therefore, despite the majority of the mining lease being cleared, the Project targets the most significant patch of remnant vegetation with multiple species recorded. The vegetation targeted is also important for habitat connectivity with remnant vegetation to the north. The proponent understates the importance of the area to migratory birds. Both Painted Snipe and Latham's Snipe have been recorded in the area, highlighting wetland habitats of value.		Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates get high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. Chapter 6 provides and overview of the avoidance, minimisation and mitigation measures for the Project's impact to biodiversity values and ecosystem. Avoidance strategies that demonstrate all possible measures have been taken to avoid impacts on environmental values are described in Chapter 6, Section 6.12.1. Significant mine engineering design has been undertaken in the development of the finalised Project Footprint. It is constrained by resource, geographic, existing infrastructure and feasibility considerations. While an alternative option to not proceed with the Project would avoid potential environmental impacts, it would also result in substantial socio-economic impacts. The finalised layout of the Project aims to optimise mining to access most of the target resource with the smallest footprint to minimise impacts to land, environment, heritage and community values. The Project will adopt an optimised underground mine plan for the Project to integrate with existing Saraji Mine open cut mine and supporting infrastructure, access dipping coal seams and minimise environmental impacts. The optimised mine plan provides ideal capacity to mine the target resource within the Project Site with consideration of resource geology and quality, production rates, site constraints and potential environmental impacts. The project has been designed to utilise previously disturbed land at Saraji Mine as well as existing mine infrastructure in order to minimise further disturbance and therefore further impact to the environment. Where disturbance to areas is required, this will be restricted to the minimum that is needed. Actions to mitigate potential impacts to terrestrial ecology values (flora, vegetation communities and fauna) are outlined in Chapter 6, Section 6.12.3. Draft management plans to address specific impacts and outline mitigation measures include: •Construction Environmental Management Plan •Weed and Pest Management Plan (construction phase only) •Rehabilitation Plan (construction and operational phase) •Topsoil Management Plan (construction and operational phase) •High Risk Species Management Plan (construction phase only) •Subsidence Management Plan, including vegetation health monitoring (operational phase) •Offset Management Plan (operational phase)
Mackay Conservation Group	26.016	Chapter 6	Biodiversity	The aquatic ecology assessment was done on the basis of a desk-top survey. This is highly inappropriate, particularly as the proponent has been active in the area for many years. The only on-ground baseline studies that are referred to are from 2010, meaning the relevant data is now more than a decade old. The assessment acknowledges that critically endangered species have been identified as species of interest, yet no survey work was done to confirm the presence or absence of these species and the proponent has instead assumed that appropriate habitat was not present. Further the assessment makes definitive statements about the absence of ecological features, such as groundwater dependent ecosystems, without undertaking any ground truthing.	Without any understanding of the current state of the aquatic ecology in the vicinity of the Project, the purported risk-based assessment of Project impacts is meaningless. If the Project is to proceed, the proponent must be required to conduct on-ground surveys of aquatic ecology and reassess the potential Project impacts. In the absence of such surveys, the precautionary principle should be applied and all species that have been identified as having the potential to occur within the Project impact area, should be assumed to be present and at risk of impact from the Project.	The amended EIS presents results of baseline aquatic ecology assessment including field survey conducted in 2022 and 2023 targeting the relevant watercourses crossing the Project Site. Appendix D-1 details methodology in Section 3 and baseline field results in Section 4.2. Chapter 7 summarises this new assessment which includes review of historical information, updated desktop assessment and detailed, targeted fields assessments and analysis.
Mackay Conservation Group	26.017	Chapter 6	Biodiversity	Fundamentally, the Project has failed to avoid areas of high conservation significance and has, contrary to the hierarchy of mitigation, selected for its project site the highest conservation value areas in the lease. The Project seeks to offset an impact which it has not attempted to avoid, contrary to recognised principles of ecologically sustainable management.		Project location, including underground mine layout and siting of surface infrastructure, aims to co-locate in proximity to existing infrastructure, use previously disturbed areas, and minimise impacts on ecological, land and water resources. This is detailed in Section 2.3.8 of Chapter 2 Project alternatives and justification. The implementation of avoidance strategies is limited by the location of the coal resource. The Project has however, maximised the retention of vegetation across the project footprint by implementing underground mining methods, rather than open-cut mining. In areas where vegetation clearing is unavoidable, the Project will offset these impacts.
Mackay Conservation Group	26.018	Appendix D-1 Aquatic Ecology Technical Report Executive Summary	Water impacts	The Project proposes to undermine three important creek systems – Boomerang, Plumtree and Hughes Creek. The estimated subsidence for these creek systems is up to 1m for Boomerang, 1.5-2m for Boomerang and 2.5-3m for Hughes Creeks. ⁴¹ The risks to these creek systems from longwall mining is severe, with potential cracking of creek beds, creation of holes or voids in creek beds, destabilisation of the bed and banks and changes in surface water quantities and overland flow paths. Subsidence also has the potential to reduce the future farming potential of land on the Project site and downstream through direct impacts and through disruption to water supply. In our experience, mine proponents tend to underestimate impacts on creeks and rivers, so we consider it likely the impacts will be worse than predicted.		As per Section 5.2.4 of Appendix E-1, only Boomerang Creek, Plumtree Creek and Hughes Creek intersect the underground mining panels and the predicted area of subsidence. Stream beds of Boomerang and Hughes Creek will be likely subject to subsidence over longwall panels, causing depressions in the landscape and surface cracking. These effects will initially impact water quality and quantity through increased erosion and water attenuation. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. Subsidence management plan presented in Appendix K-1, outlines an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. Crack infilling with concrete or clay is not proposed. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.
Mackay Conservation Group	26.019	Appendix E-1 Surface Water Quality Technical Report Appendix K-2	N/A	The EIS suggests that subsidence impacts will be managed by, amongst other things, crack infilling with concrete or clay, but evidence from similar activities elsewhere suggests that not only can these mitigation measures fail, they have the potential to exacerbate the environmental harm.	There should be no longwall panels allowed directly beneath creeks or within an appropriate set back area.	As per Section 5.2.4 of Appendix E-1, only Boomerang Creek, Plumtree Creek and Hughes Creek intersect the underground mining panels and the predicted area of subsidence. Stream beds of Boomerang and Hughes Creek will be likely subject to subsidence over longwall panels, causing depressions in the landscape and surface cracking. These effects will initially impact water quality and quantity through increased erosion and water attenuation. Impacts of subsidence will reduce over time as bed load sediments fill in the depressions as flow events commence. Subsidence management plan presented in Appendix K-1, outlines an adaptive management framework to respond to subsidence impacts based on ongoing monitoring and review. Through implementation of the Subsidence Management Plan, BMA will manage impacts on landform, surface water, groundwater, ecology and infrastructure prior to subsidence impacts. The Plan outlines SMART controls for mitigation, monitoring and rehabilitation, including monitoring erosion and sedimentation, surface cracking across the subsidence impacted areas. Crack infilling with concrete or clay is not proposed. The underground mine plan represents the assessment scenario defined for the Project EIS in 2016. Prior to development of the Project, the underground mine plan will be reviewed and revised to accommodate the progress of open cut mining; where panel 1 is removed, the resulting mine plan has potential to avoid and minimise impacts to Hughes Creek.

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Mackay Conservation Group	26.020	Appendix E-1 Surface Water Quality Technical Report	N/A	The impacts on the creeks are likely to lead to downstream impacts for the creek systems. These creeks are recognised as being important for fish passage and have riparian vegetation that is likely to be providing habitat to a number of terrestrial fauna species. The Project is located in a sensitive area where three creeks coalesce and then merge just outside the lease.		Based on the conceptual ponding assessmnt presented in the amended EIS at Appendix E-4, Appendix K-1, Section 3.4, recognises potential for ponding areas within the creeks to restrict the movement of fish, especially during low flow conditions, potentially resulting in fish being stranded in subsided areas. The likelihood of this occurring has been assessed as low as only common species of fish and turtles are known to exist in these watercourses. These species have good dispersal capabilities tolerant of harsh environmental conditions and are not sensitive to minor modifications to watercourses. Furthermore, over time the ponding areas within the creeks will fill with sediment and the creek bed will be returned to a near constant grade. Therefore, any restrictions to the movement of fish caused by ponding areas within the creeks will be temporary.
Mackay Conservation Group	26.021	Appendix E-1 Surface Water Quality Technical Report	N/A	The EIS states:44 "Prior to construction, REMP monitoring will be carried out to collect a minimum of 18 data values over at least two years to inform the development of site-specific surface WQO to be adopted for the Project. Prior to construction, BMA will develop site-specific water quality objectives to be incorporated into a REMP for the Project." 53. This work should have been conducted prior to exhibiting the EIS to allow the community to better interrogate the likely impacts of the Project. The results of the REMP must be made publicly available during the lifetime of the project, if it proceeds. 54. The EIS also states: "This report concluded that changes in median water quality after mining (the existing operations only) were within acceptable limits for slightly-to-moderately disturbed (SMD) systems or remained within applicable guidelines for those operations." 55. However, the data presented in the EIS shows water quality does degrade and, for some waterways and some chemicals it degrades substantially, between upstream and downstream locations. Applicable water quality guidelines should not be treated as a limit that can be reached before a problem is identified. In the absence of local studies on appropriate water quality limits as per the Australian and New Zealand Water Quality Guidelines for Fresh and Marine Waters, the Project should be required to maintain water quality at levels that at least match upstream levels. 56. Further, the proposed monitoring and response plan does not give the community confidence that the mine will respond to any water quality exceedances in a timely manner. The Preliminary response plan for exceedance of water quality objectives46 uses terms such as "as soon as practicable" and "as soon as reasonably possible" providing no clear requirement for the proponent to respond to water quality issues in a quick and effective manner. 57. The EIS claims that the Project has sufficient water allocations to meet its requirements but it is clear that the water balance modelling used "historical climate and flow gauging data". Such an approach is inadequate in an environment where climate change is already changing the hydrological system and is likely to continue to impact water availability over the life of the Project.		Chapter 8, Section 8.3.1, describes surface water quality drawing on water quality datasets comprising monitoring data from locations monitored as part of receiving environment monitoring programs (REMP) for Saraji Mine (SRM) and Peak Downs Mine (PDM) between July 2012 and July 2022, dependent on location. Data was collected and assessed for the following purposes: - from upstream of any mining activity to develop sub-regional WQOs - from downstream of the existing Saraji Mine to assess the existing baseline conditions of the Project Site. Monitoring data was available for various upstream and downstream locations surrounding the Project Site (Figure 8-1 of Chapter 8). Data collected from downstream of the existing Saraji Mine was representative of the existing baseline conditions of the Project Site discussed in detail in Appendix E-1 Surface Water Resources Technical Report. Historic water quality data for the catchment upstream of Saraji East and upstream of the existing mines were compared to WQOs outlined in ANZG 2018 and EPP 2019 (Water Isaac River 1301). Due to significant differences in measured water quality background parameters between this sub-regional catchment and the set WQOs for the regional catchment, it was considered appropriate to develop site specific WQOs (Table 3 of Appendix E-1). Methodology for the development of site specific or sub-regional WQOs is outlined in Appendix C of Appendix E-1 and data sampling locations for site specific WQOs development are presented in Figure 5 of Appendix E-1. Default (existing) guidelines values are presented alongside the site specific WQOs wherever these are different from the developed WQO. The need to utilise licensed releases is not expected, however a licensed release point has been included for contingent management of water storages in unforeseen conditions under high flow conditions. The potential impact from licensed releases was assessed in a stress test scenario in Appendix E-2 Mine Water Balance Technical Report (AECOM, 2023) which considered electrical conductivity (uS/cm) as the limiting pollutant. The modelling of this scenario predicted no significant impact. Discharge criteria and trigger values for the unlikely case of a discharge, have been developed in accordance with Model water conditions for coal mines in the Fitzroy basin, existing EAs of adjacent BMA mines and 80th percentile values of background water quality where appropriate Appendix E-1, Section 4.2, provides further information on interpretation and assessment of water quality. Actions undertaken in response to an exceedance in water quality criteria are outlined in Table 9, within Section 7.5 of Appendix E-1. In addition to the proposed mitigation(s) developed for the identified risks, appropriate management of surface water resources will involve the development of Plan documentation, which will be developed during the detailed design phase, including: - Site Water Management Plan (SWMP) to manage contaminants and containment in regulated water structures. Receiving Environment Monitoring Program (REMP) to identify potential impacts to surface waters during operation and licensed releases. Trigger Action Response Plan (TARP) to specify corrective actions in the event of trigger exceedances. Monitoring sites directly upstream and downstream of the Project will be established for each impacted watercourse as part of the REMP. This would allow for a direct comparison between upstream and downstream WQ and for the accurate evaluation of mining impact. This comparison will allow changes in water quality to be identified, providing the opportunity for quick and targeted mitigation responses as a result. If an exceedance occurs, mine water dam overtopping or compromised stream health, the TARP will specify corrective actions and responses required in the event of trigger exceedances. The TARP will apply to the construction, operation and decommissioning stages of the Project. Site-specific water quality objectives or trigger values will be developed for the Project in line with the REMP. The TARP may also include ground condition, vegetation cover, erosion and other rehabilitation completion criteria. Preliminary response plan for exceedance of water quality objectives is presented in Table 9 of Appendix E-1.
Mackay Conservation Group	26.022	Appendix E-1 Surface Water Quality Technical Report	N/A	Changes to the hydrological regime have the potential to both reduce available water supplies and increase the risk of release of mine water through intensification of storm events when the water management systems are more likely to have insufficient storage capacity to contain large rainfall events.		The baseline hydrological condition of the waterways at the site location has been assessed as a moderately disturbed catchment (with existing agriculture and mining operations upstream), comprising ephemeral watercourses with nil to negligible flow during normal conditions and high sediment loads/variable water quality during flow events. During operation of the mine, the release of mine affected water into receiving surface waters has the potential to impact on water quality if not managed appropriately; therefore, the development of an mine water management system (WMS) has been undertaken and is discussed Appendix E-2 Mine Water Balance Report. The WMS can accommodate the expected inflows to the system (pit sump, rainfall, runoff, treated effluent, MAW) without the risk of uncontrolled releases (spills) even when subject to a range of potential scenarios, including baseline climate conditions, potential climate change conditions, and temporary inoperability of water transfer infrastructure. Accordingly, uncontrolled spills and licensed release(s) are not expected; however, application will be made for a licensed release point for the Process Water Dam as a tool to manage MAW inventory levels for unforeseen conditions as a contingency. An example of a contingency scenario might involve unusual climatic conditions (i.e. rainfall) exceeding the DSA / ESS containment criteria for the MAW structures. The proposed licensed release point will discharge to Boomerang Creek. The proposed release point would principally be utilised as a water management strategy to avoid uncontrolled discharge (spills) from MAW dams.
Mackay Conservation Group	26.023	Appendix E-1 Surface Water Quality Technical Report	N/A	Further, the likely impacts on riparian vegetation are not adequately considered in our view, and we believe there is a high likelihood any fringing vegetation will be damaged or destroyed by the project.		Riparian vegetation is described as providing habitat connectivity suitable for foraging and dispersal of Greater Glider and Koala. Assessment on potential impacts to habitat connectivity on the Greater Glider and Koala is outlined in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. In Chapter 6, Section 6.12 outlines mitigation measures which avoid, minimise and mitigate impacts to fauna, including a Rehabilitation Plan. In Appendix K-1 (Rehabilitation Management Plan) outlines ecosystem and land use establishment (Section 9.5.4) and ecosystem sustainability (Section 9.5.5) and rehabilitation methods (Section 10). Assessment on potential impacts to habitat connectivity on the Greater Glider and Koala is outlined in Chapter 6, Section 6.10.4. Chapter 6, section 6.12.1 outlines mitigation measures which avoid and minimise impacts to fauna, including a Rehabilitation Plan. Appendix K-1 (Rehabilitation Management Plan) outlines ecosystem and land use establishment (Section 9.5.4) and ecosystem sustainability (Section 9.5.5) and rehabilitation methods (Section 10). Specific assessment on likely impacts to arboreal species (including Greater Glider and Koala) from loss of habitat trees and wildlife corridor impacts is included in Chapter 6, Section 6.10.4, Chapter C-1, Section 9 and Chapter 21, Section 21.9. Chapter 6, Section 6.12, Chapter C-1, Section 9 and Chapter 21, Section 21.10 outlines mitigation measures which avoid, minimise impacts and mitigate to wildlife corridors.
Mackay Conservation Group	26.024	Appendix E-1 Surface Water Quality Technical Report	N/A	Finally, the EIS makes no meaningful attempt to quantify the likely downstream impacts or to assess the cumulative impacts on the creek systems, two of which are already impacted by the Saraji mine to the west.		Data collected from downstream of the existing Saraji Mine was representative of the existing baseline conditions of the Project Site discussed in detail in Appendix E-1 Surface Water Resources Technical Report. Chapter 8 Surface water, Section 5, examines potential downstream impacts, including contamination, erosion and sedimentation, and releases of mine affected water. The proposed water management system has been developed as a concept with adequate capacity to avoid releases. If a system failure were to occur, this could potentially lead to discharge of MAW to the receiving environment in locations where mine water is able to migrate from the containment area into Boomerang and/or Hughes Creek. Based on the results of the modelling undertaken for the mine water balance, the likely requirement for licensed releases is very low, and if they were to occur it is not expected that there would be any residual impacts. Monitoring upstream and downstream of the mine release site during periods of mine water releases, also referred to as Receiving Environment monitoring. Triggers or limits will be applied to this monitoring for key indicators to ensure downstream water quality does not exceed levels authorised in the approval.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Mackay Conservation Group	26.025	Chapter 16	Heritage	The Project site has been identified as containing at least 42 Aboriginal Heritage Sites and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourse. The Project proposal to undermine three major creek systems is likely to represent a major risk to cultural heritage in that context. Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	A review of historical, archaeological and register information indicates that there are least 43 Aboriginal heritage sites within the Project Site and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourses. The impacts on these known sites, as well as the identification of any additional sites, will be managed under BMA's existing CHMP with the Aboriginal Party (CLH012020). Any potential impacts to such places will be managed under a chance finds procedure. The Project layout is designed to preferentially locate above-ground infrastructure within previously disturbed areas, and proposes underground long wall mining methods instead of open cut mining techniques to minimise adverse environmental impacts and comply with relevant regulatory requirements e.g. model mining conditions. Detailed assessment of potential impacts of mining and subsidence is provided in Chapter 5 (Land resources), Chapter 8 (Surface water) and Chapter 21 (Matters of National Environmental Significance) and supporting technical appendices. This EIS addresses feedback and additional information requested by the Independent Expert Scientific Committee to assess the Project.
Mackay Conservation Group	26.026		Leachate	It is apparent that there is the potential for selenium leachate from coal rejects from the Project. This represents a contamination risk if released to surface waters given that selenium bioaccumulates through the food chain. The proposal is to store the waste in the Saraji Mine's in-pit spoil dumps. Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, especially after mine closure.	Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, and especially after mine closure.	Chapter 10 Geochemistry and mine waste describes the proposed measures for storage of mine waste from the Project. Sufficient capacity exists in the existing Saraji Mine waste management system to accommodate the anticipated mine waste from the Project, specifically the Bauhinia Pit provides ample capacity (some 60 million bank cubic meters (Mbcm)) to accommodate the additional volume of mine waste generated by the Project (estimated at 28 Mbcm).
Mackay Conservation Group	26.027	Chapter 5	Progressive Rehabilitation and Closure Plan	This EIS indicates that a Progressive Rehabilitation and Closure Plan (PRCP) for the project will only be developed sometime prior to construction. It is very difficult for the community to assess the long-term legacy issues of the Project without a PRCP, and we want the proponent to provide it prior to the grant of an EA for the Project.		The Progressive Rehabilitation and Closure Plan (PRCP) is not required to be compiled as part of the EIS; however it will be developed and submitted in combination with the Environmental Authority (EA) approval prior to construction commencing. Therefore, Appendix K-1 Rehabilitation Management Plan will inform the future Project PRCP, but will not include the level of detail required by a PRCP. The Project EA will require a PRCP to be developed prior to construction commencing and will demonstrate that the proposed Project will: - be rehabilitated to a safe and stable landform - not cause environmental harm - sustain post mining land uses. While a PRCP for the existing Saraji Mine may be developed in future, the scope of the Project will not change the rehabilitation objectives of the existing mine. BMA understand transitional PRCP notice is likely to be received with an expected due date as part of finalised EA (under DES commitment to issue transitional notices within three years). While the design of the Project is at a concept stage normal for an EIS, BMA accept the need to prepare a conceptual PRCP to inform the transitional PRCP to be prepared in future.
Mackay Conservation Group	26.028	Chapter 11	Air quality	The EIS identifies the risk of adverse impacts on air quality at the Saraji 2 and Saraji 3 Homesteads, due in part to the haulage of coal from the Project CHPP to the Saraji Mine CHPP. The proponent refers to co-existence agreements in place with BMA and landholders of the Homesteads, but mining companies should not be able to pressure landholders into agreements to the detriment of their health. The mine plan should not be approved if it is likely to worsen air quality at sensitive receptors.		In the amended EIS, the results of dispersion modelling included in Chapter 11 Air Quality and Greenhouse Gas and Appendix H-1 Air Quality Technical Report show there is a risk of concentrations at Saraji 2 and Saraji 3 homesteads being elevated above the relevant air quality criteria. However, results from the cumulative impact assessment suggest the suite of potential mitigation measures available to the Project and in particular, those targeting improved outcomes related to the hauling of ROM coal between the CHPPs, will be sufficient to mitigate the risk of additional exceedances of the EPP(Air) objective for the 24 hour average concentration of PM10 under adverse conditions. The Air Management Plan for the Project will include details of the proposed air quality monitoring program which will consider the use of continuous dust monitors to measure PM10 and automatic weather stations to record meteorological conditions. The monitoring program will allow conditions to be monitored, allowing Project activities to be adjusted to minimise impacts as far as reasonably practicable.
Mackay Conservation Group	26.029	Chapter 2	Section 2.2.1	Section 2.2.1 of the EIS purports to include a consideration of the 'Do Nothing' alternative to the Project. However, this section only considers disbenefits of the 'Do Nothing' alternative and does not consider the benefits of the Project not proceeding.	Benefits of the 'Do Nothing' alternative include: (1) Improved protection of local biodiversity by avoiding the impacts outlined in paragraphs 40 to 48 of this submission; (2) Improved protection of water resources by avoiding the impacts outlined in paragraphs 49 to 60 of this submission; (3) Contributing to international obligations to limit temperatures to well below 2 degrees Celsius, and preferably to 1.5 degrees Celsius, compared to pre-industrial levels;50 (4) Supporting the transition to renewable energy which the IEA Net Zero by 2050 report identifies will offset existing jobs three to one at a global level. Queensland must transition quickly to take advantage of this opportunity; (5) Reducing impacts on public assets such as the Great Barrier Reef by avoiding GHG emissions; (6) Avoiding health and amenity impacts on surrounding communities through the reduction of noise, dust and visual impacts; (7) Avoiding subsidence impacts and the associated impacts on agriculture, downstream water users and the environment; and (8) Supporting long term agricultural production.	Section 2.2.1 of the EIS has been updated to reflect the benefits of the 'Do Nothing' approach. On ML 1775, open cut mining is authorised to occur to the extent of the mining lease; without the Project, open cut mining can continue to the extent authorised by existing Environmental Authority (EA) Permit: EPML00862313. Land under MLA would continue to be used for grazing however, the land tenure overlying the resource would remain for future development subject to relevant policy and regulatory approvals in place at the time of application.
Mackay Conservation Group	26.030	N/A	Water Climate Change	There is another avenue by which the Project should be refused due to water and climate change impacts; that is, the doctrine of the public trust. The state is subject to a public trust duty to protect the air, atmosphere and water resources, including groundwater. This is reflected in the object of the EP Act, namely "to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development)" (section 3). The assets are held in trust for the people. The public trust doctrine regulates the Queensland Government's exercise of power under the EP Act to determine the development application for the project, either as part of the 'public interest', or separately under the common law. That duty is breached by a determination to grant development consent in circumstances where the development will cause harm to the environment of Queensland and contribute to anthropogenic climate change which will be responsible for, amongst other impacts, harm to the Great Barrier Reef. This argument arises from the particular application of the public trust doctrine to essential natural resources. With respect to these core resources, the state's public trust obligations prevent it from depriving a future legislature of the natural resources necessary to provide for the well-being and survival of its citizens. The roots of the public trust doctrine are in Roman law, the Institutes of Justinian, part of the Corpus Juris Civilis. The Institutes of Justinian declared 'the following things are by natural law common to all –the air, running water, the sea, and consequently the seashore. The public trust operates similarly to basic trust principles, which impose upon the trustee a duty to protect the trust property against damage or destruction. The trustee owes this duty equally to both current and future beneficiaries of the trust. In natural resources cases, the trust property consists of a set of resources important enough to the people to warrant public trust protection. The government, as trustee, has a duty to protect the trust assets from damage so that current and future trust beneficiaries will be able to enjoy the benefits of the trust. The Institutes of Justinian included the air in the list of assets "by natural law common to all". Just as the state has a duty to ensure the continued availability and existence of its water resources for present and future generations, so it has a duty to protect the air, atmosphere and the climate from substantial impairment. Approval of the Project is fundamentally inconsistent with each duty. damage so that current and future trust beneficiaries will be able to enjoy the benefits of the trust.		The environment in Queensland is protected by the Environment Protection Act 1994 (EP Act). The object of the EP Act is to "protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends". The object of the EP Act is achieved by an integrated management program which covers multiple phases, relating to the existing state of the environment, developing and implementing effective environmental strategies, and ensuring accountability in the adoption of these strategies. The EP Act is supported by specific policies related to individual environmental factors, including air, water, etc. The EP Act does not refer to "the doctrine of the public trust". Under the EP Act, the terms of reference (TOR) defined for a project set out the content requirements of the environmental impact statement (EIS) required for a project to be considered for approval. The EIS for the project has been developed to address the TOR set, as per the requirements of the EP Act. The EIS for the project has investigated the potential impacts (both direct, indirect and cumulative) of the project on environmental factors (e.g. air, water, etc) in accordance with the EP Act and other relevant Queensland and Commonwealth Legislation. In terms of air specifically, the EIS has assessed the potential impacts of the project with respect to air quality objectives listed in the <i>Environmental Protection (Air) Policy 2019</i> (EPP Air), which is subordinate legislation made under the EP Act. The stated goal of the EPP Air is to "achieve the object of the [EP] Act in relation to the air environment."
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.001	Throughout EIS	N/A	We also note that the acronym "DATSIP" appears in the document, however due to Machinery of Government changes, this should now be DSDATSIP.		Changed throughout.

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Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.002	Chapter 17	Childcare	The EIS states that "Moranbah, Dysart and Middlemount each have childcare centres with a limited number of current vacancies. With a residential population increase of 270 people, new residents may include approximately 26 children 0-4 years (based on the percentage of children of this age in the Isaac LGA in 2016 at 9.7 per cent), some of whom would require childcare. With respect to out of school hours' care, 270 new residents could see approximately 42 new children between 5 and 14 years, and if 7.8 per cent of them required care (as per the ABS survey results), up to four extra places would be required across the LGA. This is likely to be within the current capacity of local childcare centres and the family day care scheme. Prior to Project construction, if consultation with IRC and childcare providers indicates that Project demand exceeds capacity, BMA will liaise with local childcare providers, the Department of Communities Child Safety and Disability (DCCSD) and IRC to identify potential response." (EIS – Childcare - chapter 17 Social p.37) DSDSATSIP is not responsible for child care provision. It is understood that this most likely makes reference to the former department prior to the 2020 MOG.	It is recommended that the statement be edited to the below: "BMA will liaise with local childcare providers, the Department of Education and IRC to identify a potential response."	The EIS has been updated with "BMA will liaise with local childcare providers, the Department of Education and IRC to identify potential responses" if consultation with IRC and childcare providers indicates that Project demand exceeds childcare capacity.
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.003	Chapter 17 Social 2 – 3.6.7 Community and Civic services	3.6.7 Community and Civic services	The EIS makes reference to "Moranbah's new Youth and Community Centre (due for completion 2019). Centre has been developed through partnership between the IRC, BMA, local community groups and the Department of Communities, Child Safety and Disability Services" (Social 2 – 3.6.7 Community and Civic services (p.86)) DSDSATSIP is not responsible for funding community centres. The reference is to the former department prior to the 2020 MOG.	It is recommended that the statement be edited to the below: Moranbah's new Youth and Community Centre (due for completion 2019). Centre has been developed through partnership between the IRC, BMA, local community groups and the Department of Communities, Housing and Digital Economy."	Reference to Moranbah's Youth and Community Centre within section 3.6.8 of Appendix L-1 Revised SIA has been amended to "The centre was developed through a partnership between the IRC, BMA, local community groups and the Department of Communities, Housing and Digital Economy".
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.004	Appendix I - social impact assessment	N/A	The EIS states that "Council infrastructure and services which support community wellbeing and development include civic centres and community halls, pools (and in Moranbah, the Aquatic Centre), libraries in each town, the Moranbah Art Gallery, regular community events, and a wide range of sporting and recreation facilities...." "The need for community and individual support services will need to be closely monitored during the first 3 years of operations, in cooperation with MDSS, Department of Communities, Disability Services and Seniors." (Appendix I - social impact assessment p.143). DSDSATSIP is not responsible for the provision of community and individual support services. The reference is to the former department prior to the 2020 MOG.	It is recommended that the statement be edited to the below: "The need for community and individual support services will need to be closely monitored during the first 3 years of operations, in cooperation with MDSS, Department of Communities, Housing and Digital Economy." Consultation with the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships may need to occur if there is an impact on community and individual support services used by seniors, people with disability or Aboriginal or Torres Strait Islander peoples.	It is noted that the Department of Communities, Disability Services and Seniors is the former department prior to the 2020 MOG. Section 4.4.3 Impacts on social infrastructure of Appendix L - Social Impact Assessment has been amended to 'The need for community and individual support services will need to be closely monitored during the first 3 years of operations, in cooperation with MDSS, Department of Communities, Housing and Digital Economy'.
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.005	Chapter 17	People with Disability	Low proportion of people with Disability It is noted that there is a low rate of people with reported Disability in the Isaac LGA, with the EIS stating that "at the 2016 Census, there were 374 people in the Isaac LGA with a need for core assistance, representing 1.8% of the population (compared to 5.2% in Queensland) with highest rates of core assistance requirements seen in the older age groups. Annex A Figure A-1 shows the percentage of each age cohort with a need for core assistance for Isaac LGA and Queensland and indicates that the rate of Disability was lower in Isaac LGA than the Queensland average for every age group. The overall low percentage is attributable to the LGA's younger age profile and limited services to support the wellbeing and participation of people with Disability. At the September 2017 quarter, in the Isaac LGA there were 208 people in receipt of a Disability support pension which was a rate of 1.3 per 100 people compared to Queensland's rate of 4.1 per 100 people. (Appendix I social impact assessment p.49) Training and employment for people with Disability- The SIA identifies for the provision of training, and employment for women, Indigenous people and people with Disability (Key matters, Workforce management p.36) along with community objectives for employment which were identified by SIA interviews and workshops included "improving the limited employment opportunities for people with Disability" (3.7 Economic and employment profile – Appendix I social impact assessment (p.89)) To meet these objectives "As part of its commitment to workplace diversity and inclusion, BMA will also collaborate with Hinterland Community Care in Dysart and MDSS in Moranbah to identify and support programs which develop employment pathways for local people with Disability." (Training and development – Appendix I Social impact assessment p.175). This will be supported by BMA's training supply strategy "there will be increased training opportunities for young people, women, Indigenous people, and people with Disability in the Isaac LGA and MIW region." (p.176) DSDSATSIP understand however, that with the expected population increase as a result of the project, according to consultation with local providers community and civic services including Disability services there is limited capacity to deal with the increase. This is also referenced in issues identified by stakeholders that includes service deficits for "Disability support and employment pathways, mental health and allied health" (3.6 social infrastructure and services p.79) with "The need for community and individual support services will need to be closely monitored during the first 3 years of operations, in cooperation with MDSS, Department of Communities, Disability Services and Seniors." (p.143).	DSDSATSIP note that while there is currently a low proportion of people with Disability in the Isaac LGA in comparison with the Queensland average, people with Disability often face barriers to training and employment. DSDSATSIP support the objectives for improving the limited employment opportunities for people with Disability and collaborative efforts with local providers to identify support programs which develop employment pathways along with BMA's training supply strategy which includes increased training opportunities for people with Disability in the Isaac and MIW region. DSDATSIP commends BMA on its commitment to develop employment pathways for people with disability. DSDSATSIP note that due to expected population increases, consultation with local providers indicates limited capacity to accommodate the increase. DSDSATSIP encourage BMA to work with local providers and community and government stakeholders to ensure sufficient services are available to meet the needs of people with Disability.	Section 17.5.5 of Chapter 17 acknowledges community and civic services such as disability services have limited capacity to an increased population. BMA's current Community Development Management Plan includes a focus on mental health partnerships in the Bowen Basin, which is likely to see some increased capacity of support services before the Project is developed. In the amended EIS (Chapter 17 Social, Table 17-11), BMA commits to initiate engagement with Hinterland Community Centre (HCC) to identify the employment aspirations of local people with disability and match State Government funding provided to support employment skills development and pathways to employment for people with disability who live in Moranbah or Dysart.
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.006	Chapter 17	Employment (general)	Industry employment: As of 2016 census the mining, agriculture, forestry and fishing industries were the primary employers of workers residing in Isaac LGA, accounting for 37.7% and 10.4% of employment respectively (2.3.4 – appendix m1 economics technical report Employment by industry p.25) Job creation: It is noted that construction will offer up to 1000 jobs by FY2022 benefitting construction industry personnel from the local, regional and broader Qld areas. At full development (potentially at 2025), up to 500 operational would be employed. While it mentions existing employed, underemployed and unemployed mining workforce, new recruits to mining and local young people via businesses and industry engagement and procurement strategies, recruitment strategy supporting settlement strategy there is no specific reference to engagement with training and development for people with Disability targets. There are targets under workforce diversity for Indigenous employment (5.75%) and women (goal of 50% overall) (Appendix I 1 Social impact Assessment p.175). Impact of project closure: The Project is proposed to be operational for approximately 20 years with potential to extend the mine life. However, should the project cease its operation, closure and decommissioning activities can be expected from approximately FY 2042. Closure would see a loss of up to 500 operational jobs and may see some outflow of population from the Isaac LGA if other comparable jobs are not available. (17.5.8 Impacts of Project closure, Chapter 17 Social p.43)	DSDSATSIP notes the estimated construction and operational jobs from the construction and operation stages of the project's development. In alignment with previously mentioned employment objectives and training and support pathways for people with Disability, DSDSATSIP would encourage BMA to consider employment targets for people with Disability similar to those identified for Indigenous employment and women under the workforce diversity/recruitment strategies.	The estimated construction and operational jobs from the construction and operation of the Project remain unchanged in the amended EIS. Section 17.5.3 of Chapter 17 identifies BMA's commitment to workplace diversity and inclusion, and BMA will also collaborate with Hinterland Community Care in Dysart and Moranbah and District Support Services (MDSS) to identify and support programs and partnerships which develop employment pathways for local people with disability.
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.007	Chapter 17	Housing	It is also noted that according the stakeholder group IRC there are issues regarding limited rental housing availability, limited investment and availability of residential lots in Belyando Estate (Chapter 17 – social 17.5.9 summary of impacts identified by SIA stakeholders p.17). In response to the issues raised by stakeholders, the project aims to have in place an Accommodation village provision for construction workers, BMA's Community development partnerships and programs, BMA housing strategy, requirement for contractors to stay in accommodation village if rental market is tight i.e. less than 2.5% vacancy rate. (Chapter 17.12 – social p.45 – Summary and significance (outlines key issues identified by stakeholders and mitigation/enhancement strategies).	DSDSATSIP notes the issue of limited housing availability and BMA's proposed approach of the Accommodation Village provision for construction workers including community development partnerships and programs. While it remains unclear as to the impact of the project on housing availability and affordability, DSDSATSIP encourages BMA along with community, investors and other stakeholders to give due consideration to affordable housing for disadvantaged groups including people with Disability; and ensure that affordable housing for people with Disability have high levels of physical accessibility that either meet or exceed the current standards related to accessibility. It is also suggested that affordable housing be situated in close proximity to community facilities such as medical facilities and be accessible via public transport or on foot.	To address indirect housing impacts through stimulation of increased employment in businesses and services, the management measure 'BMA will engage with IAHT and ELAM at least six monthly during construction and the first two years of operation to identify any unanticipated impacts on affordable housing access, including housing access by people with disability' has been included within Table 6.10 of the SIA. Sections 6.5.3 and 6.5.4 of the SIA describes that BMA will address recommendations from Smart Transformation Affordable Housing study, and subsequent commitments following FY22 Q4 roundtable engagement with stakeholders. From 2023, the recommendations from the study will be addressed.
Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	27.008	Chapter 17	Seniors	It is noted that Community members and groups – Moranbah, Dysart, Middlemount identified as a key issue the ageing population and need for support services to retain local seniors. BMA response to this issue is for investments in community facilities and partnerships. Appendix I – 1 Social impact assessment (p.33)	In developing communities which support the inclusion for older people, DSDSATSIP recommends that BMA employs principles designed to create age friendly communities. The former Department of Communities, Disability Services and Seniors, developed a strategy and resource to assist communities to become more age friendly. The strategy and resources is available online at https://www.communities.qld.gov.au/seniors/queensland-age-friendly-community	Moranbah and Dysart have low median ages (31 years and 32 years respectively). BMA has regard to community characteristics, stakeholder feedback and local and state government policies when setting its community investment priorities. In the amended EIS, Section 6.1.5 of the SIA outlines that in refining its future community investment strategies, BMA will have regard to the Queensland Government's social policies (as current), including 'Queensland: an age-friendly community - Strategic Direction', <i>Queensland Women's Strategy 2022–27</i> , <i>Queensland Youth Strategy 2016</i> , and ' <i>Queensland's Disability Plan 2022-27, Together, a better Queensland</i> '.
Isaac Regional Council	28.001	Chapter 17	SIA	The proponents' SIA recognises needs for ongoing consultation and refinement prior to commencement of construction activities. Council is unable to draw a conclusion on the adequacy of this response from the proponent if the SIA relies on data which is over 5 years old and does not propose or anticipate any treatment measures for the social impacts identified.	The proponent should review the entirety of its SIA and provide updated statistics and data to inform, its assumptions, as well as identifying preliminary treatment strategies and firm commitments for each of the social impacts identified. Proposed treatment strategies should extend beyond 'business as usual' and provide net benefits to nearby affected communities.	Chapter 17 of the EIS and the Social Impact Assessment have been updated with more recent data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018), and updated from 2021 census data. Section 17.7 identifies the impacts and associated mitigation measures to reduce the risk rating. Positive impacts (benefits and opportunities) have also been identified.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Isaac Regional Council	28.002	Chapter 14	Transport assessment	The EIS relies upon data from 2018 which is regarded as out of date and not considered by Council to be reflective of current usage patterns. The EIS does not effectively explore the cumulative impacts of induced employment associated with service personnel, nor consider the impact of the increase in oversize/over mass loads. The lack of proposed mitigation measures and inconsistency between the other related management plans of the project demonstrates that a full evaluation of the Projects' impact on Local and State Controlled road network has not fully been explored or mitigated.	That the proponent undertakes significant revision of its traffic impact assessment to address issues of 'data lag' in traffic counts, address cumulative impacts of the proposal on the road network, and develop consistent and cohesive responses to the impacts likely to be sustained to the road network.	To inform the traffic impact assessment (TIA) (Chapter 14), an inspection of the existing road network was undertaken in September 2022. In addition to the inspection, data pertaining to the existing condition of various roads were sourced from Department of Transport and Main Roads and Isaac Regional Council. This included data relating to existing traffic volumes, the existing pavement condition, school bus routes, historic crashes, and information related to planned future road works. To supplement the information received from the road authorities, traffic counts were also independently undertaken at a number of intersections by Austraffic in April 2018. Traffic count data collected in 2018 and subsequently used in this assessment was compared against more recent DTMR traffic count data (2019) used in the Lake Vermont Meadowbrook Project EIS (published in 2022) to verify its accuracy and relevance to existing traffic volumes. This comparison identified that AADT traffic volume counts collected in 2018 are 5.02% higher than baseline traffic volumes collected in 2019. As a result, the 2018 traffic count data is considered appropriate for the purposes of this assessment. BMA will undertake a new traffic count prior to construction to inform secondary approval requirements.
Isaac Regional Council	28.003	Chapter 17	Social assessment	The SIA is characterised by outdated data sets and is absent of any clear and firm commitments in terms of managing negative impacts or providing outcomes which amount to a net benefit for nearby affected communities. No tangible responses to induced impacts of the project such as affordable housing supply, health care needs and child care needs have been provided in the proponents SIA, and in most cases rely on a 'wait and see' approach, rather than genuinely forecasting the impacts and providing robust commitments to manage and ameliorate such impacts.	The proponent reviews its social impact assessment and social impact management plan in its entirety to ensure it is relying upon best available datasets, and develops appropriate commitments that respond to the direct, induced and cumulative impacts of the proposal.	Chapter 17 of the EIS and the Social Impact Assessment have been updated with more recent data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018). Section 17.7 identifies the impacts and associated mitigation measures.
Isaac Regional Council	28.004	Chapter 17	Social assessment	The proponents housing strategy makes reference a number of times to the term 'subject to availability' in regard to BMA subsidised housing. This is not an appropriate response in regard to supply of local housing for workforces.	The proponent reviews its social impact assessment and social impact management plan in its entirety to ensure it is relying upon best available datasets, and develops appropriate commitments that respond to the direct, induced and cumulative impacts of the proposal.	Social Impact Assessment and Social Impact Management Plan have been updated with more recent data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018). References to 'subject to availability' have been made in regards to provision of subsidised housing in Dysart for all Project employees and provision of subsidised housing in Moranbah if this is the employee's choice to move to Moranbah.
Isaac Regional Council	28.005	Chapter 17	Social assessment	The cumulative impact assessment does not include other nearby projects including Lake Vermont Meadowbrook and Isaac Downs which may also have large construction crews in the area within similar timeframes to the Saraji East project.	The proponent reviews its social impact assessment and social impact management plan in its entirety to ensure it is relying upon best available datasets, and develops appropriate commitments that respond to the direct, induced and cumulative impacts of the proposal.	Table 17.10 lists the currently proposed projects in the Isaac LGA and has been updated to include the Lake Vermont Meadowbrook Project and the Isaac Downs Project.
Submitter 2	29.001	Chapter 2 Chapter 11	Greenhouse gas emissions	The scientific consensus is clear that expansion of fossil fuel production must be stopped in order to reduce global GHG emissions and avoid the potentially catastrophic impacts of unmitigated global warming and climate change.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated, within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	In the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project in Section 11.7.4 of the amended EIS.
Submitter 2	29.002	Chapter 2 Chapter 11	Greenhouse gas emissions	The proponent estimates that the project will produce 16Mt of Scope 1 & 2 emissions and 450Mt of Scope 3 emissions over its life. The proposed mitigation measures for Scope 1 & 2 emissions are also vastly inadequate and inconsistent with BHP's own climate commitments (of 30% reduction in operational greenhouse gas reductions by FY2030, against adjusted FY2020 levels. 197 countries, including Australia, agreed under the Paris Agreement to limit "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue[e] efforts to limit the temperature increase to 1.5°C above pre-industrial levels". The Paris Agreement also recognises (our emphasis) "the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge". The Queensland Government accepts the science of climate change and supports the Paris Agreement. The accretion of greenhouse gases in the atmosphere as a result of human activities has already caused changes in the climate system with tangible impacts, including in Queensland: (1) exacerbation of heatwaves; (2) long-term increase in extreme fire weather and length of the fire season; (3) changes in rainfall patterns resulting in severe flooding events; (4) mass bleaching of the Great Barrier Reef; and (5) worsening drought conditions.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.003	Chapter 2 Chapter 11	Greenhouse gas emissions	At 2019, approximately 500 billion tonnes of CO2e could be emitted before emissions will cause the 1.5°C threshold to be exceeded.15 "Committed emissions" from existing infrastructure amounted to 800 billion tonnes of CO2e. The Saraji East Mining Lease Project involves the mining of approximately 8 million tonnes of coal per year for 20 years resulting in over 450 million tonnes of greenhouse gas emissions over the life of the Project. As a result, the Project is inconsistent with the aims of the Paris Agreement and is contrary to the public interest.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.004	Chapter 2 Chapter 11	Greenhouse gas emissions	The EIS is required to address the GHG emissions of the Project, including scope 3 emissions, and consequent impacts, because: (1) it is now clear that the impacts of GHG emissions, including scope 3 emissions, are relevant to be considered as part of the consideration of the public interest of the project under the Mineral Resources Act 1989 (Qld) (MR Act) and a mandatory consideration under the EP Act. The climate change impact from this Project is relevant to the statutory criteria under the MR Act and a mandatory consideration under the EP Act. It has been accepted that GHG emissions, including scope 3 emissions, of a development are relevant to an assessment of its environmental impacts with reference to the standard criteria and of the EP Act public interest criteria of the MR Act. The Queensland Land Court has found that climate change is a matter of general public interest and the impact of GHG emissions must be considered in the grant of a mining lease. This includes the impacts of downstream, or 'scope 3', emissions. Given the significant impacts predicted to arise from the continued accretion of greenhouse gases in the atmosphere, the approval of projects that will result in further GHG emissions has implications for the human rights of people in Queensland now and in the future. Such implications must be given proper consideration in accordance with the HR Act.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Submitter 2	29.005	Chapter 2 Chapter 11	Greenhouse gas emissions	The Project, being a new coal mine is not consistent with ecologically sustainable development and maintaining the ecological processes on which life depends	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	The Project's compatibility was reviewed against the ESD objectives and principles defined in the <i>National Strategy for Ecologically Sustainable Development</i> . Refer to Section 1.4 of Chapter 2 Project Alternatives and Justification for discussion on the integration of ESD principles into the Project development.
Submitter 2	29.006	Chapter 2 Chapter 11	Greenhouse gas emissions	The Project, is not consistent with intergenerational equity as it contributes to "what might fairly be described as the greatest inter-generational injustice ever inflicted by one generation of humans upon the next"	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	The Project has integrated the Intergenerational Equity Principal defined in the <i>National Strategy for Ecologically Sustainable Development</i> . Refer to Section 1.4, Table 2.2 of Chapter 2 Project Alternatives and Justification for an assessment against the Intergenerational Equity Principal.
Submitter 2	29.007	Chapter 2 Chapter 11	Greenhouse gas emissions	The Project, would limit the human rights of people in Queensland to an extent that is not reasonable and justifiable	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.008	Chapter 2 Chapter 11	Greenhouse gas emissions	The Project, would potentially breach your duty of care to the Australian children	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.009	Chapter 2 Chapter 11	Greenhouse gas emissions	Key milestones identified by the IEA in the pathway to net zero emissions by 2050 include "no new coal mines or mine extensions" approved for development by 2021. This milestone is consistent with a carbon budget approach which determines the magnitude and rate of emissions reductions required to meet the goals of the Paris Agreement. This is done by mapping the approximately linear relationship between the cumulative increase in carbon dioxide emissions from human activities since pre-industrialisation against the increase in global average surface temperature, and developing a carbon budget; the amount of carbon that may be used before the target temperature is exceeded. In accordance with the carbon budget approach, a rapid phase out of fossil fuel combustion is required such that no new fossil fuel projects or extensions can reach production.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.010	Chapter 2 Chapter 11	Greenhouse gas emissions	The Project should not proceed because: (1) the Project's GHG emissions, including scope 3 emissions, would contribute to the continued accretion of GHGs in the atmosphere to an extent that is not consistent ecologically sustainable development and with maintaining the ecological processes on which life depends; (2) the EIS fails to address the impacts of the GHG emissions, including scope 3 emissions, associated with the Project; (3) the Project's GHG emissions would contribute to the reasonably foreseeable personal injury to future generations; and (4) the Project's GHG emissions would contribute to the limitation of human rights of Queenslanders.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.011	Chapter 2 Chapter 11	Greenhouse gas emissions	A supplementary EIS must be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,30 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. The supplementary EIS must include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.

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Submitter 2	29.012	Chapter 2 Chapter 11	Greenhouse gas emissions	Chapter 11 of the EIS purports to estimate GHG emissions from the Project activities and address potential impacts;31 however, it fails to address the impacts of the Project's GHG emissions on the climate system.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.013	Chapter 2 Chapter 11	Greenhouse gas emissions	Scope 3 emissions for the Project represent the vast majority of GHG emissions associated with the Project. Accordingly, such emissions have implications for the public interest, the environment and for the human rights of people in Queensland.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.014	Chapter 2 Chapter 11	Greenhouse gas emissions	The purposes of an EIS include to assess the potential adverse environmental, economic, and social impacts of a project.32 As a result of the failure to report on the impacts of GHG emissions for the Project and take such impacts into account in the cost benefit analysis, the EIS is wholly inadequate and should not proceed.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.015	Chapter 2 Chapter 11	Greenhouse gas emissions	So that the impact of those emissions can be properly considered in the cost-benefit analysis the range of costs imposed by those emissions (described as the social cost of carbon33) should be estimated. For example, Queensland is responsible for the protection of the Great Barrier Reef, which supports 70,000 jobs and \$6bn in economic activities in Australia each year. limiting global warming to 1.5°C would limit coral loss on the Great Barrier Reef to 70-90%, compared with >99% if warming increases to 2°C.34 The costs of permitting further GHG emissions must be adequately considered. Further, even if further information is provided in respect of the Project's GHG emissions and associated impacts, the Project's contributions to the continued accretion of GHG emissions and consequent impacts on the environment and human rights of people in Queensland mean that the Project should not proceed.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	As part of the amended EIS, Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project. The amended EIS demonstrates BMA are aware of their corporate responsibilities in relation to the Project and greenhouse gas emissions. As outlined in Chapter 11 Air Quality and Greenhouse Gas, BMA propose mitigation measures for site level emissions and takes action at a corporate level to address the wider implications of greenhouse gas emissions and climate change in Section 11.7.3 and 11.7.4. The cost benefit analysis in Chapter 18 Economics is robust, and the conclusions are not expected to be sensitive to the inclusion of any costs related to GHG emissions.
Submitter 2	29.016	Chapter 16	Heritage	The project site has been identified as containing at least 42 Aboriginal Heritage Sites and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourse. The Project proposal to undermine three major creek systems is likely to represent a major risk to cultural heritage in that context. Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	Cultural heritage should be fully protected and there should be no longwall panels allowed beneath creeks.	A review of historical, archaeological and register information indicates that there are least 43 Aboriginal heritage sites within the Project Site and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourses. The impacts on these known sites, as well as the identification of any additional sites, will be managed under BMA's existing CHMP with the Aboriginal Party (CLH012020). Any potential impacts to such places will be managed under a chance finds procedure. The Project layout is designed to preferentially locate above-ground infrastructure within previously disturbed areas, and proposes underground long wall mining methods instead of open cut mining techniques to minimise adverse environmental impacts and comply with relevant regulatory requirements e.g. model mining conditions. Detailed assessment of potential impacts of mining and subsidence is provided in Chapter 5 (Land resources), Chapter 8 (Surface water) and Chapter 21 (Matters of National Environmental Significance) and supporting technical appendices. This EIS addresses feedback and additional information requested by the Independent Expert Scientific Committee to assess the Project.

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Submitter 2	29.017	Chapter 10 Geochemistry	Leachate	It is apparent that there is the potential for selenium leachate from coal rejects from the Project, which represents a contamination risk given that selenium is bio accumulative through the food chain if released to surface waters. The proposal is to store the waste in the Saraji Mine's in-pit spoil dumps.	Additional information is warranted to determine the capacity of the Saraji Mine to store this waste, and the full suite of risks which accrue over time, and especially after mine closure.	Chapter 10 Geochemistry and mine waste describes the proposed measures for storage of mine waste from the Project in Section 10.7. There is a risk of leachate from coal rejects containing elevated soluble metal concentrations under laboratory conditions. To demonstrate potential for selenium leachate from coal rejects, 83 of the 718 samples collected by BMA in 2021, were selected for analysis of selenium levels. The analysis identified 15 samples with leachable concentrations of selenium exceeding the NEPM (2013) GIL (0.02 mg/L). 48 samples were <0.01 mg/L and 20 samples had concentrations 0.01 to 0.02 mg/l, as included in Figure 10-2 of Chapter 10. The amended EIS confirms mineral waste generated by the Project will be managed in accordance with the mitigation measures proposed in Chapter 10, Section 10.7, including the conditions of EA EPML00862313. Existing in-pit spoil dumps will be used or developed in line with the approved Saraji Mine plan. As detailed in 10.7, the transition from open cut mining to underground longwall mining significantly reduces waste rock generation and coarse rejects columns due to a more refined and targeted mining method. Consequently, the existing in-pit spoil dumps at Saraji Mine provide ample capacity to accommodate the additional volume of mineral waste generated by the Project as demonstrated by the amended EIS. Sufficient capacity exists in the existing Saraji Mine waste management system to accommodate the anticipated mine waste from the Project; specifically the Bauhinia Pit provides ample capacity (some 60 million bank cubic meters (Mbcm)) to accommodate the additional volume of mine waste generated by the Project (estimated at 28 Mbcm). BMA has completed an analysis to demonstrate the sufficient disposal capacity is available for Project mine waste within the existing Bauhinia Pit, refer Figure 10-5. As noted in the amended Chapter 10 Geochemistry and Mine Waste, Section 10.7.5, Appendix K-1 Rehabilitation Management Plan (RMP) has been developed to describe rehabilitation of the in-pit spoil dumps at the existing Saraji Mine, which will be undertaken in accordance with the Saraji Mine EA. BMA will undertake ongoing operational geochemical characterisation of mineral waste materials in planned deposition areas at the existing Saraji Mine ahead of mining to confirm the geochemical characterisations of these materials.
Submitter 2	29.018	Chapter 2	Progressive Rehabilitation and Closure Plan	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C.	If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050. The Project's potential impacts from air quality and greenhouse gas emissions are assessed in Chapter 11 Air Quality and Greenhouse Gas. That chapter also presents the Project's scope 3 greenhouse gas emissions. The assessment of potential greenhouse gas emissions and climate change impacts included a preliminary climate change risk assessment for the Project.
Submitter 2	29.019	Chapter 11	Air quality	The EIS identifies the risk of adverse impacts on air quality at the Saraji 2 and Saraji 3 Homesteads, due in part to the haulage of coal from the Project CHPP to the Saraji Mine CHPP. The proponent refers to co-existence agreements in place with BMA and landholders of the Homesteads, but mining companies should not be able to pressure landholders into agreements to the detriment of their health. The mine plan should not be approved if it is likely to worsen air quality at sensitive receptors.	The Project should be refused. If the Project is to proceed further, a supplementary EIS be undertaken considering the climate change impact of the scope 1, 2 and 3 greenhouse gas (GHG) emissions of the Project as calculated,3 within a global carbon budget framework consistent with the aims of the Paris Climate Agreement to limit global warming to well below 2°C. If the Project is to proceed further, include the social and economic costs of GHG emissions and their impacts in the cost benefit analysis, as referred to in Chapter 18 of the EIS, in a supplementary EIS.	The results of dispersion modelling included in Chapter 11 Air Quality and Greenhouse Gas and Appendix H-1 Air Quality Technical Report show that there is a risk of concentrations at Saraji 2 and Saraji 3 homesteads being elevated above the relevant air quality criteria. However, results from the cumulative impact assessment suggest that the suite of mitigation measures available to the Project and in particular, those targeting improved outcomes related to the hauling of ROM coal between the CHPPs, will be sufficient to mitigate the risk of additional exceedances of the EPP(Air) objective for the 24 hour average concentration of PM10 under adverse conditions. The Air Management Plan for the Project will include details of the proposed air quality monitoring program which will consider the use of continuous dust monitors to measure PM10 and automatic weather stations to record meteorological conditions The monitoring program will allow conditions to be monitored, allowing Project activities to be adjusted to minimise impacts as far as reasonably practicable. Chapter 2 Project alternatives and justification provides an overview of the Project need in context of growing demand and progressive decarbonisation in Section 2.2.1. This discussion demonstrates that the target high quality coals of the Bowen Basin will continue to be needed and will become increasingly valuable in optimisation of steel making while undergoing progressive decarbonisation of the global steel value chain to net zero greenhouse gas emissions by 2050.
Queensland Fire and Emergency Services	30.001	Chapter 20 Hazard and Risk		References to the Fire and Rescue Service Act 1990 and Regulation should be amended to reflect current titles of the legislation: Fire and Emergency Services Act 1990 and Fire and Emergency Service Regulation 2011	References to the Fire and Rescue Service Act 1990 and Regulation should be amended to reflect current titles of the legislation: Fire and Emergency Services Act 1990 and Fire and Emergency Service Regulation 2011	References to the Fire and Rescue Service Act 1990 and Regulation have been amended to reflect the current titles of the legislation.
Queensland Fire and Emergency Services	30.002	Appendix O-1 Summary of Commitments	Item 38	As per Commitments, Item 38 Offset Management Plan Queensland Fire and Emergency Services Sustainable Development Unit and particularly Rural Fire Service should be invited to review the proposed Bushfire management Plans for any Offset Management Plan. As per rehabilitation commitments 84 – 86 Queensland Fire and Emergency Services Sustainable Development Unit and particularly Rural Fire Service should be invited to review the proposed Bushfire Management Plan(s) component for any Progressive Rehabilitation and Closure Plan. (PRCP)	Contact should be directed to the Sustainable Development Unit in the first instance.	Bushfire management planning is considered in the amended EIS as part of Chapter 6 Terrestrial Ecology, Appendix C-1 Terrestrial Ecology Technical Report and BMA's commitment to develop and implement a Bushfire Management Plan reiterated in Appendix O-1 Summary of commitments.
Queensland Fire and Emergency Services	30.003	Appendix O- 1 Summary of Commitments	Item 58	As per the Commitments, Item 58 Social keep Queensland Fire and Emergency Service updated on project planning and of the intended workforce ramp-up Emergency – undertake the Commitments for the development of the Emergency Management Plan with engagement with QFES.	Contact should be directed to the Sustainable Development Unit in the first instance.	Noted. This requirement is noted in Section 6.5.6 of the EIS Appendix L-1.
Department of Children Youth Justice and Multicultural Affairs	31.001	N/A	N/A	The Department of Children, Youth Justice and Multicultural Affairs has no interest or issues with the proposed Saraji East Mining Lease Project (coal mining) and does not therefore wish to make a submission on the EIS. Helen Missen, Executive Director has approved	N/A	No response is required for this submission.
Department of Energy and Public Works	32.001	N/A	N/A	DEPW does not own or lease properties impacted by this (EIS Saraji East Mining Lease) application.	N/A	No response is required for this submission.
Department of Energy and Public Works	32.002	N/A	N/A	Government Employee Housing, within the Department of Energy and Public Works, has reviewed the environmental impact statement (EIS) for the proposed Saraji East Mining Lease Project (coal mining) and advise that we have nil comments.	N/A	No response is required for this submission.
Department of Tourism Innovation and Sport - Tourism	33.001	N/A	N/A	Please be advised that DTIS (Tourism) has reviewed the Saraji East Lease Project and does not consider that it will impact on the State's tourism interests. Thank you for the opportunity to review the proposal.	N/A	No response is required for this submission.
Department of Tourism Innovation and Sport - Sport and Recreation	33.002	N/A	N/A	Please be advised that a nil response has been endorsed by the Assistant Director-General, Sport and Recreation (Department of Tourism, Innovation and Sport). As the project is located within a sparsely populated rural area containing land mainly used for livestock grazing and there are no identifiable potential impacts on any land used for community sport or active recreation purposes.	N/A	No response is required for this submission.
Department of State Development, Infrastructure, Local Government and Planning	34.001	Appendix L-1 Social Impact Assessment	N/A	The EIS and Social Impact Assessment (SIA) adequately identifies and addresses the social impacts of the project in the SIA study area, however information and data referenced in the document is dated.	Update and review social conditions and statistics to ensure Social Impact Management Plan (SIMP) addresses any significant changes in the SIA study area, particularly in the areas of Labour Force, Skills Shortages, population, housing and accommodation.	Chapter 17 of the EIS and the Social Impact Assessment have been updated with more recent data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018).

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Department of State Development, Infrastructure, Local Government and Planning	35.001	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The last update to the SIA occurred in June 2019. The information and stakeholder engagement used to inform the SIA dates occurred 2018.	Re-engage with stakeholders and update the SIA and proposed management measures in the SIMP to reflect any new information. The updated SIA should also include the outcomes of specific consultation on the Saraji East Mining Lease Project SIA and SIMP strategies that has occurred since 2018-19. The updated SIA should be developed in consultation with OCG.	Data from BMA's consultation activities have been used to inform the Social Impact Assessment (SIA) included in the EIS as Appendix L-1. Since 2018-19, BMA has undertaken specific consultation with Isaac Regional Council (IRC), State agencies and a range of other stakeholders as part of the EIS process. The SIA engagement process included meetings with the Office of the Coordinator General (OCG) and IRC to seek feedback on the SIA scope, and consultation with the IRC, community members and organisations, Queensland Government agencies and businesses to: - verify and supplement the research and analysis undertaken for the social baseline - discuss the Project's potential impacts and benefits - obtain input to the impact assessment and mitigations. DES placed the EIS on public display and invited public and agency submissions between 24 May 2021 and 2 July 2021. A total of 30 submissions on the draft EIS were received. Submissions of relevance to the SIA included those from Department of State Development, Infrastructure, Local Government and Planning (DSDILGP), IRC, Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP), Queensland Police Service (QPS) and QFES. BMA undertook an engagement process with IRC (April 2022 – March 2023) on the proposed management measures and social investment approach. The outcomes of IRC consultation to date are shown in Table 2.9 of Appendix L-1. Further detail on Council's inputs to the SIMP, following review of the draft updated SIA in 2022-2023, is provided in Table 6.2 of Appendix L-1. The letter to stakeholders, updated SIA summary and updated SIA technical report were provided to the OCG. If requested, BMA will meet with the OCG to discuss the updates to the SIA and SIMP.
Department of State Development, Infrastructure, Local Government and Planning	35.002	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The SIA contains references that the construction for the project will commence in 2021. This would no longer be the case. There are references throughout the SIA that the 'projects timing is uncertain'. A clear understanding of the timing for a project assists consideration of the likely impacts on communities; the provision of upfront commitments in the SIMP to manage foreseeable impacts and a better understanding of the possible cumulative impacts with other projects.	The SIA should be updated to reflect the timeframes for the project. These timeframes should be clearly linked to the SIA/SIMP strategies. For example, Table 17.7 Estimated population and housing demand change (Ch.17 Social pp.17-29) needs to be updated as projected dates commence 2021	Project timeframes within Chapter 17 and the SIA have been updated to reflect project commencement in 2023.
Department of State Development, Infrastructure, Local Government and Planning	35.003	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	Information and consultation findings presented in the social baseline is from 2018-19. The census data used is from 2016 (this is the most recent census data and cannot be updated).	Provide any updates on the following based on the new consultation: - Local housing market (vacancy, availability, affordability) - Workforce Accommodation Village capacities (Dysart and Moranbah) - Social infrastructure and services capacity (childcare, health and emergency) - Local and regional labour force (availability, unemployment, indigenous participation, skills shortages).	The social baseline in section 17.4.4 has updated data from the Australian Bureau of Statistics (ABS) and Queensland Government Statistician's Office (QGSO) (ABS 2008, 2011, 2016, 2017, 2021; QGSO 2015, 2016, 2017, 2018).
Department of State Development, Infrastructure, Local Government and Planning	35.004	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	Confirmation of the status of the BMA dwellings in Moranbah and Dysart. The data provided in the SIA is from March 2019. The strategy to provide BMA housing in Dysart to support a local workforce is a key commitment in the SIMP. However, the SIA identifies that much of the housing in Dysart requires maintenance and repair. It is understood there has been discussions with other resource companies and stakeholders on the status of BMA housing in Dysart and Moranbah. There may be some opportunities to release housing for use by other projects (depending on the timing of the Saraji East Mine). The SIMP notes that BHP could also make surplus housing stock available to local businesses and services.	Provide updates on the status, condition and availability of BMA housing in Dysart and Moranbah. Any progress on the consultation and approach for surplus housing should also be documented.	The SIA has been updated with data from 2021. The expected need for housing will be assessed during the first six months of operations, based on new personnel's intentions regarding their living arrangements. There are currently 70 dwellings (36 in Dysart and 34 in Moranbah) ready for immediate occupancy. If this housing supply is inadequate, BMA will develop new housing on its vacant and build-ready lots, equivalent to the shortfall between the number of BMA-owned dwellings available and the number of Project personnel who wish to move to the Isaac LGA. The availability and uptake of housing will be carefully monitored to enable timely planning for any new housing development needs (refer section 6.4.3).
Department of State Development, Infrastructure, Local Government and Planning	35.005	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	Potential cumulative impacts resulting from this project and other projects. It is likely there will be increased pressure for housing (i.e. in Dysart) that would result from projects proceeding at the same time. Isaac Downs and Olive Downs have now progressed though the EIS and SIMP process. Lake Vermont Meadowbrook is currently in the EIS process and the small Vulcan Complex Project has completed an SIA as part of Environmental Authority. It is understood that both of these latter projects have an interest in Dysart housing options.	Provide an update on the possible cumulative impacts of this project with the development of other projects and the strategies to manage these impacts. These may include any collaborative management strategies or awareness of commitment from other projects in key impact areas (i.e. childcare, medical, housing etc).	Table 17.10 lists the currently proposed projects in the Isaac LGA. Given uncertainties in the timing of some projects, including this Project, the assessment of cumulative impacts is speculative. Table 17.12 in section 17.7 identifies cumulative impacts on construction labour, demand for health services and housing, and provides mitigation measures including Business capacity building programs through C-Res Foundation, contract with a local GP clinic to provide workplace health services and access to a GP for personnel staying in the WAV, and provision housing and accommodation for BMA personnel.
Department of State Development, Infrastructure, Local Government and Planning	35.006	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The WAV accommodation for the non-local operations workforce has not been confirmed. The SIA states that BMA would monitor demand for accommodation village beds as part of its recruitment process. It is acknowledged that stakeholders (including OCG) did not consider that new operational accommodation was required.	Provide an update on WAV availability and sufficient capacity to accommodate the non-local operational workforce.	Section 22.4.10 has been updated to include potential cumulative impacts resulting from multiple new coal mining projects commencing operation in the Isaac LGA including increased demand for accommodation, settlement and community support services, recreational and cultural services, childcare and school enrolments. A Social Impact Management Plan is included within the Social Impact Assessment (refer Appendix L-1 Social Impact Assessment) which details how BMA will work with local and regional stakeholders to mitigate social impacts and maximise opportunities identified in relation to the Project. Prior to the Project's construction, BMA will reassess the potential for cumulative impacts and its local and regional implications to inform further engagement with the DCSMP, IRC and other agencies.
Department of State Development, Infrastructure, Local Government and Planning	35.007	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The SIMP notes that BMA will consult with Isaac Regional Council and local community networks to identify and agree the priorities for community investment as part of refining and detailing the SIMP. Noting that this is anticipated to include support for upgrades to community facilities and service capacity in Dysart. The timing for the above is 12 months prior to construction. This approach would rely on post evaluation SIMP conditions and further revision of the SIA/SIMP.	Update the SIMP with the outcomes of further consultation with Isaac Regional Council and the local community and the agreed priorities for community investment	Section 7.3 of Appendix L Social Impact Assessment outlines that during construction, BMA will undertake annual reviews of the SIMP, in consultation with stakeholders including IRC and stakeholders identified in the monitoring framework.

Submitter	Submission Ref. No.	Relevant EIS Chapter / Appendix	Section	Submission	Submission - proposed response	Proponent response
Department of State Development, Infrastructure, Local Government and Planning	35.008	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The SIA identifies measurable impacts in the following areas: - Childcare - Medical - Health and Community Wellbeing (mental health). The nominated SIMP strategies rely on the proponent monitoring impacts and working with stakeholders to identify possible solutions.	Include in the SIMP further (specific) implementation details of any agreed outcomes with relevant stakeholders in the management plans.	Table 6.2 'Stakeholder inputs on updated SIMP' outlines the outcomes of the consultations and how any agreed outcomes have been addressed in the SIMP or SIA.
Department of State Development, Infrastructure, Local Government and Planning	35.009	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	BHP community development programs outline the focus for investment during FY2019. The programs and investment are amalgamated for all BHP/BMA projects in the region and not easily distinguished for the Saraji East Mining Lease Project or project specific investment in the impacted local communities (i.e. Dysart).	Provide an update on the BHP focus for programs and investment and project specific SIMP investment for the Saraji East Mining Lease Project.	Chapter 17, section 17.5.5 subheading 'BHP community development approach' describes that through BHP's 'Benefiting My Community Program' grants of up to \$20,000 for grassroots community organisations are provided across the Isaac, Central Highlands and Mackay regions. Investments in community projects and partnerships have been identified as mitigation and management measures within sections 17.5.9 and 17.7.
Department of State Development, Infrastructure,	35.010	Chapter 17 Appendix L-1 Social Impact Assessment	N/A	The last consultation with Isaac Regional Council occurred in July 2019 with the presentation and discussion of the draft SIMP.	Document the outcomes of the consultation with Isaac Regional Council on the draft SIMP (i.e. agreements on SIMP management strategies and commitments).	The 2019 consultation with Isaac Regional Council (IRC) has been documented within Chapter 2, section 2.5 of the SIA and within Table 6.2 of the SIMP. Each of the key issues raised has been addressed within section 2.5 and the outcomes has been documented within Table 6.2.